

A. Introduction

The Audit Commission (“Audit”) conducted a review on Nano and Advanced Materials Institute (“NAMI”), covering project management, industry income and commercialization, administrative expenditure and corporate governance, etc.

Background

2. NAMI was established in April 2006 as a Research and Development (“R&D”) Centre for nanotechnology and advanced materials. It is a company limited by guarantee, wholly owned by its host institution, i.e. the Hong Kong University of Science and Technology (“HKUST”). The operating cost of NAMI is supported by funding from the Innovation and Technology Fund (“ITF”) which is administered by the Innovation and Technology Commission (“ITC”). The Government, HKUST and NAMI have entered into a tripartite Funding Agreement (“Funding Agreement”), which sets out the understanding of the three parties on the application of funds from ITF for the operation of NAMI and other related matters. ITC monitors the operation and performance of NAMI and submits NAMI’s progress reports to the Legislative Council (“LegCo”) on a regular basis. As at 31 July 2024, the total funding commitment for NAMI approved by the Finance Committee (“FC”) of LegCo was \$1,515.3 million. The funding commitment from ITF would support the operation of NAMI for 22 years from 1 April 2006 to 31 March 2028. In the period from 2019-2020 to 2023-2024, the income and expenditure of NAMI ranged from \$226.8 million to \$290.2 million each year.

Public hearings

3. The Committee held two public hearings on 7 and 14 December 2024 to receive evidence. The opening statements made by **Professor Dong SUN, Secretary for Innovation, Technology and Industry** and **Mr Andy FUNG, Chief Executive Officer, NAMI** at the first public hearing are in *Appendices 4* and *5*. The Committee noted that Mr Andy FUNG took up the post of Chief Executive Officer of NAMI on 2 September 2024 and had been actively following up on the recommendations made in the Director of Audit’s Report No. 83 (“the Audit Report”) since his assumption of office.

Funding mechanism

4. Referring to the Funding Agreement that came into effect in May 2006 as mentioned in paragraph 1.6 of the Audit Report, the Committee asked the

Administration to elaborate on the respective obligations and responsibilities of the three parties, namely the Government, HKUST and NAMI, as well as the consensus reached by them, and to explain why the funding commitment from ITF to support the operation of NAMI was set for such a long period of 22 years. **Mr Ivan LEE Kwok-bun, Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 13 December 2024 (*Appendix 6*) that:

- the respective obligations and responsibilities of the three parties under the Funding Agreement were summarized as below:
 - (a) NAMI was responsible for driving and coordinating applied R&D in accordance with its technology roadmap and promoting technology transfer and commercialization of R&D deliverables. NAMI also was required to conduct its operation in accordance with the terms of the Funding Agreement, including submitting to the Commissioner for Innovation and Technology every year the following, as vetted and endorsed by the Board of Directors (“the Board”): an Annual Plan (comprising the annual estimates, major activities, performance targets, etc.), Quarterly Reports (setting out major activities and cash flow in each quarter), an Annual Report (reporting its operation for the whole financial year including actual performance against the performance targets and actual financial situation) and the audited accounts; and
 - (b) currently, HKUST mainly provided administrative support (such as tendering and procurement, employee and property insurance, information technology systems) to NAMI, while the Government funded the operating expenses of NAMI through ITF, and monitored the operation and performance of NAMI by vetting Annual Plans and estimates, Quarterly Reports/Annual Reports and audited accounts; and
- since the establishment of the five R&D Centres¹ (including NAMI) in 2006, the Government had continued to review the role, positioning and performance indicators of each R&D centre, and make adjustments as appropriate to the resources allocated to them based on the needs of the industry and technological development. The Government would

¹ The five R&D Centres are the Automotive Platforms and Application Systems R&D Centre, the Hong Kong Applied Science and Technology Research Institute (“ASTRI”), the Hong Kong Research Institute of Textiles and Apparel, the Logistics and Supply Chain MultiTech R&D Centre, and NAMI.

report to FC on a timely basis on the comprehensive review of the performance of the R&D Centres and seek FC's approval to increase their commitments to continue funding the R&D Centres' operation. In the latest review, the Government announced in November 2024 that the Hong Kong Applied Science and Technology Research Institute ("ASTRI") would merge with NAMI.

5. Regarding the above merger of ASTRI and NAMI, the Committee enquired about the reasons for that, as well as the impact of the merger on NAMI's organization structure, manpower resources, government funding, expenses, etc. **Secretary for Innovation, Technology and Industry** explained at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 13 December 2024 (*Appendix 6*) that ASTRI and NAMI respectively drove and coordinated applied R&D in the areas of information and communications technologies, and nanotechnology and new materials. Merging the two centres through organic integration would enhance their complementary advantages on applied R&D and create synergies, thereby fostering new industrialization. After merging the two centres, overall savings in operating costs were expected to be achieved through rationalization and consolidation in the medium to long run. Regarding the staff establishment, appropriate arrangements would be manifested through redeployment and natural wastage. ITC would commission an independent consultant to make suggestions on the transitional arrangements and implementation plan on the merger. The Government expected to commence the transition process in 2025-2026.

Income and expenditure

6. Referring to paragraphs 1.7 to 1.9 of the Audit Report, the Committee enquired about the reasons for the 29% decrease in NAMI's other income² (excluding government funding) from \$60.4 million to \$42.8 million and the increase in administrative and operating expenses by some 35% from \$102.3 million to \$137.9 million in the period from 2019-2020 to 2023-2024, and the items with higher expenses. The Committee also sought NAMI's explanation on the procedure and vetting process in drawing up its annual estimates. **Commissioner for Innovation and Technology, Chief Executive Officer, NAMI** and **Ms Jenny YIU, Chief Operating Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 13 December 2024 (*Appendix 6*) that:

² Other income mainly comprised industry sponsorships and commercialization income.

- in the past few years, due to the impact of the epidemic and the external environment, followed by the uncertain economic outlook, local small and medium-sized enterprises (“SMEs”) tended to adopt a wait-and-see attitude towards investing in innovation and technology (“I&T”), resulting in a decline of NAMI’s other income. In the post-epidemic period, SMEs still faced many challenges and needed time to resume business development and regain confidence in investing in I&T. In the future, NAMI would strengthen its commercialization work to boost its other income;
- NAMI set up a bio-healthcare laboratory in 2021-2022 to carry out bio-and-health-related R&D projects, and a battery laboratory in 2022-2023 to carry out R&D projects related to advanced battery materials. The relevant rental, equipment and device costs had increased accordingly. Of the administrative and operating expenses of NAMI, the items with higher annual expenditures in 2023-2024 and the corresponding percentages were “R&D-related expenses, laboratory consumables, technology and testing service fees” (28%), “laboratory and office equipment and related depreciation” (25%), “rent” (16%), and “management fee and utilities” (9%); and
- when drawing up its annual estimates, NAMI would refer to the expenditures of different items in the past, and gauge the financial needs of different divisions regarding the R&D direction and business development plan for the coming year. After deliberation and consolidation by the management, it would first submit the annual estimates to the Finance and Administration Committee for deliberation and review before submitting to the Board. Only the annual estimates endorsed by the Board would be submitted to ITC for approval. When vetting the annual estimates, ITC would consider whether the estimates were reasonable and met the actual needs of NAMI. During the entire vetting process, relevant teams within ITC (including the finance team) would participate in the review and give recommendations to the Commissioner for Innovation and Technology.

7. According to Table 1 in the Audit Report, NAMI’s income was the same as its expenditure in the period from 2019-2020 to 2023-2024, as any unspent balance of project grants from ITF had to be returned to the Government. The Committee asked whether this arrangement would encourage NAMI to deliberately use up all its grants to avoid having any unspent balance, thus resulting in a waste of resources. The Committee also asked the Administration to give an account of the income and

expenditure of NAMI (including the amount of grants returned to the Government) in the period from 2019-2020 to 2023-2024 on a cash basis accounting approach. Details were set out in the letter from the Commissioner for Innovation and Technology dated 10 February 2025 (*Appendix 7*).

8. **Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 13 December 2024 (*Appendix 6*) that as far as operating expense was concerned, the unspent fund would be reflected through an offsetting arrangement when ITC applied to FC for increase in commitment to extend the operation period of NAMI. When it was recommended to FC in 2020 to increase the commitment to extend the operation period of NAMI to 2024-2025, ITC had deducted the estimated remaining commitment of NAMI as of 31 March 2021 by about \$11.9 million. For projects funded by ITF, NAMI was required to submit project proposals to the Technology Committee under the Board for discussion and review. Only proposals endorsed by the Technology Committee would be submitted to ITC for approval. When reviewing the proposals, ITC would consider whether the expenditure requirements were reasonable and met the actual R&D needs. ITC also required NAMI to submit progress/final reports and audited accounts for projects that had commenced. Upon completion of the project, NAMI had to return all unspent government funding. In this connection, NAMI had returned a total of some \$21.9 million to the Government in the past five financial years, accounting for approximately 5.5% of the total funding amount of the relevant projects approved.

Governance structure and monitoring mechanism

9. Referring to paragraphs 1.10 to 1.13 of the Audit Report, the Committee enquired about the respective roles and responsibilities of the Government, HKUST and the Board of NAMI in the corporate governance of NAMI, and whether the Administration had reviewed the effectiveness of the monitoring mechanism with the three functional committees, namely the Technology Committee, the Finance and Administration Committee and the Audit Committee under the Board. **Secretary for Innovation, Technology and Industry, Commissioner for Innovation and Technology, Mrs Elina CHAN NG Ting-ting, Assistant Commissioner for Innovation and Technology (Research and Development Centres) and Professor CHENG Shuk-han, Chairwoman, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** supplemented in his letter dated 13 December 2024 (*Appendix 6*) that:

- the Board of NAMI provided steering on policy and strategic direction, and supervised the management of NAMI. The Board held at least four meetings every year, and additional meetings would be held when necessary. The major functions of the Board included: (a) steering NAMI's R&D direction; (b) monitoring regularly the operational and financial sustainability of NAMI; (c) examining and endorsing Annual Plans, annual estimates and performance targets; and (d) examining and endorsing Quarterly Reports, Annual Reports and annual audited accounts;
- as HKUST was the host institution, its representative was a member of the Board. NAMI also drew reference from the guidelines provided by HKUST to develop more detailed internal guidelines for various administrative and financial matters;
- the Government monitored the operations and performance of NAMI on a macro level on the whole, and as stated in the Funding Agreement, required NAMI to formulate its own Corporate Governance Manual to set out specific rules and guidelines for NAMI's daily operations; and
- as a company, NAMI's Board supervised its operation, R&D work and development. The non-official directors of the Board came from different backgrounds with distinct professional knowledge. They played an important role to steer the R&D direction and supervise the operation and financial arrangements of NAMI.

