創新科技署署長
Commissioner for Innovation and Technology
香港特別行政區政府創新科技署
Innovation and Technology Commission
The Government of the Hong Kong Special Administrative Region

Your Ref: CB3/PAC/R83

13 December 2024

Ms Shirley CHAN
Clerk, Public Accounts Committee
Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong

Dear Ms Chan,

Public Accounts Committee
Chapter 1 of the Director of Audit's Report No. 83
Nano and Advanced Materials Institute

Thank you for your letter of 10 December 2024 to the Secretary for Innovation, Technology and Industry, requesting the Administration to coordinate the responses from the Government and the Nano and Advanced Materials Institute (NAMI) regarding information requested therein in related to the captioned Audit Report. This Commission is authorised to reply.

The reply from the Commission and NAMI in relation to the information requested in the incoming letter is at Annex. Among others, as the "Tripartite Agreement" (i.e. Appendix 1 to 3) is a contractual document and the "Corporate Governance Manual" (i.e. Appendix 6 to 7) contains guidelines on NAMI's internal operation (including recruitment and procurement matters), these five documents are restricted to Public Accounts Committee's internal consumption only.

As for question (b) (iv) under "Part 1: Introduction" on providing NAMI's income and expenditure on a cash-basis from 2019-2020 to 2023-2024, as due consultation with the relevant bureau/department is needed, the relevant data cannot be submitted in this reply. The Commission is working closely with NAMI to follow-up and provide the requested information as soon as practicable

Yours sincerely,

(Mrs Elina Chan)
for Commissioner for Innovation and Technology

33/F, Shui On Centre, 6-8 Harbour Road, Wan Chai, Hong Kong 香港灣仔港灣道 6-8 號瑞安中心 33 樓
Telephone 電話 : 3855 7688 Facsimile 傳 真 : 2730 4633

c.c. Secretary for Innovation, Technology and Industry
Secretary for Financial Services and the Treasury
Director of Audit
Chairperson of Nano and Advanced Materials Institute
Chief Executive Officer of Nano and Advanced Materials Institute

Annex

Part 1. Introduction

(a)	(i)	In 2006, the Government, the host institute i.e. the Hong Kong University of Science and Technology (HKUST) and the Nano and Advanced Materials Institute (NAMI) signed a tripartite funding agreement (the Tripartite Agreement) setting out the respective obligations and responsibilities. The respective obligations and responsibilities of the three parties under the Tripartite Agreement are summarised as below: ➢ NAMI is responsible for driving and coordinating applied research and development (R&D) in accordance with their technology roadmap and promoting technology transfer and commercialisation of R&D deliverables. NAMI should conduct its operation in accordance with the terms of the Tripartite Agreement, including submitting an annual plan as vetted and endorsed by the Board of Directors (Board) (comprising the annual estimates, major activities (including R&D projects and technology transfer plans) and performance targets etc.) to the Commissioner for Innovation and Technology (CIT) for approval. Within the financial year, NAMI is required to submit quarterly reports to CIT as vetted and endorsed by the Board. The quarterly reports set out NAMI's main activities and cash flow in each quarter. For the last quarterly report of each financial year (i.e. annual report), NAMI should report its operation for the whole financial year (including actual performance against the performance targets and actual financial situation). NAMI is also required to submit the audited accounts to CIT as vetted and endorsed by the Board. ➢ HKUST, as the host institute, wholly owns NAMI. Currently, HKUST mainly provides administrative support (such as tendering and procurement, employee and property insurance, information technology systems etc.) to NAMI.

		➢ The Government funds the operating expenses of NAMI through the Innovation and Technology Fund (ITF), and monitors the operation and performance of NAMI by vetting annual plans and estimates, quarterly reports/annual reports and audited accounts.
	(ii)&(iii)	Since the establishment of the public R&D centres (including NAMI) in 2006, the Government has continued to review the role, positioning, performance indicators of and resources allocated to each R&D centre, and make adjustments based on industry needs and technological development as appropriate. The Government has been regularly submitting progress reports on the R&D centres to the Panel on Commerce, Industry, Innovation and Technology of the Legislative Council (LegCo), and has respectively reported to the Finance Committee (FC) of the LegCo in 2009, 2012, 2015, 2020 and 2024 on the comprehensive review of the performance of the R&D centres and seek the FC's approval to increase their commitments to continue funding the R&D centres' operation. In the latest review, the Government reviewed the positioning and focus areas of the R&D centres, as well as the key technology areas for Hong Kong's future development. In order to continue to support the development of new energy and automobile-related technologies and other industries in Hong Kong, the Government announced in June 2024 that the Automotive Platforms and Application Systems R&D Centre would incorporate into the Hong Kong Productivity Council from April 2025, and announced in November 2024 that the Hong Kong Applied Science and Technology Research Institute (ASTRI) would merge with NAMI. Having thoroughly considered the Government's financial situation and the need to foster Hong Kong's innovation and technology (I&T) development, the Government proposed adopting a "zero-growth" principle over the R&D centres' operation expenditure in the coming three financial years, i.e. the average operating expenditure in the coming three financial years shall be capped at the level in 2024-25, with a view to controlling the operation expenditure of the R&D centres and encouraging them to increase the industry

