





POLICY ADDRESS Recommendations

POLICY RESEARCH CENTRE FOR INNOVATION AND TECHNOLOGY THE HONG KONG POLYTECHNIC UNIVERSITY

PREFACE

The year 2024 marks another significant chapter in Hong Kong's journey as we continue to build on the foundations laid in previous years. Following our tradition of submitting thoughtful and impactful recommendations consecutively over the past years, we are now presenting our Policy Address Recommendations for 2024. We are deeply grateful that the Hong Kong SAR government has taken our previous recommendations into consideration, and we remain hopeful that our insights for 2024 will also receive due attention.

In formulating these recommendations, we have consistently kept in mind Hong Kong's unique position of enjoying the support of the Nation while also being connected with the world. This dual advantage allows us to propose strategies that not only align with national priorities but also position Hong Kong as a global leader.

Our Recommendations are structured around four key themes: Carbon Neutral Cities, Hong Kong and the Greater Bay Area (GBA) Innovation and Technology (I&T), the Belt and Road Initiative (BRI), and Life and Health Technology. Each theme is carefully chosen to address both current challenges and future opportunities, ensuring that Hong Kong continues to thrive in an ever-evolving global landscape.

We believe that these recommendations will contribute to Hong Kong's sustainable development and long-term prosperity. By focusing on these critical areas, we aim to support the government's efforts in fostering innovation, enhancing connectivity, and improving the quality of life for all residents.

RECOMMENDATIONS

1. Carbon Neutral Cities

1.1 Implementation of Comprehensive Carbon Auditing to Track Greenhouse Gas Emissions

Data from the Census and Statistics Department indicates that in 2020, Hong Kong's total carbon emissions were 36.6 million tonnes of CO2 equivalent, with the largest contributors being the electricity generation sector (66%), transport (18%), and waste (8%), while 90% of the electricity was consumed in buildings driving the economy in Hong Kong. Thus, the government should implement comprehensive carbon auditing measures to accurately track and manage greenhouse gas (GHG) emissions across all sectors of the economy. This includes developing robust methodologies for measuring Scope 1, 2 and 3 emissions for all major emitting sectors, including energy, transportation, buildings, industry, waste, and agriculture. In alignment with global sustainability trends, Hong Kong is set to adopt ISSB-aligned sustainability reporting standards for listed companies starting from 2025. We recommend that similar emissions reporting requirements for companies and organisations above a certain size threshold should also be established, ensuring comprehensive coverage of Hong Kong's carbon footprint. In March, the government announced its commitment to developing a roadmap for the adoption of the ISSB standards for businesses in Hong Kong. We recommend that this roadmap provides a transparent and well-defined pathway specifically tailored for SMEs to prepare and develop capabilities for the practical implementation of these standards. Reflecting on the EU's CSRD, which includes disclosure requirements for SMEs (albeit with simplified and less stringent reporting standards compared to larger companies), Hong Kong could consider a similar approach for SMEs in sustainability reporting.

1.2 Developing a Centralised, Publicly Accessible Greenhouse Gas (GHG) Emissions Platform

It was reported that fewer than 25% of major companies in Hong Kong currently report their carbon emissions publicly, highlighting the need for improved transparency. Thus, **the government should develop a centralised, publicly accessible platform to report and track Hong Kong's GHG emissions data over time**. This requires companies and organisations to submit annual emissions reports using standardised templates and protocols, such as the GHG Protocol or ISO 14064 standards. The government should also provide clear guidelines and training to ensure consistent and reliable data collection and

reporting across all entities, as well as provide incentives and support for companies and organisations to implement emissions-cutting measures and report their progress. To encourage SMEs to adopt green technologies, we propose establishing a government-backed guarantee programme. This initiative could help subsidise the costs for projects that do not meet impact assessments, thereby promoting risk-taking in green-tech adoption among SMEs. Additionally, enhancing existing funding schemes, such as expanding the scope of the Technology Voucher Programme (TVP) beyond waste and energy management technologies, will enable more SMEs to use innovative green technologies.