10. According to a paper previously submitted to FC, there was a Steering Committee under the Board of NAMI. The Committee enquired about the roles, functions and operation of the Steering Committee. **Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 13 December 2024 (*Appendix 6*) that the information stated in the paper submitted to FC in June 2005 was the initial proposal from HKUST on establishing NAMI. At that time, the proposed Board only comprised of the President and three Vice-Presidents of HKUST. Subsequently in November 2005, the Preparatory Committee tasked for the setting up of NAMI deliberated and decided that the composition of the Board should be broadened to include the Commissioner for Innovation and Technology, a representative from HKUST, and representatives from the academia, industry, chambers of commerce, and research institutes. In this form, the Board took up the role and function of the Steering Committee mentioned in the initial proposal.

11. Referring to the adjustments made to NAMI's organization structure in October 2024 as mentioned by the Chief Executive Officer of NAMI at the public hearings, the Committee sought details from NAMI on how such adjustments enhanced the operation of NAMI. **Chief Executive Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 13 December 2024 (*Appendix 6*) that NAMI's Project Administration Team, which had been previously overseen by the Chief Commercial Officer, had been put under the supervision of the Chief Operating Officer from October 2024 onwards, making the Team independent from business development so that it could focus on monitoring the progress and management of R&D projects, thereby striving for timely project commencement and completion, thus enhancing the quality of project management.

12. With reference to paragraph 1.14 of the Audit Report, the Committee enquired about the criteria used in setting the six performance indicators in Table 2, and how these six performance indicators could effectively evaluate NAMI's performance; whether the same criteria were adopted by the other R&D Centres in setting their performance indicators applicable to them. **Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 13 December 2024 (*Appendix 6*) that:

- since 2017-2018, ITC had been requiring all R&D Centres to submit progress reports on six performance indicators, namely: (a) level of industry and other income; (b) number of ongoing projects involving industry participation; (c) number of companies participating in ongoing projects; (d) number of organizations benefiting from the Public Sector Trial Scheme ("PSTS"); (e) number of researchers engaged under the Research Talent Hub; and (f) number of patents filed and granted; and
- since the establishment of the above performance indicators, ITC had established a common target indicator for all R&D Centres on the level of industry and other income. To encourage R&D Centres to strengthen cooperation with the industry, ITC had raised the original 30% target to 35% and 40% in 2023-2024 and 2024-2025 respectively. As for other performance indicators, since each R&D centre was distinct and the industries they served were also different, it was difficult to devise a set of uniform indicators. Currently, R&D Centres formulated their targets based on their respective focus of development and industry trends, which were more flexible and realistic.

R&D projects

13. According to paragraph 1.16 of the Audit Report, R&D projects were categorized into ITF-funded projects and contract research projects that were financially supported by the industry with no funding support from ITF involved. ITF-funded projects included platform projects, collaborative projects, seed projects and PSTS projects. The Committee enquired about the categorization of the 242 R&D projects completed by NAMI in the period from 2019-2020 to 2023-2024 mentioned in paragraph 1.15 of the Audit Report. **Chief Operating Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 13 December 2024 (*Appendix 6*) that the categorization of the 242 R&D projects was as follows: collaborative projects (98), seed projects (43), platform projects (30), PSTS projects (10) and contract research projects (61).

14. Referring to paragraph 1.16 of the Audit Report, the Committee asked whether the Administration would consider seeking research cooperation with the Mainland and overseas places in respect of ITF-funded projects. **Secretary for Innovation, Technology and Industry** and **Commissioner for Innovation and Technology** advised at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 13 December 2024 (*Appendix 6*) that ITF financed projects that could help enhance the I&T level of Hong Kong's manufacturing and service industries and promote the development of I&T. Applicants for R&D-related funding schemes under ITF must be local research institutes, enterprises or industrial and trade associations etc. In order to encourage local research institutes to cooperate with research institutes outside Hong Kong, ITC had allowed up to 50% of the R&D work and the related expenses of funded projects to be conducted outside Hong Kong. In addition, the Mainland-Hong Kong Joint Funding Scheme and the Guangdong-Hong Kong Technology Cooperation Funding Scheme under ITF aimed to support and encourage Hong Kong to strengthen research cooperation with universities, research institutes and technology enterprises in the Mainland.

B. Project management

15. According to paragraph 2.3 of the Audit Report, in the period from 2019-2020 to 2023-2024, the performance targets on the number of ITF-funded projects commenced were not met in four of these five years. In addition, according to paragraph 2.5 of the Audit Report, the performance targets on the number of ITF-funded projects completed were not met in these five years, with a shortfall ranging from 6 to 32 projects as compared to the targets. Moreover, as pointed out

in paragraph 2.7(b) of the Audit Report, among the 46 ITF-funded projects completed in 2023-2024, 34 (74%) projects were completed after the target dates of completion stipulated in the project agreements. The average delay was 7.7 months, ranging from 3 to 18 months. The Committee enquired why the above targets were not met. **Commissioner for Innovation and Technology** explained in his letter dated 13 December 2024 (*Appendix 6*) that:

- in terms of the number of ITF-funded projects commenced, as local SMEs tended to adopt a wait-and-see attitude towards investing in I&T in recent years amid the uncertain economic environment, they were more willing to support platform projects that only required 10% sponsorship of the total R&D project cost. This was indeed reflected in the fact that NAMI could achieve the targets on the number of platform projects commenced in recent years and the number of these projects had been steadily increasing. NAMI's performance indicators on the number of ITF-funded projects commenced in 2024-2025, the performance indicators on the number of ITF-funded projects completed, and the achievement of the targets on the number of platform projects from 2019-2020 to 2023-2024 were set out in the above letter;
- in terms of the number of ITF-funded projects completed, it fell short of the targets mainly because of delays in project completion, which were primarily attributed to unforeseeable technical difficulties encountered during the R&D process, late shipment of equipment/consumables amid the epidemic, difficulties in recruiting R&D staff, etc. In order to reduce project delay due to unforeseeable technical difficulties, from January 2024 onwards, NAMI had required its research staff to conduct preliminary research and characterization tests on relevant technologies and methods before project commencement, so as to identify potential technical difficulties in advance, thereby reducing the risk of project delay and improving project efficiency. In addition, through strengthening the monitoring function of the Project Administration Team, which had been put under the supervision of the Chief Operating Officer, project management at different stages had been enhanced; and
- ITC understood that there was a chance whereby research institutes would experience project delay due to different reasons. Hence, if research institutes needed to extend the project period for successful development of R&D results, they might submit applications to ITC. ITC would stringently examine the justifications for such applications. Even if applications for project period extension was approved, ITC would urge the research institutes concerned to complete the relevant

projects as soon as possible. For the 34 projects mentioned in paragraph 2.7(b) of the Audit Report, NAMI had submitted to ITC applications for project extension and the relevant projects were completed within the extended period.

16. According to paragraphs 2.3(c) and 2.5 of the Audit Report, NAMI's Board/functional committees had discussed at their meetings the shortfalls in meeting the targets on the number of ITF-funded projects commenced/completed. The Committee enquired why NAMI did not keep proper records of the relevant issues. **Chairwoman, NAMI** and **Chief Operating Officer, NAMI** responded at the public hearings, and **Commissioner for Innovation and Technology** explained in his letter dated 13 December 2024 (*Appendix 6*) that NAMI had tended to keep a brief record of Board/committee meetings in the past. NAMI would adopt Audit's recommendations and keep proper records of the discussions at meetings in the future.

17. According to paragraph 2.12(a) of the Audit Report, for the 47 ITF-funded projects with post-project evaluation reports due for submission in 2023-2024, the reports of 24 (51%) projects had been submitted to ITC, and among them, the reports of two (8%) projects were submitted with delays of 4 and 47 days respectively. For the remaining 23 (49%) projects, reports had not been submitted to ITC. As at 30 June 2024, the reports were overdue for 91 to 366 days (averaging 226 days). The Committee enquired about the reasons for the delayed submission of the aforesaid reports to ITC; whether NAMI had previously set up any mechanisms or guidelines to monitor/report the progress of the submission of such reports, and whether ITC had followed up on the situation of late submission and non-submission of reports by NAMI. **Chief Executive Officer, NAMI** and **Chief Operating Officer, NAMI** responded at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 13 December 2024 (*Appendix 6*) that:

- the main reason for the delayed submission of post-project evaluation reports was that the project coordinators needed time to collate relevant information. For collaborative projects, it also took time to seek comments from industry partners. Regarding the 23 collaborative projects in respect of which reports had not been submitted as pointed out in paragraph 2.12(a) of the Audit Report, the reports of 21 projects were subsequently submitted to ITC, while the reports of the remaining two projects were not required to be submitted as the projects were shelved. NAMI had strengthened the accountability of its Project Administration Team. Apart from reminding individual project teams earlier to submit reports on time, it also required them to notify the

management of the anticipated cases of failure to submit reports on time for follow-up; and

- ITC had been regularly following up on projects in respect of which reports had not been submitted on time, including issuing reminders to project coordinators through the ITC Funding Administrative System. ITC would also regularly review the submission status of project reports and remind through telephone calls the submission of reports. Project coordinators would also be required to, before commencing new projects, submit overdue reports and/or audited accounts of all ITF-funded projects under their responsibilities, otherwise they would not be allowed to commence new projects.

18. As mentioned in paragraph 2.15(b) of the Audit Report, NAMI would step up its measures in assessing the market needs and collaborate with the industry and relevant departments/organizations for generation and incubation of project ideas, as well as promotion of NAMI's technologies to initiate worthwhile projects, and would closely monitor the project progress to ensure that the target numbers of ITF-funded projects commenced/completed were met. The Committee requested NAMI to advise on the details of such measures, and whether the performance targets were expected to be met in 2024-2025. **Commissioner for Innovation and Technology** advised at the public hearings and in his letter dated 13 December 2024 (*Appendix 6*) that NAMI would conduct detailed market demand analysis to ascertain the market trend and the technology development direction, strengthen cooperation with the industry, and organize regular seminars for exchanges with relevant departments/organizations. In addition, NAMI would require its research staff to conduct preliminary research and characterization tests before project commencement and regularly conduct phased evaluation on projects, so as to enhance the feasibility of projects. NAMI would also adjust project plans based on feedback and actively seek opinions from industry partners to follow up with them on the project evaluation reports that should be submitted by them. NAMI hoped to improve performance as soon as possible through the series of new measures.

19. According to paragraph 2.17 of the Audit Report, in the period from 2019-2020 to 2023-2024, the performance targets on the number of contract research projects commenced were not met in three (60%) of these five years, but the number of these projects was double the target in 2020-2021. Moreover, the target number of contract research projects commenced decreased by 50% from ten in 2022-2023 to five in 2023-2024, but there was no documentary evidence showing the reasons for adjusting the target significantly. The Committee requested NAMI to explain the

aforesaid situation and the target number for 2024-2025. **Chief Executive Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** supplemented in his letter dated 13 December 2024 (*Appendix 6*) that SMEs had been more conservative in investing in I&T amid the uncertain economic environment over the past few years. Consequently, contract research projects that required full contribution from the industry were relatively more difficult to commence. However, in 2020-2021, in the light of the epidemic, relevant enterprises actively sought to apply nanotechnology and advanced materials to provide technical solutions that could improve public health safety and personal protection. Hence, seven contract research projects were added, resulting in an increase in the number of contract research projects for that year. When setting the performance target on the number of contract research projects commenced for 2023-2024, NAMI had taken the actual situation of 2022-2023 into consideration. As SMEs needed more time to resume their business development after the epidemic, NAMI set a relatively conservative target for 2023-2024, but eventually the number of projects commenced exceeded the target, helping enterprises to solve their pain points. The performance target on the number of contract research projects commenced for 2024-2025 was eight. At present, NAMI had commenced six contract research projects, and would strive to achieve the performance target in the next few months.