		and other incomes, thereby ensuring that the limited resources from the Government are put to a good use. On the revisions of the Tripartite Agreement, after the FC approved the commitment for the establishment of NAMI in 2005 and supported its first five years of operation (i.e. 2006-07 to 2010-11), the three parties, namely the Government, HKUST and NAMI signed the first five-year "Tripartite Agreement" (**Appendix 1**) in 2006, and subsequently revised it on the following occasions, including: ➢ After the FC approved in 2009 and 2012 increase in commitment to extend NAMI's operation to 2013-14 and 2016-17 respectively, revisions on the Tripartite Agreement were made in 2011 and 2012 accordingly for the extensions. ➢ For the revision made in 2013, major changes included changing the specific agreement end date arrangement in the Tripartite Agreement to an open-ended term, as well as strengthening the control on the use of Government funding and NAMI's performance indicators etc. (**Appendix 2**); and ➢ After the FC agreed in 2018 that R&D centres could retain part of its commercialisation income for strategic activities, relevant revision was made to the Tripartite Agreement accordingly (**Appendix 3**).
	(iv)	NAMI indicated that the first "Articles of Association" (**Appendix 4**) was issued in 2006. It was only revised once in 2008 (**Appendix 5**). The revision was to change the quorum for passing written resolution from all directors to two-thirds of the directors. In addition, NAMI issued its first "Corporate Governance Manual" (**Appendix 6**) when it was established in 2006, which was subsequently revised in the following years. Main revisions include:

Note by Clerk, PAC:* *Appendices 1 to 6 not attached.

		➢ 2007: Added clauses to stipulate that NAMI would adhere to the procurement policy of its host institute i.e. HKUST ➢ 2009: Added clauses to provide for the establishment and terms of reference of the Audit Committee and elucidated the terms of reference, composition and meeting requirements of the Finance and Administration Committee (FAC) ➢ 2010: Added clauses to incorporate the code of conduct for Directors recommended by the Independent Commission Against Corruption, and the authority to approve receipt of gifts ➢ 2012: Revised the authority to approve manpower expenditures ➢ 2014: Revised the authority to approve expenditure from operating funds, project funds and administrative overheads ➢ 2019: Provided for changes to staffing positions, probity requirements for Directors and staff; revised authority to approve operating expenditures and procurement contracts; and ➢ 2022: Revised the authority to approve expenditure from operating funds, project funds and administrative overheads For the latest version of the "Corporate Governance Manual", please see **Appendix 7**. Every revision of NAMI's "Corporate Governance Manual" was discussed at the Board and the FAC, and approved by the Board.
	(v)	The information stated in the report submitted to FC in June 2005 (Annex 1 of FCR(2005-06)21) was the initial proposal on establishing NAMI from the host institute i.e. HKUST. At that time, the proposed Board only comprised of the President and three Vice-Presidents of HKUST.

Note by Clerk, PAC: Appendix 7 not attached.

		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 CIT, representative from HKUST, and representatives from academia, industry, chamber of commerce, and research institutions. In this form, the Board took up the role and function of the Steering Committee mentioned in the initial proposal.
	(vi)	NAMI indicated that its Project Administration Team (PAT), which used to be supervised by the Chief Commercial Officer, has changed to be supervised by the Chief Operating Officer (COO) from October 2024 onwards, making it independent from business development so that it could focus on monitoring R&D projects' progress and their management, thereby striving for timely project commencement and completion, thus enhancing the quality of project management. The latest NAMI's organisation chart is at **Appendix 8**.
	(vii)	ASTRI and NAMI respectively drive and co-ordinate applied R&D in the areas of information and communications technologies, and nanotechnology and new materials. Merging the two centres through organic integration will enhance their complementary advantages on applied R&D and create synergies, thereby boosting the capability for conducting high value-added applied R&D work, strengthening the support for industry development, and fostering new industrialisation. After merging the two centres, overall savings in operating costs are expected to be achieved through rationalisation and consolidation in the medium to long run. Regarding the staff establishment, appropriate arrangements would be manifested through redeployment and natural wastage. The Innovation and Technology Commission (ITC) will commission an independent consultant to make suggestions on the transitional arrangements and implementation plan on the merger. The Government expects to commence the transition process in 2025-26.
(b)	(i)	NAMI indicated that when formulating the annual estimates, it referred to the expenditures of different

		items in the past, and collect the financial needs from 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 to FAC 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 will consider whether the estimates is reasonable and meets the actual needs of NAMI. For individual item(s) with noticeable difference against those of the previous years, ITC will request NAMI to provide explanation to facilitate the vetting process. During the entire vetting process, relevant teams within ITC (including the finance team) will participate in the review and provide recommendations to CIT.
	(ii)	NAMI indicated that the administrative and operating expenses included R&D-related expenses, such as laboratory rental fee, laboratory consumables, technology and testing service fees etc. NAMI has set up a healthcare laboratory in 2021-22 to carry out bio-and-health-related R&D projects. A battery laboratory was set up in 2022-23 to carry out R&D projects related to advanced battery materials. The relevant rental, facilities and equipment costs have increased accordingly. Items with larger annual expenditures from 2019-20 to 2023-24 and the corresponding amounts and percentages are shown in **Appendix 9**.
	(iii)	NAMI indicated that in the past few years, due to the impact of the epidemic and the external environment, the uncertain economic outlook has made local small and medium-sized enterprises (SMEs) adopting a wait-and-see attitude on investment in I&T, resulting in decline of NAMI's income. In the post-epidemic period, SMEs still face many challenges and need time to resume business development and regain confidence in investing I&T. NAMI would strengthen commercialisation work in the future and focus on increasing income.