1.3 Encouraging Net-Zero Electricity Generation Policy Research

In the "Hong Kong Climate Action Plan 2050", achieving net-zero electricity generation is highlighted as an important strategy to reduce carbon emissions and achieve carbon neutrality. However, the current share of renewable power generation is less than 1%, which presents a significant gap in meeting the targets of 7.5% to 10% by 2035 and 15% by 2050. Net-zero electricity generation from renewable energy sources in Hong Kong still faces various challenges. For instance, the high cost of power generation could lead to a substantial increase in electricity prices, thus the government has temporarily postponed offshore wind power plant plans. Another approach, using hydrogen-blended natural gas for net-zero electricity generation, does not yet meet the requirements for large-scale power generation in terms of technology and raw material costs. Additionally, due to limitations in installation space and costs, there is still a considerable gap in achieving self-sufficiency and supply-demand balance when it comes to installing renewable energy systems in high-rise buildings and facilities. Therefore, we recommend conducting policy research and coordination at different levels to encourage net-zero electricity generation through various means. This should involve considering market trends in renewable energy and hydrogen, improving schemes of control agreements and government subsidy mechanisms, and promoting the development and integration of renewable power generation and hydrogen power generation. These efforts will not only contribute to achieving both interim and ultimate net-zero electricity generation goals, but also promote energy independence.

1.4 Supporting Innovation for Energy Generation and Carbon Emission Quotas

We encourage the government to support the development of new technologies, such as green hydrogen energy and waste-based biomass power generation and promote the construction of related infrastructure. Incentives and financial support can be considered to accelerate the construction of solar, wind and other renewable energy projects, such as tax incentives or subsidies for households and enterprises that install solar panels. Smart grids, IoT devices, and AI should be utilised for energy management and can optimise energy use in real-time, reducing waste and enhancing sustainability. Pilot applications of carbon capture and storage (CCS) technology to capture and store carbon dioxide from fossil fuel power generation should be implemented. The energy cooperation in the Greater Bay Area should be strengthened, including participating in and supporting clean energy projects in the region, sharing technologies and resources, and promoting sustainable energy development.

Besides the generation side, the fundamental amount of carbon emissions depends on the electricity consumption on the demand side. Therefore, in order to essentially reduce carbon emissions before achieving net-zero electricity generation, it is critical to decrease electricity consumption and improve energy efficiency. Achieving decarbonisation is not solely the responsibility of power generation companies but also the responsibility and obligation of every electricity consumer, including businesses, commercial shops, households, etc. Only when everyone actively participates in decarbonisation efforts can we truly achieve the carbon neutrality goal by 2050. However, there is currently a lack of fair allocation and regulatory policies and mechanisms for carbon emission quotas for diverse electricity consumers, as well as incentive mechanisms and measures for low-carbon electricity consumption. Therefore, we recommend conducting research on carbon emission quotas for different types of electricity consumers and implementing incentive policies for low-carbon electricity consumption. This will help ensure the normal operation and livelihood of electricity consumers while effectively achieving demand-side management, thus assisting in carbon reduction efforts and the achievement of carbon neutrality goals at their root.

1.5 Formulating Green Hydrogen Policy and a Roadmap

In June, the Hong Kong government announced the "The Strategy of Hydrogen Development in Hong Kong", proposing four major strategies: improving legislation, establishing standards, aligning with the

market, and advancing with prudence to tackle six major technological challenges, aiming to create an environment conducive to the local development of hydrogen energy. This is a positive start, but the specific development path for green hydrogen in Hong Kong is underexplained. **To maximise the** environmental potential of green hydrogen, it is indispensable to formulate relevant policies and development blueprints specifically for green hydrogen. The chances of mass-producing green hydrogen in Hong Kong in the future are low, so the focus of the policy should be on the transportation, storage and application of green hydrogen, considering cost control and infrastructure support to ensure that green hydrogen receives proper attention and investment. With effective policy support and technological innovation, green hydrogen can provide clean energy for power companies and help reduce carbon emissions in various sectors such as transportation and industry. **The government can promote the** development of green hydrogen energy by enterprises and research institutions through incentives such as tax incentives, research and development grants, and low-interest loans. Moreover, establishing corresponding standards and certification systems to ensure that hydrogen energy products on the market truly meet environmental standards is also an important responsibility of the government.

In 2020, the European Union launched a hydrogen strategy, clearly positioning green hydrogen as a key element in the future energy transition. The German government has committed to investing 9 billion euros by 2030 in green hydrogen production and application technologies. In Asia, Japan has shown a strong determination to develop hydrogen energy, and its "Hydrogen Society" plan aims to solve energy import dependence problems through hydrogen energy, having already been implemented in the transportation and industrial sectors. **These examples show that specific and proactive policy support is a key driving force for promoting hydrogen energy, especially the development of green hydrogen.**

1.6 Encouraging Sustainable Urban Mobility

The development of efficient public transportation systems and the encouragement of electric vehicle usage can significantly reduce the carbon footprint in urban areas. We conducted an online survey to obtain the general public's opinions on new energy vehicles. The questionnaire covered awareness and attitudes towards new energy vehicles, considerations of potential users, usage experiences of existing users, suggestions for the future development of new energy vehicles in Hong Kong, as well as the understanding of hydrogen fuel cell vehicles.