20. According to paragraph 2.19 of the Audit Report, in the period from 2019-2020 to 2023-2024, the performance targets on the income from contract research projects had been lowered by 32% from \$8.2 million in 2019-2020 to \$5.6 million in 2023-2024. However, the actual income outperformed the targets in four of these five years, with the over-achievements ranging from 4% to 88%. The Committee enquired about the reasons for the substantial downward adjustment of the performance targets of the aforesaid projects and whether it was intended to be used as a means to improve performance. **Secretary for Innovation, Technology and Industry** and **Chief Executive Officer, NAMI** clarified at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 13 December 2024 (*Appendix 6*) that when setting its annual targets, NAMI had comprehensively considered the prevailing economic environment, market demand for different technologies, and the industry's desire to commence new projects. As the economic environment in recent years remained to be improved, NAMI decided to lower the targets. Nevertheless, NAMI strived to communicate with the industry so that enterprises would understand and recognize that I&T and R&D could help improve their competitiveness, and would ultimately commence more projects beyond the target.

21. The Committee further enquired how NAMI would set more aggressive targets on the income from contract research projects, whether it would consider setting upper and lower targets respectively, and about the performance target for 2024-2025. **Secretary for Innovation, Technology and Industry** and **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** supplemented in his letter dated 13 December 2024 (*Appendix 6*) that when setting its targets, NAMI would comprehensively consider the external economic environment, market demand, and NAMI's technological development, business development plans and human resources conditions. NAMI would set targets that were both aggressive and practicable in line with its actual capabilities and future development direction. The performance target on the income from contract research projects for 2024-2025 was \$6 million, an increase of 7% from the target of \$5.6 million for 2023-2024. NAMI would strive to achieve the performance target.

22. Referring to paragraph 2.24 of the Audit Report which mentioned that Audit had found that NAMI's Laboratory Safety Team had pre-filled the results of the checking procedures in its inspection report, the Committee enquired about NAMI's follow-up actions on the incident and the investigation results, and whether the existing manpower arrangements for the Laboratory Safety Team were sufficient to cope with the work demand. **Chief Operating Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** supplemented in his letters dated 13 December 2024 and 7 January 2025 (*Appendices 6 and 8*) that:

- after investigation, NAMI found that the staff concerned failed to correctly use the inspection checklist and strictly follow the standard protocol for laboratory safety inspections. NAMI had issued a written warning to the staff concerned, and amended the inspection checklist and updated procedures, including adding a new "inspection time" field to the inspection checklist to prevent pre-filling or late filling, and assigning a safety officer in each laboratory to supervise day-to-day safety management. Moreover, NAMI had amended the inspection report template in accordance with Audit's recommendations;
- NAMI had implemented a two-tier inspection process: (a) technical teams would perform weekly self-inspections on the safety of their respective laboratories and were required to report to the heads of division and the Laboratory Safety Team for review and endorsement; and (b) the Laboratory Safety Team would conduct inspections on a bi-monthly basis, and the reports would be reviewed and endorsed by the heads of division, the Chief Technology Officer and the Chief

Operating Officer. No non-compliance had been found since the implementation of the aforesaid measures to improve laboratory safety in mid-December 2024; and

- NAMI's Laboratory Safety Team currently comprised a senior laboratory safety manager who was the person in charge of the team, and two laboratory safety managers respectively responsible for general safety management and instrument and chemical safety management. The manpower could cope with the work demand.

23. According to paragraph 2.26 of the Audit Report, for the non-compliances found during some of the laboratory safety inspections, there was no documentary evidence showing that NAMI had taken corresponding remedial actions. In addition, according to paragraph 2.28 of the Audit Report, there was no documentary evidence showing that some laboratory safety inspection reports were reviewed by the Directors of Research and Development as required. The Committee enquired whether the non-compliances found in seven laboratories were similar or identical, and whether NAMI had followed up on the aforesaid inadequacies and reported to the Board. **Chairwoman, NAMI, Chief Executive Officer, NAMI and Chief Operating Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** supplemented in his letters dated 13 December 2024 and 7 January 2025 (*Appendices 6 and 8*) that the non-compliances in seven laboratories were similar, including unsatisfactory overall cleanliness of the laboratories, staff conducting experiments without appropriate protective equipment, chemical storage and labelling not complying with guidelines, and access to first aid equipment such as eyewash stations and emergency showers being obstructed by miscellaneous items. NAMI had reported to the Board the incidents mentioned in paragraphs 2.26 and 2.28 of the Audit Report, and had instructed the relevant staff to clearly record the non-compliances found during the laboratory safety inspections, follow-ups on corresponding remedial actions and their completion dates, as well as items that could be improved, in the inspection reports for timely review and approval by the relevant Directors of Research and Development and the Chief Technology Officer. NAMI had also set a time limit for the relevant Directors of Research and Development to review the safety inspection reports.

24. The Committee further enquired whether NAMI had formulated guidelines for staff to deal with or rectify non-compliances in laboratories. **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** supplemented in his letter dated 7 January 2025 (*Appendix 8*) that NAMI would regularly circulate the laboratory safety manual via email on a quarterly

basis or as and when the guidelines were updated, and would post the basic laboratory safety codes in laboratories to raise safety awareness among staff. The Laboratory Safety Team would also remind staff to comply with the laboratory safety codes through unscheduled inspections, safety training and safety team meetings.

25. According to paragraphs 2.30 and 2.31 of the Audit Report, in the period from 2019-2020 to 2023-2024, as far as two project performance indicators (respectively on “the number of companies participating in ongoing projects” and “the number of organizations benefiting from PSTS”) were concerned, there were differences between the numbers reported in the papers submitted to LegCo and those based on NAMI’s supporting records. The Committee enquired why there were such discrepancies, whether other R&D Centres had the same problem, and whether LegCo would be misled as a result. **Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 13 December 2024 (*Appendix 6*) that all R&D Centres adopted “R&D project” as the base unit when calculating the relevant performance indicators, meaning that if a company participated in multiple projects or an organization benefited from multiple projects at the same time, the performance indicators would be calculated based on the number of projects it participated in or benefited from. Since ITC first reported the aforesaid two performance indicators to LegCo in 2017-2018, it had required all R&D Centres to adopt a consistent method to calculate relevant data. ITC agreed with Audit’s recommendations and would include an explanatory note on the calculation basis of the performance indicators in future reports submitted to LegCo.

26. According to paragraph 2.33 of the Audit Report, the number of researchers engaged under the Research Talent Hub decreased by 29% from 31 in 2020-2021 to 22 in 2023-2024. The Committee enquired whether NAMI had looked into the reasons for that. **Secretary for Innovation, Technology and Industry, Commissioner for Innovation and Technology** and **Chief Operating Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** supplemented in his letter dated 13 December 2024 (*Appendix 6*) that the number of researchers engaged under the Research Talent Hub was based on the number of R&D projects that could be commenced. In view of the decrease in the number of projects commenced in recent years and the challenges encountered in recruitment, NAMI would proactively increase the number of researchers engaged under the Research Talent Hub to meet R&D requirements based on different projects and market demand.

C. Industry income and commercialization

27. According to paragraph 3.5 of the Audit Report, the level of industry and other income of NAMI fell short of its targets in two of the five years from 2019-2020 to 2023-2024, with shortfalls of 4.3 percentage points in 2020-2021 and 5.8 percentage points in 2022-2023 respectively. The Committee enquired why the targets could not be met in these two years, and why ITC had raised the target on level of industry and other income from 30% for 2019-2020 to 2022-2023 to 35% for 2023-2024. **Secretary for Innovation, Technology and Industry** advised at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 7 January 2025 (*Appendix 8*) that in 2020-2021, the number of collaborative R&D projects commenced with industry contribution decreased due to the epidemic, and the level of industry and other income was thus adversely affected. In 2022-2023, despite the eased epidemic, the overall economy was still volatile and industry partners tended to adopt a wait-and-see attitude towards investing in I&T. This had a direct impact on the number of collaborative R&D projects and contract research projects commenced with industry contribution, hence affecting NAMI's level of industry and other income. With the stabilization of the economic situation after the epidemic, and the Government's intention to step up its efforts to encourage the R&D Centres to cooperate with the industry, so as to facilitate the R&D Centres' technology transfer to the industry and commercialization of R&D results, ITC therefore raised the target on level of industry and other income to 35% from 2023-2024 onwards.

28. According to paragraph 3.6 of the Audit Report, ITC had indicated to the Panel on Commerce, Industry, Innovation and Technology of LegCo that it was considering raising the target on level of industry and other income to 40% in 2024-2025, and would explore the possibility of raising the target further to 50% in the long run. The Committee enquired of ITC about the basis for the upward adjustment. **Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 7 January 2025 (*Appendix 8*) that ITC had set the target on level of industry and other income for the R&D Centres at 35% since 2023-2024, and all the R&D Centres had achieved beyond the target. To further encourage the R&D Centres to strengthen cooperation with the industry, ITC raised the target to 40% in 2024-2025, and would explore the possibility of raising the target to 50% in the long run. In raising the target, the Government had to strike a proper balance taking into account the R&D Centres' public mission to widely transfer technology to the industry and other objective factors. As the economic environment would remain challenging in the short run, ITC would continue to monitor the economic situation in the coming year before fixing any implementation timetable for further raising the target.

29. Referring to paragraphs 3.7 and 3.8 of the Audit Report, the Committee enquired why ITC and NAMI had adopted different calculation methodologies for reporting NAMI's level of industry and other income, resulting in discrepancies between the relevant figures reported in NAMI's Annual Reports and those reported in the papers submitted by ITC to LegCo. **Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 7 January 2025 (*Appendix 8*) that in ITC's papers regularly reporting on the R&D Centres' progress of work to the Panel on Commerce, Industry, Innovation and Technology of LegCo, data on the R&D Centres' levels of industry and other income were provided, whereas in NAMI's Annual Reports, "industry income" and "other income" were presented as separate entries, thus giving rise to discrepancies in the relevant data.