	(v)	As far as operating expense is concerned, as stated in the reply to (b)(i) above, when approving the annual estimates of NAMI, ITC will consider whether the estimates is reasonable and meets the actual needs of NAMI. The unspent fund will be reflected through an offsetting arrangement when ITC applies to the FC for increase in commitment to extend the operation period of NAMI. When it was recommended to the FC in 2020 to increase the commitment to extend the operation period of NAMI to 2024-25, ITC had deducted the estimated remaining commitment of NAMI as of 31 March 2021 by about 11.9 million (see LegCo FCai (FCR(2020-21)1)). For projects funded by ITF, NAMI is required to submit a project proposal to the Technology Committee (TC) under the Board for discussion and review. Only proposals endorsed by the TC will be submitted to ITC for approval. When reviewing proposals, ITC will consider whether the expenditure requirements are reasonable and meet the actual R&D need. ITC also requires NAMI to submit progress/final reports and audited accounts for approved projects to report on whether the project has achieved the project deliverables and the project spending. Upon completion of the project, NAMI needs to return all unspent fund to the Government. In fact, NAMI has refunded a total of approximately $21.9 million of project grant to the Government in the past five financial years, accounting for approximately 5.5% of the total funding amount of the concerned approved projects.
(c)	(i)&(ii)	The Board of NAMI provides steering on policy and strategic direction, and supervises the management of NAMI. The Board holds at least 4 meetings every year, additional meetings will be held when necessary. The major functions of the Board include: (a) Steer NAMI's R&D direction; (b) Monitor regularly the operational and financial sustainability of NAMI; (c) Examine and endorse annual plan, annual estimate and performance targets; and (d) Examine and endorse quarterly reports, annual report and annual audited account.

		NAMI's Board has three functional committees, namely TC, FAC and Audit Committee. The major functions and operation of the committees are as follows: (a) TC: Responsible for making recommendations to the Board on NAMI's technological development roadmap and research plans, examining NAMI's R&D project applications and supervising R&D progress and commercialisation work. The TC holds at least 5 meetings every year. (b) FAC: Responsible for overseeing the financial and administrative arrangements for NAMI's operations including assist the Board in formulating and examining financial, accounting, administrative and human resources policies and procedures, reviewing the projected and actual operating expenses, and providing advice on financial impacts of NAMI's business plans and activities etc. The FAC holds at least 4 meetings every year. (c) Audit Committee: Responsible for reviewing the internal control/risk management policies and procedures for project management, business, finance and operation, and to ensure NAMI complies with relevant laws/regulations, accounting practices and accounting standards etc. The committee hold at least one meeting every year. As HKUST is the host institute, its representative is a member of the Board. NAMI also makes reference to the guidelines provided by the host institute to develop more detailed internal guidelines for various administrative and financial matters. The Government monitors the operations and performance of NAMI on a macro level on the whole, and as stated in the Tripartite Agreement, requires NAMI to formulate its own Corporate Governance Manual to set out rules and guidelines for NAMI's daily operations.

		As a company, NAMI's Board supervises its operation, R&D work and development. The non-official directors of the Board come from different backgrounds with distinct professional knowledge. They play an important role to steer the R&D direction and supervise the operation and financial arrangements of NAMI.
	(iii)	Since Audit Commission (AC) confirmed in April 2024 that it would conduct an audit on NAMI until the Audit Report was released on 27 November, both NAMI and ITC have been actively working with the AC to facilitate its work. The sequence of key activities is at **Appendix 10**.
(d)		The Government funds public R&D centres. The R&D centres serve as a platform for coordinating applied R&D and promoting technology transfer to the industry. They help the industry to upgrade its technology, promote the adoption of local technology products and services by public sector organisations, nurture research talents and consolidate and strengthen the capability of local research teams. Since 2017-18, ITC has been requiring all R&D centres to submit progress report on the following six performance indicators (i.e. the indicators listed in Table 2 of the Audit Report) to monitor and evaluate whether the R&D centres have effectively fulfilled the above-mentioned missions and to measure the work progress and performance of the R&D centres: (1) Level of industry and other income; (2) Number of on-going projects involving industry participation; (3) Number of companies participating in on-going projects; (4) Number of organisations benefitting from Public Sector Trial Scheme (PSTS); (5) Number of researchers engaged under Research Talent Hub; and (6) Number of patents filed and granted. Since the establishment of the above performance indicators in 2017-18, ITC has established a common target indicator for all R&D centres on "the level of industry and other income". To encourage R&D

	centers to strengthen cooperation with the industry, ITC has raised the original 30% target to 35% and 40% in 2023-24 and 2024-25 respectively. As for other performance indicators, since each R&D centre is distinct (such as scale, technology areas, focal points etc.) and the industries they serve are also different, it is difficult to devise a set of uniform indicators. Currently, R&D centres formulate their targets based on their respective focus of development and industry trends, which are more flexible and realistic. Nevertheless, we will continue to explore different methods with R&D centres to optimise the effectiveness of monitoring R&D centres' performance.
(e)	For the 242 R&D projects completed during 2019-20 to 2023-24 mentioned in para. 1.15 of the Audit Report, the categorisation of project types is listed out in **Appendix 11**.
(f)	The ITF finances projects that can help enhancing 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 the 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 has 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 the ITF aim to support and encourage Hong Kong to strengthen research cooperation with universities, research institutes and technology enterprises in the Mainland.