The questionnaire was distributed to participants at various forums held at The Hong Kong Polytechnic University, and the public could also fill out the questionnaire through social media links. The results showed that 92.9% of respondents believed that the greatest advantage of new energy vehicles is the reduction of pollution and environmental protection, while the biggest concern of respondents was the short driving range (78.6%). Charging facilities were the policy issue of greatest concern to respondents, with 92.9% of respondents selecting this option. For the key factors to consider when purchasing, 100% of respondents believed that the cruising range is a critical factor when purchasing a new energy vehicle, followed by charging speed (92.9%). As for hydrogen fuel cell vehicles, the public's understanding level remained neutral, with 64.3% of respondents indicating a general understanding. 57.1% of respondents believed that hydrogen fuel cell vehicles are suitable for the public transportation sector, and 35.7% believed that hydrogen fuel cell vehicles are suitable for the commercial sector.

It is evident that the **government should invest in the development, implementation, and promotion of green transportation solutions, including electric vehicles and hydrogen fuel cell vehicles, charging/fueling facilities, and smart public transportation systems**, which will significantly reduce carbon emissions from the transportation sector and support Hong Kong's goal of becoming a low-carbon city.

1.7 Integration of Advanced Technologies in the Circular Economy and Urban Planning

To bolster the circular economy, it is imperative to endorse initiatives dedicated to recycling, upcycling, and the sustainable management of resources. **This effort should extend to the provision of financial support for research into pioneering materials and methodologies that minimise waste and enhance the sustainability of supply chains.** Furthermore, the integration of cutting-edge technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and blockchain should be encouraged within the realms of urban planning and building management. The adoption of these technologies is crucial for optimising energy usage, improving air quality, and reducing GHG emissions. **We recommend the government to implement smarter infrastructure and more effective resource management strategies**. Additionally, the development and implementation of green roofs, energy-efficient buildings, and intelligent water management systems are vital. These measures not only significantly cut down on energy consumption but also promote biodiversity in urban settings, contributing to more resilient and sustainable urban environments.

1.8 Community Engagement and Education in Sustainable Practices

Effective community engagement through educational initiatives and participatory planning is essential for the successful implementation of carbon-neutral initiatives. We recommend the government to cultivate public awareness and foster involvement, which are pivotal in ensuring a sustained commitment to environmentally friendly practices. To support this objective, it is crucial to develop and promote educational programmes centred on sustainability and carbon neutrality. This includes the establishment of specialised courses and training programmes designed to equip future leaders and professionals with the necessary knowledge and skills to drive sustainable urban development. Additionally, comprehensive public engagement and awareness campaigns should be launched. These campaigns should aim to educate citizens on the importance of carbon neutrality and the benefits of smart city initiatives. By encouraging active community participation in sustainability efforts and promoting behavioural changes, these campaigns can help cultivate a greener, more sustainable urban environment.

2. Hong Kong and the Greater Bay Area (GBA) Innovation and Technology (I&T) Development

2.1 Building a Sustainable and Smart Northern Metropolis

The Northern Metropolis Action Agenda 2023 has set an ambitious target to develop over 500,000 new residential units, positioning the area as a major housing supply source for Hong Kong over the next two decades. Upon full development, the Northern Metropolis is expected to accommodate a population of 2.5 million, roughly one-third of Hong Kong's current population. The government is actively engaged in urban planning, land assembly, infrastructure, and housing development to drive this initiative forward. Concurrently, most transitional housing and Light Public Housing projects in the Northern Metropolis are slated for completion by 2024/2025, attracting a substantial number of grassroots families to the area.

Given the rapid population growth and the emergence of new communities, it is crucial for the government to lead the creation of sustainable communities that ensure the well-being of both current and future residents. The following recommendations are proposed:

- Early Integration of Transitional Housing Residents: Families moving into transitional and Light Public Housing projects should not be viewed as transient but as early settlers of the Northern Metropolis. Community services should aim to facilitate their smooth integration and early settlement in the area.
- 2) Community-Oriented Social Services: Traditional social service models focus on providing facilities for specific needs. However, with the anticipated rise of new communities, the government should shift to a community-oriented model. This approach would integrate various facilities under one roof, managed by a designated community service provider, to better respond to the diverse and evolving needs of residents.