30. According to paragraphs 3.14, 3.17 and 3.18 of the Audit Report, in the period from 2019-2020 to 2023-2024, NAMI filed 411 patent applications, with 142 patents granted and 81 patent applications (i.e. about 20%) discontinued. The Committee requested NAMI to provide the respective percentages and numbers of each type of project in the aforesaid granted and discontinued patent applications, and to explain the considerations for applying for a patent on an R&D project and for deciding to discontinue a patent application, as well as whether the success rate would vary according to the project type. **Secretary for Innovation, Technology and Industry, Chairwoman, NAMI** and **Chief Executive Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that:

- among the 142 patents granted, 69 were from seed projects (49%), 39 from platform projects (27%), 11 from collaborative projects (8%) and 23 from small-scale experiments (16%); whereas among the 81 discontinued patent applications, 26 involved provisional patents that automatically expired with no standard patent application filed, and 55 were discontinued standard patent applications comprising 28 from seed projects (51%), 15 from platform projects (27%), 7 from collaborative projects (13%) and 5 from small-scale experiments (9%);
- during the patent application process, NAMI would generally apply for a provisional patent on an R&D project in order to secure the "priority date" of the patent application, so that NAMI would have priority over competitors when applying for a standard patent subsequently, and this was crucial to obtaining the ownership of the final standard patent. For the sake of effective utilization of resources, NAMI would choose not to file a standard patent application after the expiration date of the provisional patent should it discover during the subsequent R&D process

that the technology under the provisional patent did not satisfy a basket of factors concerning, inter alia, the commercialization income the patent might generate, the maintenance cost, whether the technology could be used as background intellectual property for future R&D projects, the availability of similar yet more sophisticated patents within NAMI or in the market, and the relevance of the patent to the future development of NAMI. NAMI would keep a standard patent application under review based on these factors to determine whether the application should be continued; and

- given the higher threshold in innovativeness for seed projects, platform projects, collaborative projects with industry contribution of less than 50% of the total project cost, and small-scale experiments undertaken by NAMI, there were no significant differences in the application success rates among these projects, with an overall approval rate of over 70%.

31. The Committee further enquired about the difficulties encountered by NAMI in the patent application process, whether the discontinuation of applications would result in wastage of resources, and the specific measures in place to reduce such discontinuation. **Secretary for Innovation, Technology and Industry, Chairwoman, NAMI and Chief Executive Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that:

- NAMI generally encountered the following difficulties when applying for patents:
 - (a) technical complexity: high-end technologies often involved complex technical details, which made it more difficult for patent application documents to be prepared and examined;
 - (b) prior art search: as it would take 12 to 24 months for each patent application to be disclosed, patents newly applied for might not be found when searches for similar technologies in the patent database were made to determine the innovativeness of a technology; and
 - (c) legal and normative changes: patent regulations and examination standards might vary with countries and regions, which would increase the complexity and uncertainty of high-end technology patent applications; and

- NAMI would take a series of measures to facilitate the approval of standard patent applications, including the use of designated prior art search software for comprehensive searches of existing technologies, expanding the database of patent law firms and communicating closely with lawyers to enhance the quality of patent write-ups, and formulating a timetable upon receipt of the examiners' opinions and responding to each examination opinion in a timely manner to shorten the overall examination time.

32. With reference to paragraph 3.14 of the Audit Report, the Committee enquired about the long-term plan to promote commercialization of NAMI's project results. **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 13 December 2024 (*Appendix 6*) that ITC had established the Innovation Hub@HK website to showcase a total of more than 560 R&D outcomes by 12 local universities and public research institutes (including NAMI) as well as 28 InnoHK research laboratories. The website served as a one-stop search platform, allowing market participants to customize search criteria according to their needs and contact individual research institutes and universities directly to explore commercialization opportunities, thereby facilitating commercialization of research outcomes and technology transfer to the industry. In order to promote commercialization of project results, NAMI would improve patent management, conduct regular market demand analysis, strengthen industry-academia-research cooperation with universities, other research institutes and enterprises, and enhance market promotion and brand building in the local market, the Mainland and countries along the Belt and Road, thereby enhancing the market competitiveness and influence of NAMI.

33. According to paragraphs 3.27 to 3.29 of the Audit Report, of the 73 platform projects and seed projects completed in the period from 2019-2020 to 2023-2024, up to 31 March 2024, 50 (68%) projects had not generated any licensing fee income since their completion, while the remaining 23 (32%) projects had generated a licensing fee income of \$7.2 million (representing 7.4% of the project costs on average). The Committee enquired why most of the projects had failed to generate any licensing fee income or had only generated a relatively low level of licensing fee income, and whether this was due to insufficient marketing by NAMI or lack of communication with the industry about the demand for R&D products. **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 7 January 2025 (*Appendix 8*) that:

- apart from transferring its patented technologies to the industry through licensing arrangements, NAMI would also conduct technology transfer through collaborative projects and contract researches for the industry. In general, if an industry partner had contributed more than 50% of the total cost of an R&D project, the industry partner would own the intellectual property right(s) generated from the project for direct commercialization, and no licensing arrangement would be involved; and
- of the 50 projects which had not generated any licensing fee income (comprising 30 seed projects and 20 platform projects), 16 projects (32%) (comprising 6 seed projects and 10 platform projects) were completed in 2023-2024 (i.e. representing an elapsed time of one year or less since completion). Besides, 30 (60%) were seed projects of an exploratory nature that could pave the way for further R&D collaborations with the industry. Seed projects would often give rise to downstream platform projects, collaborative projects or contract research projects from which commercialization income could be generated. As at November 2024, of those 50 projects, 28 (comprising 17 seed projects and 11 platform projects) had given rise to 36 downstream projects (comprising 24 platform projects, 9 collaborative projects, and 3 contract research projects and other applied research projects).

34. Regarding the possibility of seed projects germinating new research projects and hence generating commercialization income, the Committee enquired whether there had been successful examples in the past. **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that past successful examples included a collaborative project concerning a separator-free battery technology with high safety derived from two seed projects. In addition to the industry contribution provided by the relevant industry co-applicant for the collaborative project, NAMI had also received a royalty of more than \$150,000 for it. In respect of another seed project involving an oral core-shell microsphere technology that had led to a platform project concerning encapsulated probiotics with a targeted delivery function for colonization, NAMI had also received a licensing fee of over \$30,000.

35. As mentioned in paragraphs 3.31 and 3.32 of the Audit Report, NAMI would explore measures to increase the licensing fee income generated from platform projects and seed projects, and had compiled general guidelines on how to determine licensing

fees. The Committee requested NAMI to provide relevant details. **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that:

- NAMI had taken the following measures to increase the licensing fee income from projects:
 - (a) strengthen the screening of platform and seed projects, including requiring active industry participation for each project through, for example, the provision of relevant trial production support to the industry to increase the chance of successful commercialization after project completion;
 - (b) produce small batches of the project deliverables/prototypes on its own where feasible for promotion to the industry with a view to expediting the industry's adoption of related technologies; and
 - (c) actively initiate collaboration with strategic partners, and arrange dedicated technology display areas in the Hong Kong Science Park Shenzhen Branch, Nanshan Zhiyuan Shenzhen-Hong Kong Youth Innovation and Entrepreneurship Base, the exhibition hall of Jiangmen Science and Technology Bureau, etc., to increase the chances of technology licensing and receiving licensing fees. NAMI had compiled a summary of the list of licensable technologies for promotion through chambers of commerce, exhibitions and promotional meetings. NAMI would also actively participate in or organize thematic briefings on technology in the Mainland cities of the Greater Bay Area, Belt and Road countries and Southeast Asian countries to promote cross-region exchanges and cooperation in technology; and
- NAMI had established a clear guideline and calculation mechanism whereby projects were classified into different levels based on project costs, with the corresponding licensing fees/royalties, trial duration and annual charges defined under each level. Licensing fees were subject to adjustments based on project budgets and technical considerations under the aforesaid mechanism.

36. In response to the Committee's enquiry about the commercialization income generated from collaborative projects and contract research projects for NAMI, **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner**

for Innovation and Technology further explained in his letter dated 7 January 2025 (*Appendix 8*) that collaborative projects with 50% of R&D funding from industry contribution and contract research projects with 100% industry contribution involved royalties. Upon completion of the projects, royalties would be charged on the basis of usage or sales volume according to the contract terms.

37. Under the Funding Agreement revised in 2018, NAMI's commercialization income would be used in a manner agreed by the Commissioner for Innovation and Technology. The Committee enquired about the reasons behind this arrangement, the vetting and approval mechanism and the use of such income. **Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 7 January 2025 (*Appendix 8*) that in the past, the R&D Centres had been required to return incomes generated from ITF-funded projects (such as the income generated by commercialization of project deliverables) to ITF. With the approval of FC in July 2018, ITC allowed the R&D Centres to retain part of their commercialization income for use in strategic activities, such as technology development and market trends analyses, R&D infrastructure building, staff development or small-scale experimental projects, so as to further incentivize commercialization of R&D outcomes. NAMI was required to submit a proposal every year regarding the uses and estimates of the strategic reserve fund to the Board for endorsement and thereafter to the Commissioner for Innovation and Technology for approval.

D. Administrative expenditure and corporate governance

38. According to paragraph 4.4 of the Audit Report, a NAMI employee had, during business travels, extended the stay for personal reasons. While the employee had obtained separate approvals for the business travels and annual leave for the extended period of stay, and had subsequently paid the additional travelling costs involved, Audit found that the employee had not sought approval for the modification of business travel arrangements, and NAMI did not have specific guidelines in this regard. Although it was mentioned in paragraph 4.15(b) of the Audit Report that NAMI would enhance the relevant guidelines and set out the approving authorities, some members enquired whether NAMI would consider putting in place a mechanism for disallowing employees' extension of stay during business travels, so as to avoid undue negative perceptions. Some members were of the view that in order to retain talents, non-governmental organizations might adopt a more lenient approach in handling such applications, on the premise that no additional costs would be incurred to them and that the approving officers were fully aware of the situation when vetting and approving the applications. In this connection, the Committee requested NAMI to provide details of the new guidelines and explain whether they were in line with the Administration's relevant practice.

39. **Secretary for Innovation, Technology and Industry, Chairwoman, NAMI, Chief Executive Officer, NAMI and Chief Operating Officer, NAMI** responded at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 7 January 2025 (*Appendix 8*) that:

- the new guidelines clearly stated that employees should avoid varying business trips for personal reasons. Employees with a genuine need to vary their duty passage must submit an application for this purpose together with the application for the business travel, and bear any additional costs involved. NAMI would consider in a prudent manner whether to accept employees' applications for variation of duty trips due to personal reasons, in particular those involving staff of supervisory grade, and would keep the relevant mechanism under review; and
- the provision of duty passage for civil servants travelling on duty outside Hong Kong was governed by the Civil Service Regulations. An officer who wished to vary his duty passage arrangements for personal reasons should seek prior approval from the approval authority. Approval might be given subject to the conditions that (a) the modification would not undermine the original justifications for the passage arranged by the Department; (b) additional expenses, if any, must be met by the officer; and (c) savings, if any, should not be used to subsidize the officer's personal travel. The authority for modification of passage rested with Heads of Department, or the relevant Permanent Secretary (or supervising officer if there was no relevant Permanent Secretary) if the officer travelling was a Head of Department.