Part 2. Project Management

(g), (h)&(i)	NAMI indicated that in terms of the number of projects commenced, as mentioned in the reply to (b)(iii) above, local SMEs have tended to wait and see in investing in I&T in recent years amid the uncertain economic environment, and were more willing to support platform projects that only require 10% sponsorship of the total R&D project cost. In fact, NAMI can achieve the targets for the number of platform projects commenced in recent years and the actual numbers have been steadily increasing, which reflected the actual situation. In terms of the number of completed projects, the main reason for not reaching the target was project delay. The main reasons for project delay were owing to unforeseen technical difficulties encountered during the R&D process, delayed shipments of equipment/consumable affected by the epidemic as well as encountered difficulty in recruiting R&D staff etc. In order to reduce project delays due to unforeseen technical difficulties, from January 2024 onwards, NAMI has required research staff to conduct preliminary research and characterisation tests on relevant technologies and methods before start of the project, in order to identify potential technical difficulties in advance, thereby reducing the risk of project delay and improving project efficiency. In addition to the reply to (a)(vi) above that PAT has been moved to under COO's supervision, NAMI has also strengthened the monitoring function of PAT to enhance the management of different stages of project from commencement to completion. In accordance with the funding requirement, ITC requires the funded research institutes (including NAMI) to complete a project according to the schedule specified in the project proposal. Nevertheless, ITC understands that research institutes may experience project delays due to different reasons. Hence, if research institutes need to extend the project period for successfully development of project deliverables, they can submit change request to ITC. ITC will carefully examine the justifications for the relevant change request. Even if project extension is approved, ITC would urge the relevant research institute to complete the relevant project as soon as possible. For the

		34 projects mentioned in para. 2.7(b) of the Audit Report, NAMI has submitted change requests to ITC for project extension and the relevant projects were completed within the extended period. As for the Board/committee's meeting minutes, NAMI indicated that it tended to record the meeting discussions succinctly in the past. NAMI would adopt the audit recommendation and record the discussion of meeting more appropriately in the future. NAMI's performance indicators on the number of projects commenced in 2024-25 (including Collaborative Project, Seed Project, PSTS project and Platform Project) and the performance indicators on the number of projects completed, as well as the number of Platform projects commenced in 2019-20 to 2023-24 are set out in **Appendix 12**.
(j)	(i)	NAMI explained that the main reason for the delayed submission of post-project evaluation report was that the relevant project coordinator needed time to consolidate relevant information in order to complete the report. For Collaborative projects, it also took time to seek comment from industry partners. Regarding the 23 Collaborative projects mentioned in para. 2.12(a) of the Audit Report, NAMI has submitted post-project evaluation reports to ITC for 21 projects, while the remaining 2 projects were not required to submit the post-project evaluation reports as they were withdrawn.
	(ii)	NAMI indicated that in the past, PAT was responsible for reminding individual project team to submit reports before the designated dates and assisting them to solve problems that might lead to late submission of reports. NAMI has strengthened the accountability of PAT. In addition to earlier reminder to individual project team to submit reports on time, it is also required to notify the management on the potential cases which may fail to submit reports on time for follow-up.
	(iii)	ITC has been regularly following up on projects that have not submitted reports on time, including issuing reminder to project coordinators through the ITC Funding Administrative System. In addition, ITC will also regularly review the submission status of project reports

		and remind them through telephone calls. Apart from the above-mentioned monitoring measures, ITC also requires project coordinator to submit overdue reports and/or audited accounts for all projects they are responsible for before allowing them to commence new projects.
(k)		NAMI indicated that it would conduct detailed market demand analysis to determine market trend and technology development direction and would also strengthen cooperation with the industry and organised seminars regularly with relevant departments/organisations. In addition, NAMI would establish a strict project monitoring mechanism to closely monitor projects' progress and promptly solve problems to ensure projects would be completed as planned. Research staff would also be required to conduct preliminary research and characterisation tests before project commencement to ensure the feasibility of the project and reduce risks. NAMI would establish a regular evaluation mechanism to conduct phased evaluation on projects in order to discover and solve issues in a timely manner, project plans would be adjusted based on the feedback. NAMI would actively seek opinions from industry partners, and work with them to follow up on the project evaluation reports that should be submitted by them. NAMI hoped to improve relevant performance as soon as possible through the series of new measures.
(l)	(i)	NAMI indicated that, as mentioned in the reply to (b)(iii) above, SMEs have been more cautious in investing in I&T under the uncertain economic environment in the past few years. Consequently, contract research projects that required full contribution from the industry partner was relatively more difficult to commence.
	(ii)	NAMI indicated that in 2020-21, due to the epidemic, relevant companies actively sought solutions to apply nanotechnology and advanced materials to provide technical solutions that could improve the safety of public hygiene and personal protection. Seven new contract research projects were signed, resulting in the increase of number of contract research project that year.
	(iii)	NAMI indicated that when setting the target for 2023-24, the actual situation of 2022-23 was took into consideration. In view of the economy still needing more time to recover

		from the epidemic and SMEs still facing many challenges and needed longer time to resume their business development, NAMI set a relatively conservative target at the beginning, but in the end the number of project commenced exceeded the target, helping companies to solve their pain points.
	(iv)	NAMI indicated that in 2024-25, the performance indicator for the number of contract research project commenced is 8. At present, NAMI has commenced 6 contract research projects, and NAMI would strive to achieve the target in the next few months.
(m)		NAMI explained that when setting annual targets, it took into account the prevailing economic environment, market demand for different technologies, and the industry's desire to launch new projects. As the economic environment in the past few years still needed to be improved, NAMI therefore decided to lower the targets. Notwithstanding the challenges faced, NAMI still strived to communicate with the industry, explaining to them that innovation, technology and R&D could help to enhance their competitiveness. These efforts paid off and more projects were commenced than the target.
(n)		NAMI explained that when setting targets, it would comprehensively consider the external economic environment, market demand, NAMI's technological development, business development plans and human resources conditions. NAMI would set a target that was both aggressive and feasible in line with the capabilities and future development direction of NAMI. NAMI has set an income performance target of $6 million for contract research projects in 2024-25, an increase of 7% from the $5.6 million in 2023-24. NAMI will strive to achieve the performance target in the next few months.
(o)	(i)	NAMI indicated that the management has investigated the cause afterwards. The concerned staff failed to correctly use the inspection checklist and strictly follow the standard procedures for conducting laboratory safety inspections. The management agreed with AC's recommendations that it was necessary to improve the laboratory safety inspection arrangement and has amended the relevant report templates, and strengthened measures for laboratory