40. Referring to paragraphs 4.7(a) and 4.12(a) of the Audit Report which pointed out that the subsistence allowance and entertainment expense reimbursement claims involving the Chief Executive Officer were approved by his subordinates or himself, the Committee enquired whether NAMI agreed that there was a lack of checks and balances in this practice. **Chairwoman, NAMI and Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 7 January 2025 (*Appendix 8*) that according to the previous edition of the Corporate Governance Manual of NAMI, the approving authority was dependent on the amount of the claim involved instead of the rank of the claimant. Nevertheless, NAMI agreed with Audit's recommendation that there was room for improvement in the previous guidelines regarding the approval mechanism for subsistence allowances and entertainment expenses involving the Chief Executive Officer. For this reason, NAMI revised the relevant guidelines in October and November 2024, stipulating that all subsistence allowances and entertainment

expenses involving the Chief Executive Officer were subject to the approval of the Chairperson of the Board. In the light of the Committee's suggestion, NAMI would review the criteria and recommendations on how best to assist the Chairperson of the Board in making approval decisions, and would update the relevant mechanism in a timely manner. The new guidelines provided by NAMI were set out in the above letter from the Commissioner for Innovation and Technology.

41. According to paragraph 4.7(b)(ii) of the Audit Report, Audit found that the meal costs incurred by the then Chief Executive Officer of NAMI in four business travels exceeded the entitled subsistence allowance. The excess amounts ranged from \$607 to \$4,700 and were borne by NAMI. The Committee requested NAMI to explain the reasons for the excess. Besides, apart from the improvement measures mentioned in paragraph 4.15 of the Audit Report, i.e. enhancing the relevant guidelines and issuing reminders to staff, the Committee enquired whether NAMI had put in place other measures to ensure that its staff understood the underlying significance of formulating the new guidelines and would act in accordance with them. **Chief Executive Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that all the business travels mentioned in the Audit Report involved participation in large-scale exhibitions or conferences, and among them, the business travel with an excess amount of \$607 involved one meal arrangement for seven staff members, while the business travel with an excess amount of \$4,700 involved eight meal arrangements (five to six staff members were involved in each meal, and the excess amount per head was about \$105). The main reason for the meal costs being in excess of the allowance was that the event schedules were tight, and there was no cheaper dining option in the vicinity of the event venues given the limited time available. NAMI revised the relevant guidelines in November 2024 to improve the approval process for meal costs exceeding the entitled subsistence allowance. The new Chief Executive Officer also elaborated on the relevant guidelines for all employees at a town hall meeting held in December 2024, instructing them to follow the guidelines.

42. According to paragraph 4.12 of the Audit Report, Audit examined 50 entertainment expense reimbursement claims which were approved in the period from 2019-2020 to 2023-2024, and found that two (4%) of the claims involved meal costs exceeding the cost-per-head spending limits by \$39 and \$50 respectively. For the former claim, there was no approval for exceeding the limit from the Chief Executive Officer or the Chief Operating Officer. For the latter claim, while approval for exceeding the limit had been granted by the Chief Operating Officer, the relevant justifications were not documented. The Committee enquired about the

cost-per-head spending limits of entertainment expenses, whether such limits would be reviewed regularly, and the follow-up actions taken by NAMI in respect of the above findings of Audit. **Commissioner for Innovation and Technology** explained in his letter dated 7 January 2025 (*Appendix 8*) that regarding the two cases with excess entertainment expenses mentioned in the Audit Report, one of them was for lunch, of which the cost-per-head spending limit was \$450, while the other one was for dinner, of which the cost-per-head spending limit was \$600. Such limits were set according to the guidelines of HKUST, and would be revised subject to updates from HKUST. NAMI revised the relevant guidelines in October 2024 to improve the approval process for excess entertainment expenses, including stipulating that entertainment expenses involving the Chief Executive Officer were subject to the approval of the Chairperson of the Board, as well as reminding all employees to observe the spending limits of entertainment expenses. The relevant guidelines would be recirculated on a quarterly basis. NAMI also reminded all employees that entertainment expense claims exceeding the spending limits would be approved only with sufficient justifications, which would be properly documented.

43. According to paragraph 4.12(c) of the Audit Report, of the aforesaid 50 entertainment expense reimbursement claims examined by Audit, 8 (16%) involved entertainment expenses incurred by staff below the Section Director grade, with no prior approval obtained from Section Directors or above. Covering approvals were obtained 1 to 37 days after the entertainment expenses were incurred. The Committee asked NAMI why the staff concerned had not obtained prior approvals, and whether a time frame had been set for covering approvals. **Commissioner for Innovation and Technology** explained in his letter dated 7 January 2025 (*Appendix 8*) that regarding the aforesaid eight entertainment expense reimbursement claims, the staff concerned had made verbal reports to their supervisors beforehand and obtained formal covering approvals afterwards. NAMI revised the relevant guidelines in October 2024 to clearly stipulate that prior approval must be obtained for all entertainment expenses. In exceptional circumstances, if no formal prior approval could be obtained in time, covering approval must be obtained as soon as possible. The justifications for all approvals and covering approvals given would be properly documented.

44. According to paragraph 4.12(d) of the Audit Report, among the aforesaid 50 entertainment expense reimbursement claims examined by Audit, one (2%) claim involved an event in which the participating NAMI staff significantly outnumbered the guests entertained, with eight NAMI staff members and two guests. However, the justifications for the above arrangement were not provided in the claim form. The Committee requested NAMI to explain the above and how it had followed up Audit's findings. **Commissioner for Innovation and Technology** explained in his letter

dated 7 January 2025 (*Appendix 8*) that the entertainment case in question involved two industry partners. As the discussion would involve collaboration and promotion plans for commercialization of multiple projects, eight NAMI staff members joined, including the Chief Executive Officer, Chief Officers, and technical managers and marketing managers of the related fields. NAMI revised the relevant guidelines in October 2024 to specify the reasonable ratio of NAMI staff to guests entertained, and that the justifications for exceptional cases must be documented.

45. According to paragraphs 4.17(a), 4.21 and 4.22 of the Audit Report, in accordance with NAMI's Corporate Governance Manual, the Sub-Committee of the Technology Committee of NAMI should convene its meeting normally on a weekly basis. However, Audit found that there was no documentary evidence showing that the Sub-Committee held any meetings in the period from 2019 to 2023. In fact, the Sub-Committee discussed and endorsed agenda items by email circulation instead. The Committee enquired whether NAMI considered that the Sub-Committee could properly discharge its duties without the need to convene meetings, and whether the relevant practices specified in the Corporate Governance Manual were obsolete and in need of revisions. **Chief Executive Officer, NAMI** and **Chief Operating Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 7 January 2025 (*Appendix 8*) that the agenda items discussed and endorsed by the Sub-Committee by email circulation included audited accounts after project completion and project-related change requests (e.g. project extensions, and adjustments of conditions of project deliverables). Since November 2024, NAMI had resumed regular weekly meetings to discuss and endorse relevant agenda items. NAMI would review these arrangements and consider appropriate revisions to the Corporate Governance Manual as and when necessary.

46. As pointed out in paragraph 4.19 of the Audit Report, three non-official members of the Board had served continuously for more than six years, but according to a good corporate governance practice set forth in the Guide to Corporate Governance for Subvented Organisations published by the Government, non-official members were not normally appointed to sit on the same advisory or statutory body for more than six years to ensure a healthy turnover of members. In his response in paragraph 4.34 of the Audit Report, the Commissioner for Innovation and Technology advised that NAMI's Board was not a government advisory or statutory body and thus the "six-year rule" did not apply. The Committee asked whether the Administration considered the current turnover of NAMI's Board members satisfactory. **Secretary for Innovation, Technology and Industry** explained at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that while the "six-year rule" did not apply to NAMI's Board,

ITC would still make its best efforts to take into account the above appointment principle when appointing NAMI's non-official Board members. In addition to monitoring the day-to-day operation and financial position of NAMI, examining various kinds of reports and vetting its R&D projects, NAMI's Board was also responsible for providing guidance on the overall R&D direction and commercialization of R&D deliverables of NAMI. Therefore, ITC always adhered to the principle of "appointment by merit", taking into account whether the relevant expertise and experience of the candidates concerned would fit in with the core direction of NAMI's future development. If it was recommended that a director who had served for more than six years be reappointed, the considerations and justifications would also be specified.

47. As regards paragraphs 4.25, 4.27 and 4.29 of the Audit Report which pointed out the areas for improvement in declarations of interest concerning NAMI, NAMI indicated that it would strengthen its monitoring in this regard. The Committee requested NAMI to provide the specific details of its improvement measures. **Chief Executive Officer, NAMI** and **Chief Operating Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that NAMI would continue to step up efforts in reminding Board or Committee members that if they needed to declare interests due to their personal or work capacities, they must declare them at meetings. In addition, declarations of interest made at a meeting and whether the members concerned had remained in the meeting or voted on relevant matters would be documented in detail.

E. Other issues

48. According to paragraph 5.7 of the Audit Report, Audit examined 20 recruitment cases in the period from 2019-2020 to 2023-2024 and found that for 10 (50%) recruitment cases, members of the Selection Panel declared that they had personal or working relationships with the candidates, but the members concerned had remained in the Selection Panel. There was no documentary evidence showing the Selection Panel's decision on whether the members concerned should remain in the Panel or withdraw from the Panel. The Committee requested NAMI to provide the relevant details. **Chief Executive Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that the declarations mainly involved working relationships, for instance, the candidates being current NAMI staff holding other posts, former staff, former summer interns, etc.

49. According to paragraph 5.9 of the Audit Report, the average staff turnover rate of NAMI in the period from 2019-2020 to 2023-2024 was 22.8%. As advised by the Chief Executive Officer of NAMI at the public hearings, 90% of the departing staff was R&D personnel. The Committee enquired about the reasons for their departure, measures to retain staff, whether the high turnover rate of R&D personnel would have any impact on R&D work, and whether the above was related to the reduction in the number of researchers engaged under the Research Talent Hub. **Commissioner for Innovation and Technology, Chairwoman, NAMI, Chief Executive Officer, NAMI and Chief Operating Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** further explained in his letter dated 7 January 2025 (*Appendix 8*) that reasons for staff departure mainly included change in work fields, pursuit of further study, leaving Hong Kong and family reasons. Staff turnover had certain impact on the operation of NAMI. To retain staff, NAMI had taken a number of measures, including provision of special bonus to R&D teams as recognition for their outstanding performance in international R&D competitions. NAMI also provided research excellence bonus out of the commercialization income to the R&D teams concerned. Furthermore, NAMI had a part-time PhD programme under which eligible staff with potential were fully subsidized to pursue part-time PhD study. Staff receiving subsidy under the said programme would be required to fulfil a two-year service commitment. NAMI also attracted talents through different recruitment channels, reviewed salary and benefits as appropriate, as well as strengthened communication and manpower deployment. In recruiting researchers under the Research Talent Hub, factors such as the ranking of the institution where the applicant graduated from, the years of experience and skills required for the position, would be taken into consideration. NAMI could also engage the required researchers through ITF project funding.

50. With reference to paragraph 5.12 of the Audit Report, the Committee sought information on the salary adjustment mechanism for NAMI's Chief Executive Officer, in particular the performance-linked pay, and the percentage of such pay in the remuneration received by the Chief Executive Officer in the past. The Committee also asked whether the Administration and the Board of NAMI considered that the current remuneration system of NAMI provided sufficient incentives to enhance the performance of the management. **Secretary for Innovation, Technology and Industry, Commissioner for Innovation and Technology, Chairwoman, NAMI and Chief Operating Officer, NAMI** explained at the public hearings, and **Commissioner for Innovation and Technology** supplemented in his letter dated 13 December 2024 (*Appendix 6*) that:

- the remuneration of the Chief Executive Officer of NAMI consisted of two components: (a) a fixed basic salary and (b) a variable,

performance-linked pay. In terms of basic salary, according to the contract of the Chief Executive Officer, this part of the salary would remain unchanged throughout the contract period. Upon contract renewal or signing of a new contract, all contract terms would be reviewed. The basic salary would be set with reference to the salary adjustment level of civil servants and other employees of NAMI, as well as the remuneration packages of chief executive officers of other R&D Centres under ITC. For contract renewal, the past performance of the personnel concerned also formed part of the consideration. According to the Funding Agreement, the appointment of the Chief Executive Officer and the terms of service required approval from the Board and the Commissioner for Innovation and Technology; and

- for performance-linked pay, the mechanism for the annual performance appraisal of the Chief Executive Officer and the release of performance-linked pay was established after the Board's approval. The mechanism stipulated that when determining the level of performance-linked pay, the performance of the personnel concerned as well as any other factors deemed appropriate by the Board would be taken into consideration. When the personnel concerned completed a one-year contract, an assessment panel composed of the Chairperson of the Board, chairmen of the functional committees and ITC representative(s) would conduct a comprehensive assessment on the performance of the personnel concerned in four parameters, namely (a) leadership, (b) personal effectiveness, (c) management, and (d) professional knowledge and networking. Afterwards, the panel would report the assessment and recommend the level of performance-linked pay to the Board. The final release of the pay was subject to the endorsement of the Board and approval of the Commissioner for Innovation and Technology. The level of performance-linked pay to the Chief Executive Officer had remained at 25% of the basic salary for the past five years.

51. According to paragraphs 5.12 to 5.14 of the Audit Report, even though the Board had approved in 2024 the updated distribution of performance grades of staff, the actual distribution of performance grade B in the period from 2019-2020 to 2023-2024 was still higher than the overall distribution approved by the Board. According to Table 24 in paragraph 5.14 of the Audit Report, the actual distribution of performance grades A and B in 2023-2024 even exceeded 80%. In view of a number of inadequacies in the daily operation of NAMI identified by Audit in the audit review, the Committee was concerned whether the above analysis on performance grades

reflected that NAMI was too lenient in appraising the performance of its staff. **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that the overall distribution of staff performance grades recommended by the Board meant to serve as a reference for NAMI. Staff performance was assessed against a number of performance indicators with grading given based on actual performance. When the overall distribution had exceeded the recommended range, NAMI would report to the Board with explanations and seek the Board's endorsement. NAMI would continue to review and optimize its current performance appraisal mechanism.

52. According to paragraph 5.17 of the Audit Report, up to 30 June 2024, NAMI had not yet filled the Chief Science Officer post created in 2022-2023. The Committee asked NAMI to explain why the post had remained unfilled for more than two years and whether it had encountered recruitment difficulties or whether there was no longer an operational need for the post. **Chief Executive Officer, NAMI** advised at the public hearings, and **Commissioner for Innovation and Technology** added in his letter dated 7 January 2025 (*Appendix 8*) that NAMI created four new chief officer posts in 2022-2023, including the Chief Science Officer post which was responsible for driving the technical direction and development of NAMI in a longer term. Having considered cost-effectiveness and the development direction of NAMI, relevant tasks were shared among the other Chief Officers in the past two years. NAMI's Finance and Administration Committee discussed the matter again at its meeting on 7 November 2024. In view of the upcoming merger of NAMI with ASTRI, the recruitment for the Chief Science Officer would be stalled.

53. According to paragraphs 5.25 and 5.26 of the Audit Report, in the period from 2019-2020 to 2023-2024, there were shortfalls in the achievement of three (75%) out of four performance targets relating to publicity. The Committee sought explanation from NAMI on the reasons for the shortfalls and the measures in place to achieve the performance targets. **Commissioner for Innovation and Technology** advised at the public hearings and in his letter dated 7 January 2025 (*Appendix 8*) that in the period from 2019-2020 to 2023-2024, promotional activities such as exhibitions/seminars that NAMI had planned to organize or participate were postponed or cancelled due to the impact of the epidemic. The number of website visitors had also been affected and the relevant performance targets were not met as a result. NAMI would set clear, aggressive yet practicable targets based on the overall technology R&D and business development strategies, and with regard to resources and time constraints. NAMI would strive to carry out promotional activities as planned and adjust strategies and allocate resources as necessary. It would also organize industry exhibitions, seminars and other promotional activities through enhanced cooperation with relevant industry

associations, chambers of commerce or other enterprises and organizations. The content, structure, search engine, etc. of the NAMI website would be optimized to increase overall traffic and engagement rate.

54. Referring to paragraph 5.32 of the Audit Report and the information provided by the Director of Audit in his letter dated 5 December 2024 (*Appendix 9*), the Committee sought explanation on why, in respect of the ratio of operating expenditure to R&D project costs for the five R&D Centres in the period from 2019-2020 to 2023-2024, NAMI's ratio was on the high side (being the highest in three out of these five years). **Commissioner for Innovation and Technology** explained at the public hearings and in his letter dated 13 December 2024 (*Appendix 6*) that NAMI had set up a bio-healthcare laboratory in 2021-2022 and a battery laboratory in 2022-2023. The relevant rental, equipment and device costs had increased accordingly. The Government adopted a "zero-growth" principle over the R&D Centres' operating expenditure in the coming three financial years, i.e. the average annual operating expenditure in the coming three financial years was capped at the level of 2024-2025, with a view to controlling the operating expenditure of the R&D Centres as well as encouraging them to increase industry income and other income.

55. According to paragraph 5.34 of the Audit Report, NAMI's gross domestic product ("GDP") contributions towards Hong Kong had decreased by 29% from \$1,531 million in 2020-2021 to \$1,092 million in 2022-2023. Among the five R&D Centres, NAMI's GDP contributions decreased by the largest margin in the period. The Committee enquired whether ITC had looked into the reasons and formulate strategies to enhance NAMI's GDP contributions. **Commissioner for Innovation and Technology** indicated at the public hearings and in his letter dated 7 January 2025 (*Appendix 8*) that during the epidemic, some R&D Centres (included NAMI) had switched the focus to conducting more upstream R&D projects or providing pandemic-related technology support for government departments, thus resulting in a drop in the overall economic contributions generated by the R&D Centres. Although NAMI's GDP contributions had declined from 2020-2021 to 2022-2023, it had made a considerable amount of contributions (more than \$3.9 billion) over these three years. ITC would continue to review and assess regularly all R&D Centres' (including NAMI) GDP contributions and other performance. ITC would also work with NAMI's Board to urge NAMI to explore more opportunities of collaboration with the industry, and transferring technology for industry applications and commercialization, thereby driving economic growth and increase its GDP contributions.

F. Conclusions and recommendations

<p>Overall comments</p>

56. The Committee:

- stresses that:
 - (a) I&T is an important engine that activates and drives Hong Kong’s high-quality development. To align with the goal of supporting the development of Hong Kong into an international I&T centre under the National 14th Five-Year Plan, the Government should step up its efforts to develop I&T in the future, so as to provide sustainable impetus for economic development;
 - (b) at a time when Hong Kong is facing a huge fiscal deficit and has to rein in expenditure, it is vital that public resources are used properly to maximize their efficacy. Notwithstanding the Government’s announcement in November 2024 to merge ASTRI and NAMI, the Committee hopes that the current study of the observations and recommendations in the Audit Report will serve as reference for the new R&D institute to be formed from the merger, as well as other R&D Centres funded by ITF and even all subvented organizations, so that they can learn a lesson therefrom; and
 - (c) in addition to putting in place an effective regulatory mechanism to monitor the operation and performance of subvented organizations, the Government should from time to time review and enhance the corporate governance of such organizations to ensure that they have clear and unambiguous systems of accountability and guidelines on the control of administrative expenditure, so as to prevent any actual, potential or perceived abuse of power or conflict of interest. This can enhance the organizations’ good governance and credibility while meeting the public’s expectations for the proper use of public resources;

Project management

- notes that NAMI’s R&D projects are categorized into two types, namely “ITF-funded projects” and “contract research projects”. The former

include platform projects with industry contribution of at least 10% of the total project cost, collaborative projects with industry contribution of at least 30% of the total project cost, and seed projects and PSTS projects for which no industry contribution is required. “Contract research projects” are projects financially supported by the industry and do not involve funding support from ITF;

ITF-funded projects

- expresses serious concern that in relation to ITF-funded projects in the period from 2019-2020 to 2023-2024:
 - (a) in terms of the number of projects commenced, the performance targets were not met in four of the five years mentioned above, with the average shortfall for the four years being eight projects each year; and
 - (b) in terms of the number of projects completed, the performance targets were not met in each of the five years mentioned above, with the average shortfall being 17 projects each year;
- notes that:
 - (a) the number of projects commenced by NAMI fell short of the targets because local SMEs tended to adopt a wait-and-see attitude towards investing in I&T in recent years amid the uncertain economic environment, and hence were more willing to support platform projects that only required 10% sponsorship of the total R&D project cost;
 - (b) the number of projects completed by NAMI fell short of the targets mainly because of delays in project completion, which were attributed to technical difficulties encountered during the R&D process, late shipment of equipment/consumables amid the epidemic, difficulties in recruiting R&D staff, etc.; and
 - (c) NAMI has required its research staff to conduct preliminary research and characterization tests on relevant technologies before project commencement to identify potential technical difficulties in advance, thereby reducing the risk of project delay; in addition, NAMI has strengthened the monitoring function of the Project Administration Team, which has been put under the supervision of

the Chief Operating Officer, to enhance the management of projects at all stages from commencement to completion;

- expresses serious concern that:
 - (a) among the 46 projects completed in 2023-2024:
 - 1 (2%) project commenced six months later than the target date of commencement stipulated in the project agreement;
 - 34 (74%) projects were completed after the target dates of completion stipulated in the project agreements, with an average delay of 7.7 months; and
 - the final reports of 18 (39%) projects were submitted to ITC with an average delay of 13 days; and
 - (b) among the 47 projects with post-project evaluation reports due for submission in 2023-2024, 24 (51%) projects had their evaluation reports submitted to ITC, and for 2 (8%) of these 24 projects, the reports were submitted with delays of 4 and 47 days respectively. For the remaining 23 (49%) projects, the reports had not been submitted to ITC;
- notes that:
 - (a) for the 34 projects completed after the target dates of completion stipulated in the agreements as mentioned above, NAMI had made applications for extension to ITC, and the relevant projects were completed within the extended period;
 - (b) the main reason for the delayed submission of post-project evaluation reports was that the project coordinators needed time to collate relevant information in order to complete the reports, and in the case of collaborative projects, it also took time to seek comments from industry partners. Regarding the 23 projects the evaluation reports of which had not been submitted as mentioned above, the reports of 21 projects were subsequently submitted, while the reports of the remaining two projects were not required to be submitted as the projects were shelved;