		safety inspections. Written warning has been issued to the concerned staff.
	(ii)	NAMI indicated that the current laboratory safety team comprises of a senior laboratory safety manager who is the person in charge of the team, and two laboratory safety managers responsible for general safety management and instrument and chemical safety management respectively. The staff arrangement is adequate for the moment.
	(iii)	NAMI indicated that the inspection checklist and procedures have been amended, including adding a new "inspection time" field to the checklist to prevent prefill or late filling. And a safety manager was assigned in each laboratory to supervise daily safety management. NAMI has implemented a two-tier inspection process: (1) The different sector research teams will perform self-inspection on the safety of their respective laboratories on a weekly basis and report to the heads of division and laboratory safety team for review and endorsement; (2) Laboratory safety team will conduct inspection on a bi-monthly basis, the reports will be reviewed and endorsed by the heads of division, the Chief Technology Officer (CTO) and COO.
	(iv)	Sample inspection form provided by NAMI is set out in **Appendix 13**.
(p)	(i)	NAMI indicated that it has instructed the concerned staff to clearly record the violations identified during the laboratory safety inspections, follow up on the corresponding remedial actions and filled in the completion date in the inspection reports. NAMI has also set a time limit to relevant R&D directors to review the safety inspection reports.
	(ii)	NAMI indicated that the incidents mentioned in para. 2.26 and 2.28 of the Audit Report have been reported to the Board, and the concerned staff have also been instructed to record the remedial actions and items that can be improved for all violations identified during the laboratory safety inspections for review and approval by the relevant R&D Directors and CTO in a timely manner.
(q)		R&D centres, including NAMI, adopt R&D project as the base unit when calculating the performance indicators "number of companies participating in on-going projects"

	and "number of organisations benefitting from the PSTS", meaning that when a company participates in multiple projects or an organisation benefits from multiple projects at the same time, the performance indicators will be calculated based on the number of projects it participates/benefits from. Since ITC first reported the performance indicators of "number of companies participating in on-going projects" and "number of organisations benefitting from the PSTS" to LegCo in 2017-18, it required all R&D centres to adopt a consistent method to calculate relevant data. ITC agreed with AC's recommendation and would include an explanatory note on the calculation basis of the performance indicators in future reports submitted to LegCo to avoid any misunderstanding.
(r)	NAMI indicated that the number of researchers hired under the Research Talent Hub (RTH) was based on the number of R&D projects that could be commenced. In view of the decrease in the number of project commenced in the past few years and the challenges encountered in recruitment, NAMI would strive to, as far as possible, increase the number of researchers hired under RTH according to different projects and market needs to meet R&D requirements.

Part 3. Industry income and Commercialisation

(s)	NAMI indicated that the level of industry and other income fell from 47% in 2019-20 to 35% in 2022-23, mainly because the epidemic severely impacted the Hong Kong economy, affecting the progress and income of commercialisation of R&D deliverables, as reflected by the relevant performance indicator in 2022-23. After the epidemic, SMEs still faced many challenges and needed more time to resume their business development. As the epidemic is gradually under control, Hong Kong's economy began to recover in 2023-24. NAMI has also actively organised various seminars and participated in exhibitions to promote NAMI's technology and strengthen cooperation with Mainland industries. As market demand rebounded, NAMI's level of industry income and other income has also improved. For many years, NAMI has been able to achieve the performance indicator on level of industry and other income set by ITC.
(t)	The smooth accessibility and dissemination of information about R&D outcomes help enhance the market's understanding and apprehension of R&D, playing a positive role in promoting the transformation and commercialisation of R&D outcomes. The Innovation and Technology Commission established the Innovation Hub@HK website to showcase more than 560 R&D outcomes by 12 local universities and public research institutes as well as 28 InnoHK research laboratories. The website serves as a one-stop search platform, allowing the industry to customise search criteria according to its needs and contact individual research institute and university to explore commercialisation opportunities, thereby facilitating commercialisation of research outcomes and technology transfer to the industry. In order to promote the commercialisation of NAMI's project deliverables, NAMI indicated that it would improve patent management, conduct regular market demand analysis, strengthen cooperation with universities, other research institutes and enterprises, and enhance market promotion and brand building in local market, Mainland and countries along the "Belt and Road". Combined with continuous improvement, it helped to promote the organic combination of technological innovation and market demand, thereby enhancing the market competitiveness and influence of NAMI.