- (c) NAMI has strengthened the accountability of the Project Administration Team. Apart from reminding individual project teams earlier to submit reports on time, it is also required to notify the management of anticipated cases of failure to submit reports on time for follow-up; and
 - (d) ITC has been regularly following up on projects in respect of which reports have not been submitted on time, and project coordinators are required to, before commencing new projects, submit overdue reports of all ITF-funded projects under their responsibilities, otherwise they are not allowed to commence new projects;
- expresses grave concern and dissatisfaction that in relation to the 73 platform projects and seed projects completed in the period from 2019-2020 to 2023-2024, up to 31 March 2024:
 - (a) 50 (68%) projects had not generated any licensing fee income since their completion;
 - (b) the remaining 23 (32%) projects had generated a licensing fee income of \$7.2 million. On average, the licensing fee income as a percentage of the project costs of the 23 projects was 7.4%; and
 - (c) there were no guidelines setting out the rationale for determining the licensing fees;
- notes that:
 - (a) of the 50 projects which had not generated any licensing fee income as mentioned above (comprising 30 seed projects and 20 platform projects), 16 (32%) were completed in 2023-2024 (i.e. representing an elapsed time of one year or less since completion); and 30 (60%) were seed projects of an exploratory nature that could pave the way for further R&D collaborations with the industry;
 - (b) as at November 2024, 28 of the 50 projects which had not generated any licensing fee income as mentioned above had given rise to 36 downstream projects; and
 - (c) NAMI has taken measures to increase the licensing fee income from projects, and has established a clear guideline and calculation mechanism whereby the corresponding licensing fees/royalties, trial duration and annual charges are defined;

Contract research projects

- expresses serious concern that in relation to contract research projects in the period from 2019-2020 to 2023-2024:
 - (a) in terms of the number of projects commenced, the performance targets were not met in three of the five years mentioned above, with the average shortfall for the three years being 2.3 projects each year;
 - (b) the target number of projects commenced decreased by 50% from 10 in 2022-2023 to 5 in 2023-2024, with no documentary evidence showing the rationale for adjusting the performance target significantly; and
 - (c) the target income from projects had been lowered by 32% from \$8.2 million in 2019-2020 to \$5.6 million in 2023-2024. The actual income outperformed the target income in four of the five years, with the over-achievements ranging from 4% to 88%;
- notes that:
 - (a) SMEs have been more conservative in investing in I&T amid the uncertain economic environment over the past few years. Consequently, projects that required full contribution from the industry were relatively more difficult to commence. However, in 2020-2021, in the light of the epidemic, some enterprises sought to apply nanotechnology and advanced materials to provide technical solutions that could improve public health safety and personal protection. Hence, seven contract research projects were added, resulting in an increase in the number of projects for that year;
 - (b) as SMEs needed more time to resume their business development after the epidemic, NAMI set a relatively conservative target for 2023-2024, but eventually the number of projects commenced exceeded the target; and
 - (c) when setting targets, NAMI will comprehensively consider the external economic environment, market demand, and NAMI's technological development, business development plans and human resources conditions. NAMI has set an income performance target of \$6 million for contract research projects in

2024-2025, representing an increase of 7% from the target of \$5.6 million for 2023-2024;

- strongly urges that NAMI should:
 - (a) having regard to its actual capabilities, consider setting upper and lower targets that are more aggressive yet practicable for all projects to be commenced and completed by it, as well as incomes from projects, so as to tie in with its future development direction; and
 - (b) initiate worthwhile projects and those worth pursuing with partners through communication and collaboration with the industry and relevant organizations (including non-local organizations), and closely monitor the project progress to ensure that the targets on numbers of projects commenced and completed, as well as incomes from projects, are met;

Cost-effectiveness

- notes that:
 - (a) the income of NAMI comprises government funding and other income. The latter mainly consists of industry sponsorships and commercialization income (e.g. income from contract research projects, licensing fees and royalties);
 - (b) in the period from 2019-2020 to 2023-2024, the amount of government funding ranged from \$166.4 million to \$247.4 million each year to support the operation of NAMI and the expenditure of ITF-funded projects, whereas the amount of other income ranged from \$42.8 million to \$60.4 million each year; and
 - (c) in the period from 2019-2020 to 2023-2024, NAMI's expenditure was the same as its income, ranging from \$226.8 million to \$290.2 million each year. According to NAMI's explanation, the income was the same as the expenditure because any unspent balance of project grants from ITF had to be returned to the Government. As far as ITF-funded projects are concerned, NAMI has returned a total of some \$21.9 million to the Government in the past five financial years, accounting for approximately 5.5% of the total funding amount of the relevant projects approved;

- expresses serious concern that:
 - (a) in the period from 2019-2020 to 2023-2024:
 - the administrative and operating expenses of NAMI increased by 35% from \$102.3 million in 2019-2020 to \$137.9 million in 2023-2024;
 - the operating expenditure of NAMI increased by 47% from \$78.7 million in 2019-2020 to \$115.9 million in 2023-2024; and the ratio of operating expenditure to R&D project costs increased from 66% in 2019-2020 to 74% in 2023-2024;
 - NAMI's other income (excluding government funding) decreased by 29% from \$60.4 million in 2019-2020 to \$42.8 million in 2023-2024;
 - NAMI's industry contribution³ decreased from 30.8% in 2019-2020 to 22.5% in 2023-2024. The performance targets on industry contribution were not met in four of the five years; and
 - the level of industry and other income of NAMI,⁴ which had been on a decreasing trend, decreased from 47% in 2019-2020 to 35% in 2022-2023, but increased to 46% in 2023-2024. While the level met ITC's targets for all of the five years, it fell short of NAMI's targets in two of the years (i.e. 2020-2021 and 2022-2023);⁵
 - (b) in 2022-2023 and 2023-2024, NAMI's actual level of industry and other income was the lowest among the five R&D Centres; and
 - (c) in the period from 2020-2021 to 2022-2023, NAMI's contributions to Hong Kong's GDP decreased by 29% from \$1,531 million in 2020-2021 to \$1,092 million in 2022-2023;

³ Industry contribution is calculated as industry contribution pledged divided by approved project expenditure.

⁴ The level of industry and other income is calculated as: (industry contribution pledged + other sources of financial contribution pledged + commercialization and other income received) ÷ project expenditure of projects approved by ITC × 100%. Since 2017-2018, ITC has set a target of 30%. In 2023-2024, the target was raised to 35%.

⁵ NAMI also sets its own targets for each year, which were higher than the targets set by ITC.

- notes that:
 - (a) the administrative and operating expenses of NAMI include some R&D-related expenditure, such as laboratory rental and equipment as well as technology and testing service fees. NAMI set up a bio-healthcare laboratory in 2021-2022 and a battery laboratory in 2022-2023 to carry out related R&D projects. The relevant rental, equipment and device costs have increased accordingly;
 - (b) in 2020-2021, the number of collaborative R&D projects commenced with industry contribution decreased due to the epidemic. In 2022-2023, despite the eased epidemic, the overall economy was still volatile and the industry tended to adopt a wait-and-see attitude towards investing in I&T. This had a direct impact on the number of projects commenced with industry contribution, hence affecting NAMI's level of industry and other income;
 - (c) to further encourage the R&D Centres to strengthen cooperation with the industry, ITC raised the target on level of industry and other income from 35% to 40% in 2024-2025, and will explore the possibility of raising the target to 50% in the long run;
 - (d) in the past, the R&D Centres were required to return incomes generated from ITF-funded projects to ITF. In order to encourage the R&D Centres to commercialize the R&D outcomes of such projects, ITC has, since July 2018, allowed the R&D Centres to retain part of their commercialization income for use in strategic activities (e.g. technology development and market trends analyses, R&D infrastructure building, and staff development); and
 - (e) during the epidemic, some R&D Centres (included NAMI) have switched the focus to conducting more upstream R&D projects or providing pandemic-related technology support for government departments, thus resulting in a drop in the overall economic contributions generated;
- urges that:
 - (a) NAMI should, after the epidemic, strengthen its work on industry sponsorships and commercialization to boost its other income;

- (b) NAMI should consider, subject to relevant accounting standards, recording the expenditure on setting up new laboratories as fixed assets, and amortizing or depreciating these assets progressively over the coming accounting periods, so as to reflect its financial position more accurately; and
- (c) the Administration should review whether the current practice of returning any unspent balance of ITF grants to the Government will indirectly encourage the R&D Centres to deliberately use up all the grants to avoid having any unspent balance, resulting in wastage;

Administrative expenditure and corporate governance

Business travels

- is surprised and expresses serious concern that:
 - (a) regarding the 20 business travels outside Hong Kong conducted by NAMI in the period from 2019-2020 to 2023-2024 which were examined by Audit:
 - there were modifications of travel arrangements for nine (45%) business travels, in which the same employee extended the stay for personal reasons. For three (33%) of these nine business travels, there were excess travelling costs. While the employee concerned did repay the excess travelling costs, NAMI had to pay such costs first for two of the travels; and
 - in respect of the nine business travels mentioned above, while the employee concerned had obtained separate approvals for the business travels and annual leave for the extended period of stay, approval had not been sought for the modification of business travel arrangements. The need for approval and the approving authorities for such modification of business travel arrangements were not specified in NAMI's guidelines; and
 - (b) regarding the subsistence allowance claims for 30 business travels conducted by NAMI in the period from 2019-2020 to 2023-2024 which were examined by Audit, there was scope for improving NAMI's guidelines on subsistence allowance claims involving the Chief Executive Officer. The approving authorities for

subsistence allowance claims involving the Chief Executive Officer were not specified in NAMI's guidelines. In reality, such claims were approved by the Chief Technology Officer. Furthermore, for subsistence allowance claims involving the Chief Executive Officer for extra meal costs or accommodation costs in addition to the entitled subsistence allowance, only exceptional approval from the Chief Executive Officer or his designate is required. In reality, approvals for such claims were given by the Chief Executive Officer himself;

Entertainment expenses

- expresses grave concern about the following found by Audit when examining 50 entertainment expense reimbursement claims approved in the period from 2019-2020 to 2023-2024:
 - (a) the approving authorities for entertainment expense reimbursement claims involving the Chief Executive Officer were not specified in NAMI's guidelines. In reality, such claims were approved by the Chief Operating Officer or the Chief Technology Officer;
 - (b) two (4%) claims involved meal costs exceeding the cost-per-head spending limits by \$39 and \$50 respectively. For the former claim, no approval was granted. For the latter claim, the justifications for granting approval were not documented;
 - (c) eight (16%) claims involved staff below the Section Director grade, with no prior approval obtained from Section Directors or above. Covering approvals were obtained 1 to 37 days after the entertainment expenses were incurred (averaging 18 days); and
 - (d) one (2%) claim involved an event in which the participating staff significantly outnumbered the guests entertained (eight staff members and two guests). The justifications for this arrangement were not provided in the relevant claim form;
- notes that:
 - (a) NAMI approves and monitors its administrative expenditure in accordance with the Corporate Governance Manual approved by the Board. The relevant guidelines were drawn up with reference to the practices of the host institution, HKUST, and have been

enhanced and updated where necessary. In respect of a number of administrative expenditure arrangements highlighted in the Audit Report, NAMI agrees that there were inadequacies in the prevailing procedures and arrangements which called for improvement;

- (b) NAMI has revised the guidelines by setting out the arrangements and procedures for vetting and approving modifications of business travel arrangements and claims for related expenses. NAMI will circulate the guidelines regularly to remind all staff to comply with them; and
- (c) the new guidelines clearly stipulate:
 - employees should avoid varying business trips for personal reasons. Employees with a genuine need to vary their duty passage must submit an application for this purpose together with the application for the business travel, and bear any additional costs involved. NAMI will consider in a prudent manner whether to accept employees' applications, in particular those involving staff of supervisory grade, and will keep the relevant mechanism under review;
 - all modifications of business travel arrangements and claims for expenses (including subsistence allowances and entertainment expenses) involving the Chief Executive Officer are subject to the approval of the Chairperson of the Board. NAMI will review how best to assist the Chairperson of the Board in making approval decisions, and will update the relevant mechanism in a timely manner;
 - prior approval must be obtained for all entertainment expenses. Entertainment expense claims exceeding the spending limits will be approved only with sufficient justifications, which will be properly documented. In exceptional circumstances, if no formal prior approval can be obtained in time, covering approval must be obtained as soon as possible. The justifications for all approvals given will be properly documented; and
 - the reasonable ratio of NAMI staff to guests entertained, and that the justifications for exceptional cases must be documented;

- strongly urges that:
 - (a) as the Chief Executive Officer of NAMI is the most senior member of the management of the institute and is directly accountable to the Board, any decisions involving the personal interests of the Chief Executive Officer should be referred to the Board or any other independent committee, which is of a higher level, even if this is not expressly stipulated in the guidelines;
 - (b) supervisory staff should set a good example by proactively refraining from self-approval in cases where any actual, potential or perceived conflict of interest concerning themselves is involved, and should avoid referring such cases to their subordinates for approval, so as to ensure fairness and impartiality;
 - (c) supervisory staff should continuously refine and review guidelines on administrative expenditure to avoid any behaviour giving rise to a conflict of interest; and
 - (d) apart from circulating the guidelines regularly, NAMI should also enhance its employees' understanding of the guidelines through briefings by senior staff to avoid non-compliance;

Laboratory safety

- expresses serious concern and finds it unacceptable that:
 - (a) in May 2024, Audit accompanied the Laboratory Safety Team in the conduct of the laboratory safety inspections on two laboratories, and observed the following inadequacies:
 - for the inspection conducted on one of the two laboratories, the Laboratory Safety Team had an inspection report pre-filled with results of the checking procedures, even before commencing the inspection; and
 - some checking procedures listed in the inspection reports were not covered during the inspections;
 - (b) in the period from 2019-2020 to 2023-2024, 120 laboratory safety inspections were conducted, and in 62 (52%) of the inspections, one or more non-compliances were found. For 15 (24%) inspections

with non-compliances found, there was no documentary evidence showing that remedial actions had been taken; and

- (c) in the period from August 2022 to March 2024, 40 laboratory safety inspection reports were compiled, and up to 30 June 2024, for three (8%) of the inspection reports, there was no documentary evidence showing that the Directors of Research and Development had reviewed the inspection reports;
- notes that:
 - (a) after investigation, NAMI found that the staff concerned failed to correctly use the inspection checklist and strictly follow the standard protocol for laboratory safety inspections. NAMI has issued a written warning to the staff concerned, and amended the inspection checklist and updated procedures to prevent pre-filling or late filling;
 - (b) NAMI has instructed its staff to clearly record the non-compliances found during the laboratory safety inspections, follow-ups on corresponding remedial actions and their completion dates, as well as items that can be improved, in the inspection reports for review and approval; and
 - (c) NAMI will regularly circulate the laboratory safety manual and post safety codes in laboratories to raise safety awareness among staff, and will remind them to comply with the safety codes through unscheduled inspections, safety training and safety team meetings; and
- strongly urges that apart from putting in place a stringent equipment inspection and management system, clear safety labelling and operational procedures, and contingency measures, NAMI should also raise safety awareness among laboratory users through inspections, publicity and education to create a safety-conscious atmosphere, thereby ensuring the safety of its staff and the environment.

Specific comments

57. The Committee:

Performance indicators

- expresses serious concern that:
 - (a) regarding two performance indicators (respectively on “the number of companies participating in ongoing projects” and “the number of organizations benefiting from PSTS”), there were differences between the numbers reported in the papers submitted to LegCo and those based on NAMI’s supporting records for the period from 2019-2020 to 2023-2024;
 - (b) in the period from 2020-2021 to 2023-2024, the number of researchers engaged under the Research Talent Hub decreased by 29% from 31 in 2020-2021 to 22 in 2023-2024;
 - (c) regarding the 294 patent applications filed by NAMI for 89 projects completed in the period from 2019-2020 to 2023-2024, the results for 87 (30%) patent applications were concluded as at 31 March 2024. Of the 87 patent applications, 33 (38%) were discontinued, involving 25 projects; and
 - (d) only 25 (28%) of the 89 projects had patents granted as at 31 March 2024, while the number of pending patents for the period from 2019-2020 to 2023-2024 was on an increasing trend, with a significant increase of 108% from 77 as at 31 March 2020 to 160 as at 31 March 2024;
- notes that:
 - (a) all R&D Centres adopt “R&D project” as the base unit when calculating the aforesaid two performance indicators, meaning that if a company participates in multiple projects or an organization benefits from multiple projects at the same time, the performance indicators will be calculated based on the number of projects it participates in or benefits from. ITC will include an explanatory

note on the calculation basis of the performance indicators in future reports submitted to LegCo;

- (b) the number of researchers engaged under the Research Talent Hub is based on the number of R&D projects that can be commenced. In view of the decrease in the number of projects commenced in recent years and the challenges encountered in recruitment, NAMI will proactively increase the number of researchers engaged under the Research Talent Hub to meet R&D requirements based on different projects and market demand;
 - (c) during the patent application process, NAMI will generally apply for a provisional patent on an R&D project in order to secure the “priority date” of the patent application, so that NAMI will have priority over competitors when applying for a standard patent subsequently, and this is crucial to obtaining the ownership of the final standard patent. For the sake of effective utilization of resources, NAMI will choose not to file a standard patent application after the expiration date of the provisional patent should it discover during the subsequent R&D process that the technology under the provisional patent does not satisfy a basket of factors concerning the commercialization income the patent may generate, the maintenance cost, etc.; and
 - (d) NAMI will take a series of measures to facilitate the approval of standard patent applications, including the use of designated prior art search software for comprehensive searches of existing technologies, expanding the database of patent law firms and communicating closely with lawyers to enhance the quality of patent write-ups, and formulating a timetable upon receipt of the examiners’ opinions and responding to each examination opinion in a timely manner to shorten the overall examination time;
- considers that, as patent applications are processed in accordance with the first-filed-first-served principle, it is indeed very important for such applications to be filed early and in a phased manner, subject to ongoing evaluation. In particular, in the highly competitive I&T field, early filing can ensure priority rights in respect of technological achievements. Still, appropriate measures should be taken during the patent application process to increase the success rate of standard patent applications and to reduce unnecessary delays and discontinuation;

Corporate governance

- expresses serious concern that:
 - (a) among the 23 non-official members who served the Board of NAMI in the period from 2019 to 2023, 3 (13%) members had served (or would have served) the Board continuously for more than 6 years, ranging from 8 to 14 years;
 - (b) there was no documentary evidence showing that the Sub-Committee of the Technology Committee of NAMI held any meetings in the period from 2019 to 2023. In fact, it discussed and endorsed agenda items only by email circulation, contrary to the requirement of meeting on a weekly basis as stipulated in NAMI's Corporate Governance Manual; and
 - (c) there is room for improvement in declarations of interest by members of the Board of NAMI:
 - of the 15 declarations of interest on first appointment (i.e. first-tier declarations of interest) made in the period from 2019 to 2023, 2 (13%) were made 1 and 15 days respectively after the dates of first appointment of the members concerned;
 - as far as the Board meetings held in the period from 2019 to 2023 were concerned, some Board members had not made declarations (i.e. second-tier declarations of interest) before the relevant items were discussed at the relevant meetings; and
 - at 8 (40%) of the 20 Board meetings held in the period from 2019 to 2023, there were a total of 10 declarations of interest made by members regarding the matters under discussion. No decision of the Chairperson or the Board on five (50%) of the declarations was documented in the relevant minutes;
- notes that:
 - (a) NAMI's Board is not a government advisory or statutory body and thus the "six-year rule" stipulated in the Guide to Corporate Governance for Subvented Organisations does not apply. However, ITC will make its best efforts to take into account the appointment principle under the aforesaid Guide when appointing NAMI's non-official Board members;

- (b) the Sub-Committee of the Technology Committee of NAMI used to discuss and endorse agenda items under its purview by email circulation to ensure efficiency. To adhere to the guidelines set out in the Corporate Governance Manual, NAMI has already scheduled weekly meetings for reviewing and endorsing relevant agenda items; and
 - (c) NAMI will continue to step up efforts in reminding Board or Committee members that if they need to declare interests due to their personal or work capacities, they must declare them at meetings. In addition, declarations of interest made at meetings and related issues will be documented in detail;
- stresses that:
- (a) The Board and its functional committees are at the core of NAMI's corporate governance and are responsible for formulating NAMI's strategies and overseeing the operation of the management, while the management is responsible for executing the Board's decisions and reports to the Board. NAMI should ensure that the relevant minutes (which cover declarations of interest by Board members and decisions on such declarations) are accurate, comprehensive and properly filed, so as to provide a basis for subsequent follow-up actions; and
 - (b) NAMI should comply with the requirement of holding meetings as stipulated in the Corporate Governance Manual, which should be reviewed and revised in a timely manner;

Other issues

- expresses concern that:
- (a) for 10 (50%) of the 20 cases of recruitment by NAMI in the period from 2019-2020 to 2023-2024 which were examined by Audit, there was no documentary evidence showing the Selection Panel's decision on whether the members who had declared having personal or working relationships with the candidates should remain in the Panel or withdraw from the Panel;

- (b) in the period from 2019-2020 to 2023-2024, on average 57 staff left NAMI each year, ranging from 47 to 70 staff. The average staff turnover rate was 22.8%. The staff turnover rates ranged from 18.4% to 27.0%; and
 - (c) throughout the period from 2019-2020 to 2023-2024, the actual distribution of staff performance grades deviated from the overall distribution approved by the Board;
- recommends that NAMI should:
 - (a) establish an effective staff performance grading system to assess staff performance, and take measures to ensure, as far as possible, that the actual distribution of performance grades is in line with the approved overall distribution; and
 - (b) formulate clear and quantifiable assessment indicators for granting performance-linked pay to staff in addition to basic wages, so as to enhance staff performance and promote corporate development; and
- notes that the Commissioner for Innovation and Technology and the Chief Executive Officer of NAMI agree with all the recommendations in the Audit Report.

Follow-up action

58. The Committee wishes to be kept informed of the progress made in implementing the various recommendations made by the Committee and Audit.