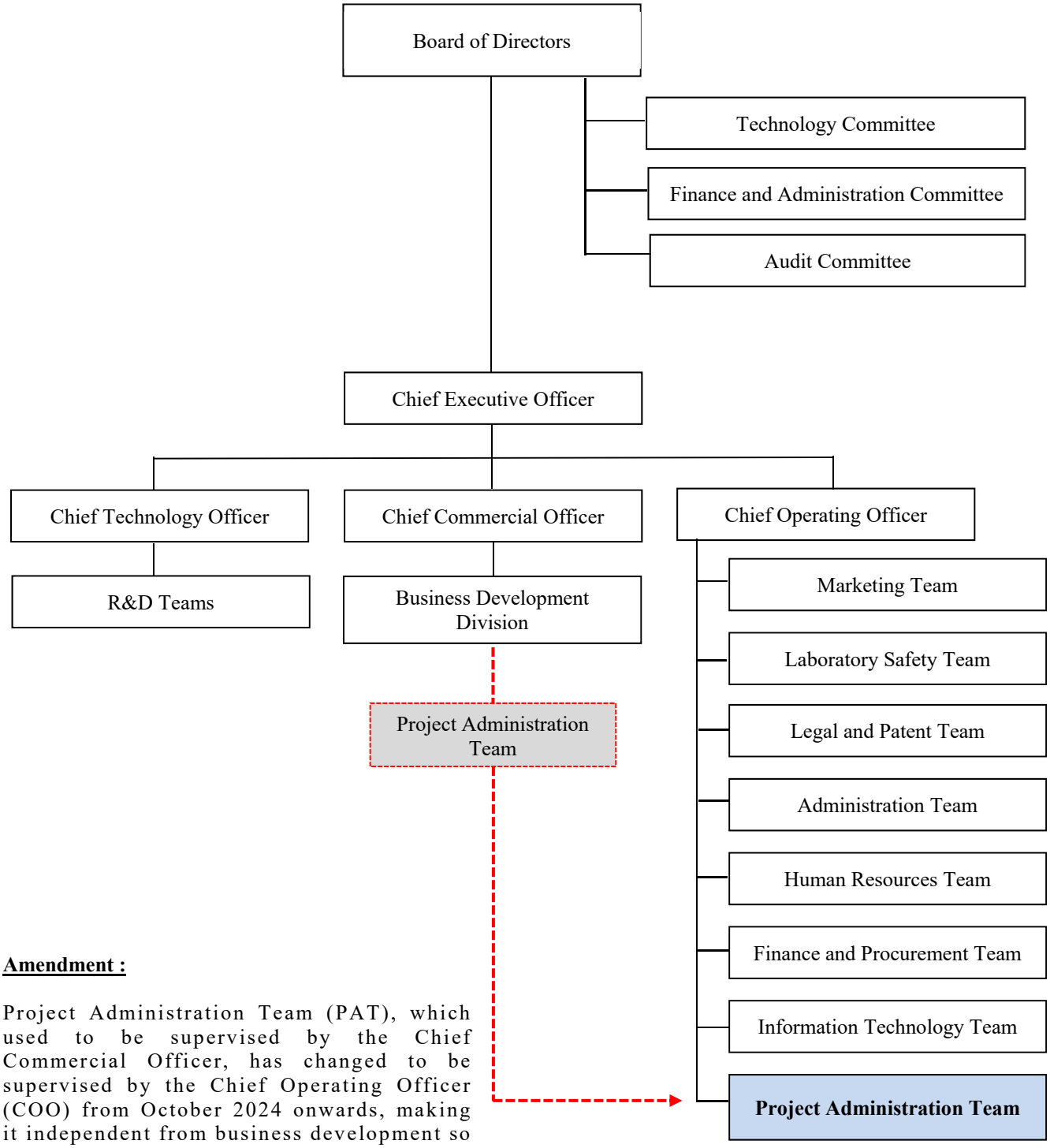
Part 5. Other Issues

(u)	The remuneration of the Chief Executive Officer (CEO) of NAMI consists of two components: (i) a fixed basic salary and (ii) a variable, performance-linked pay. In terms of basic salary, according to the CEO's contract, this part of the salary will remain unchanged throughout the contract period (usually two years). Upon contract renewal or signing of a new contract, all contract terms will be reviewed. The basic salary will make reference to the salary adjustment level of civil servant and other employees of NAMI, as well as CEO's remuneration of other R&D centers under ITC. For contract renewal, the past performance of the relevant personnel formed part of the consideration. According to the Tripartite Agreement, the appointment of CEO and the terms of service require approval from the Board and CIT. For performance-linked pay, the mechanism and specific arrangements for the annual performance appraisal of the CEO and the release of performance-linked pay were established after the Board's approval. The mechanism stipulates that when determining the level of performance-linked pay, the performance of the relevant personnel will be taken into consideration as well as any other factors deemed appropriate by the Board. In terms of specific arrangements, when the relevant personnel completed a one-year contract, an assessment panel composed of the chairman of the Board, chairmen of the functional committees and ITC representative will conduct a comprehensive assessment on the performance of the relevant personnel in four parameters, namely (i) leadership, (ii) personal effectiveness, (iii) management; and (iv) professional knowledge and networking. Afterwards, the panel will report the assessment and recommend the level of performance-linked pay to the Board. The final release of the performance pay is subject to the endorsement of the Board and approval of CIT. The arrangement of performance-linked pay to CEO has been implemented in accordance with the mechanism approved by the Board all along. The pay level for the past five years were 25% of the basic salary.
(v)	The Government has been devoting resources in taking forward policy measures to foster Hong Kong's I&T development with fiscal prudence, and controlling the operating expenditure of the R&D Centres, thereby ensuring that the limited resources from the Government are put to a good use. As mentioned in NAMI's reply to (b)(ii) above, NAMI has set up a healthcare laboratory in 2021-22 to carry out bio-and-health-related R&D projects. A battery laboratory was set up in 2022-23 to carry out R&D projects

	related to advanced battery materials. Relevant lab rental fee, equipment and device costs have also increased accordingly. Having thoroughly considered the Government's financial situation and the need to foster Hong Kong's I&T development, we propose adopting a "zero-growth" principle over the R&D Centres' operation expenditure in the coming three financial years i.e. the total operating expenditure in the coming three financial years shall not exceed the amount equivalent to three-fold of their operating expenditure as paid by the ITF or recurrent subvention in 2024-25, with a view to controlling the operating expenditure of the R&D Centres and encourage them to increase industry and other income.

Nano and Advanced Materials Institute

Organisation Chart



Amendment :

Project Administration Team (PAT), which used to be supervised by the Chief Commercial Officer, has changed to be supervised by the Chief Operating Officer (COO) from October 2024 onwards, making it independent from business development so that it could focus on monitoring R&D projects' progress and their management, thereby striving for timely project commencement and completion, thus enhancing the quality of project management.

Appendix 9

NAMI's Larger Cost Items from 2019-20 to 2023-24 and the Corresponding Amounts and Percentages

Item	2019-20	2020-21	2021-22	2022-23	2023-24
	(in $ million)				
R&D-related expenses, laboratory consumables, technology and testing service fees	28.1 (27%)	30.1 (29%)	36.1 (31%)	38.2 (29%)	38.8 (28%)
Laboratory and office equipment and related depreciation	30.2 (30%)	29.8 (29%)	31.8 (27%)	32.8 (25%)	34.8 (25%)
Rent	14.7 (14%)	14.5 (14%)	18.5 (16%)	22.3 (17%)	22.7 (16%)
Management fee and utilities	9.6 (9%)	9.6 (9%)	10.5 (9%)	12.0 (9%)	12.6 (9%)

Appendix 10

Sequence of Key Activities on NAMI Audit

Date	Follow up action
11 April 2024	Audit Commission sent kick-off memo to ITC on the commencement of the audit work on NAMI
29 April – 7 October 2024	Audit Commission reviewing files at NAMI
9 May 2024	Audit Commission, NAMI and ITC held kick-off meeting on the Audit
5 – 11 June 2024	Audit Commission reviewing files at ITC
June – September 2024	NAMI and ITC provided written responses and relevant documents in response to questions on different aspects from Audit Commission. Discussion were also made by means of phone calls and emails
20 August 2024	NAMI and ITC met with Audit Commission to discuss the initial observations from Audit Commission
2 September 2024	Audit Commission sent the advance draft of the audit report to NAMI and ITC
9 September 2024	Audit Commission sent the revised advance draft of the audit report to NAMI and ITC
30 September 2024	NAMI and ITC provided initial responses to Audit Commission on the revised advance draft of the audit report and the three parties had a final exit meeting
5 October 2024	NAMI briefed the Chairlady of the Board and the chairpersons of the three functional committees in detail on the advance draft of the audit report and consulted them for NAMI's responses
7 October 2024	Audit Commission sent the formal draft audit report to NAMI and ITC and requested formal responses
15 October 2024	NAMI reported to all members of the Board of Directors on the content of the formal draft audit report and sought the Board's endorsement on NAMI's responses

18 October 2024	NAMI and ITC submitted formal responses to Audit Commission
27 November 2024	Audit Commission publicly released the audit report

Appendix 11

Completed Projects from 2019-20 to 2023-24

Project type	2019-20	2020-21	2021-22	2022-23	2023-24	Total of past 5 financial years
Collaborative project	25	22	13	12	26	98
Seed project	10	6	15	5	7	43
Platform project	4	1	6	7	12	30
Public Sector Trial Scheme project	1	3	3	2	1	10
Contract research project	15	12	19	8	7	61
Total	**55**	**44**	**56**	**34**	**53**	**242**

Performance Indicators for the Number of Projects Commenced in 2024-25

	Target of commenced projects in 2024-25
Collaborative project	14
Seed project	15
Public Sector Trial Scheme project	5
Platform project	17
Total：	51

Performance Indicator for the Number of Projects Completed in 2024-25

	Target of completed projects in 2024-25
Total：	58

Performance Indicators and Actual Number of Platform Projects Commenced in 2019-20 to 2023-24

	2019-20	2020-21	2021-22	2022-23	2023-24
Target (a)	5	8	10	15	16
Actual (b)	6	12	12	15	16
Shortfall／(Surplus) (c) = (a) – (b)	(1) (20%)	(4) (50%)	(2) (20%)	0 (0%)	0 (0%)

Appendix 1. List used during the inspection on 30 May, 2024

General Safety Issues										
	Item	**Y**	**N**	**N / A**	**Details**	**Remedial Actions**	**Responsible Party**	**Target Completion Date**	**Person to Follow-up**	**Actual Completion Date**
1	Safe access provided and maintained for all workplaces	✓								
2	Equipment and materials are properly arranged	✓								
3	Circulating areas are free from obstructions	✓								
4	Work area is generally clean and in good structural condition	✓								
5	Sufficient lighting and ventilation are provided in all workplaces	✓								
6	Suitable PPE are provided and staff dress properly	✓								
Chemicals: Inventory, Storage, and Handling										
7	Chemicals are stored and segregated properly	✓								
8	Chemicals are labeled properly especially those on bench top	✓								
9	All chemicals are in the inventory list and are within expiry date	✓								
10	MSDS binder is properly maintained	✓								
Hazardous Waste Disposal										

	Item	Y	N	N / A	Details	Remedial Actions	Responsible Party	Target Completion Date	Person to Follow-up	Actual Completion Date
11	Chemical waste containers are properly labeled (chemical names) and capped	✓								
12	Secondary containment used for waste container	✓								
13	Chemical waste log sheet is filled out properly	✓								
14	Broken glasses and empty chemical glass bottles are disposed of properly	✓								
	Biological Safety									
15	Biohazardous agents are stored properly			✓						
16	Biohazard symbols are posted on all equipment, such as refrigerator, centrifuge, incubator etc.			✓						
17	Autoclave is inspected annually			✓						
18	Biological waste containers are stored and labeled properly			✓						
	Fume Hoods, Laminar Flow Cabinet and Biological Safety Cabinet									
19	Hoods are free of all unnecessary items	✓								
20	Annual certification label is posted	✓								
21	Ventilation is sufficient	✓								
22	Front sash is at appropriate level	✓								
23	Airflow indicator functions properly	✓								

Spill Control Kits										
24	Control kits are placed	✓								
25	Kits are properly labeled and accessible	✓								
Safety Showers/Eyewash Stations										
	Item	**Y**	**N**	**N / A**	**Details**	**Remedial Actions**	**Responsible Party**	**Target Completion Date**	**Person to Follow-up**	**Actual Completion Date**
26	Safety showers and eyewashes are inspected annually	✓								
27	Safety showers and eyewashes are easily accessible and free from obstruction	✓								
Emergency Procedures										
28	Fire Extinguishers are stored properly and free from obstruction	✓								
29	Fire sprinkler or other fire facilities are free from obstruction	✓								
30	Inspection tag is in valid period	✓								
31	Emergency notification procedure and updated contact are posted	✓								
32	Emergency procedures and updated fire escape route are posted	✓								
33	Emergency ventilation switches are free from obstruction and function properly	✓								
34	Exit sign is readily visible/illuminated	✓								
Personal Protective Equipment										

35	Appropriate safety clothing is being used	✓								
36	Eye protection is being used	✓								
37	Personal Protective Equipment stock is adequate	✓								
38	Full set HF protective equipment stock is available			✓						
39	Respirator is used and stored correctly in a clean and sanitary area			✓						
Laser System										
40	Laser system is being used			✓						
41	Warning sign is posted			✓						
42	Class 1, 2, 3a, 3b, 4 (circle one)			✓						
43	Identification is present on the system			✓						
44	Suitable laser goggle is adequate			✓						
First Aid Kit										
	Item	**Y**	**N**	**N / A**	**Details**	**Remedial Actions**	**Responsible Party**	**Target Completion Date**	**Person to Follow-up**	**Actual Completion Date**
45	First Aid Kit is present and properly stocked	✓								
46	Kit is labeled and accessible	✓								
47	Anitdotes available (if HF is used)			✓						
48	Fire blanket is available			✓						
Electrical Safety										
49	Power outlet is properly used	✓								
50	Electrical cords are in good condition	✓								
51	High voltage equipment is being used	✓								

52	Insulation gloves, shoes, and insulation mat are available for high voltage usage	✓								
53	Electric hazard label is posted	✓								
54	Equipment metal chasis are properly grounded	✓								
55	Equipment is placed away from water source	✓								
56	No Extension cord is used as permanent wiring	✓								
Equipment Operation										
57	Operational Procedures for major equipment have been drawn up and posted	✓								
58	Equipment log sheet are properly signed	✓								
Compressed Gas										
59	Gas cylinder are properly chained/ secured	✓								
60	Cylinder caps are in place when cylinders are not in use or being moved	✓								
61	Gas cylinder are stored away from excessive heat	✓								
62	Gas cylinder carts are available for transporting	✓								
63	The type and number of compressed gas cylinders are within the provision of the license	✓								
64	Hoses, Tubing and regulators are in good condition	✓								

Appendix

	*Name of Chemical	Approved quantity	Checked quantity
1	Sodium hydride --> "Sodium hydride, 60 % dispersion in mineral oil"	3 kg	
2	Potassium tert-butoxide --> Potassium tert-butoxide solution (in THF)	2 L	

3	Boron tribromide	1 L	
4	Trifluoroacetic acid	3 L	
5	Nitromethane	3 L	
6	1,2-Dibromoethane	1 L	
7	Hydrazine, anhydrous	5 kg	
8	Epibromohydrin	1 L	
9	METHYL ORTHOSILICATE	10 kg	
10	Methyl iodide	3 L	
11	n-Octylamine, 99+%	2 kg	
12	Lithium nitride	1 kg	
13	Divinyl sulfone	2 kg	
14	Lithium hexafluorophosphate	5 kg	
15	Terephthaloyl chloride, 99+%	2 kg	
16	Iodoacetic acid	2 kg	
17	Potassium tert-butoxide	2 kg	
18	2,2'-Azobis(2-methylpropionitrile)	5 kg	
19	2,2'-Azobis(2,4-dimethylvaleronitrile)	2 kg	
20	Methanesulphonyl chloride	1 L	
21	Tributylphosphine	1 L	
22	4,4'-Methylenebis(cyclohexylamine)	5 kg	
23	Trifluoroacetic anhydride	3 L	
24	Trimethylsilylcyanide	5L	
25	3-(Triethoxysilyl)propyl isocyanate	1 L	
26	Sulfur monochloride	1 L (1.69 kg)	
27	Trimethylaluminium	1 L	
28	n-Butyllithium solution (2.5 M in hexanes)	3 L	

29	Methyllithium solution (1.6 M in diethyl ether)	1 L	
30	Lithium aluminium hydride solution in THF	1 L	
31	1-Hydroxybenzotriazole monohydrate	1 kg	
32	Acryloyl chloride	3 L	
33	1,3-Cyclohexanebis(methylamine), mixture of isomers	2 kg	
34	Oxalyl chloride	3 L	
35	1,1,1,3,3,3-Hexafluoro-2-propanol	10 L	
36	BORON TRIFLUORIDE DIETHYL ETHERATE	2 kg	
37	Acetone	40 L	
38	Ethanol	40 L	
39	Isopropanol	40 L	
40	Methanol	40 L	