In parallel, the Northern Metropolis holds significant potential for technological innovation and smart city development, particularly in collaboration with the Greater Bay Area. Shenzhen, a key hub for Low-Altitude Economy (LAE) technology, has already demonstrated its capabilities with the world's first cross-sea and cross-city electric flying taxi. Recognised as an Integrated Demonstration Zone for low-altitude economic activities, Shenzhen sets a precedent for innovation.

San Tin Technopole, located near Shenzhen, can serve as a test flight area due to fewer developmental constraints. By establishing San Tin Technopole as a central innovation hub, it can foster collaborations with the Shenzhen I&T Park and advance the construction of a GBA Smart City Cluster. This cluster would not only focus on LAE but also other cutting-edge fields, driving the Northern Metropolis towards a sustainable and technologically advanced future.

By integrating sustainable community development with smart city initiatives, the Northern Metropolis can become a quality and promising place for Hong Kong residents to live and work, ensuring a holistic approach to urban development.

2.2 Promoting Hong Kong's Low-Altitude Economy Development by Building Infrastructure and Introducing Legislation

During the Second Session of the 14th National People's Congress in 2024, Premier Li Qiang mentioned the "low-altitude economy (LAE)" in the Government Work Report for the first time. This new economic activity involving drones, flying taxis, and logistical transportation at a height of 1,000 meters above

ground is seen as a fresh catalyst for the country's economy. Currently, certain cities in the Greater Bay Area are also starting to make plans for utilising low altitude airspace and developing ground infrastructure. Nevertheless, in order to advance LAE, Hong Kong must continue refining its laws, regulations, and development strategies.

The establishment of an inter-departmental working unit is recommended for the efficient supervision of LAE development, coordination of social resources, enhancement of relevant regulations, and efficient management of the collaboration among different policy bureaux and departments (e.g., Civil Aviation Department, Transport Department, Innovation, Technology and Industry Bureau, etc.).

LAE is seen as having extensive market potential. Morgan Stanley, an investment bank, projected that the worldwide market for this industry could potentially grow to \$9 trillion (equivalent to around HK\$70 trillion) by the year 2050. As a major transportation hub in the world, Hong Kong, through cooperation between the government and enterprises, will jointly develop the LAE industry, creating new economic growth points for Hong Kong and facilitating the integration and development of related areas.

It is recommended that the government enhance its assistance to the relevant businesses and boost their involvement by implementing favourable policies. This can be achieved by working closely with businesses to co-develop and manage the LAE market. The application and business scenarios for LAE can include passenger commuting, tourism, aerial photography, cargo delivery, medical rescue, and usage in public and government services such as surveying and mapping, environmental monitoring, and traffic management.

At present, there is a significant focus on research in the LAE field. This includes advancements in hardware such as improved sensing and control strategies to enhance the safety of autonomous flight vehicles. Moreover, certain cities within the Greater Bay Area (GBA) are exploring the utilisation of low altitude airspace and operational methods to effectively manage high volumes of aircraft. However, Hong Kong is falling behind in these areas.

It is recommended creating a research and development (R&D) centre focusing on low-altitude transportation technology in Hong Kong, collaborating with top research universities to advance research in this area. Existing institutions, such as the Research Centre for Unmanned Autonomous Systems at The Hong Kong Polytechnic University, have the potential to effectively assist in the advancement of LAE in Hong Kong. To ensure continued progress and to harness the full potential of

LAE, we call on the government to enhance research grant funding to support advancements in this critical area.

In the era of LAE, numerous cities in Mainland China, especially GBA cities like Shenzhen, Guangzhou, and Zhuhai, are actively constructing ground infrastructure to accommodate the widespread adoption of electric vertical take-off and landing (eVTOL) aircraft for low-altitude transportation and logistics. Improving landing sites, managing airspace, and establishing airways are key factors that influence the connectivity and availability of low-altitude services. In addition, a well-developed infrastructure for LAE will also promote increased economic collaboration within the GBA in the coming years.

It is advised that the government promptly finalises the planning of the pilot low-altitude economy zone and the infrastructure construction within the zone to facilitate the expansion of cross-border lowaltitude transportation services.

2.3 Establishing a Unified Financial Standards System and Promoting the Development of the Global Legal Entity Identifier (LEI)

With the globalisation of financial markets and the rapid development of the digital economy, ensuring the transparency and security of financial transactions has become increasingly important. In particular, establishing a unified financial standards system for international trade and cross-border transactions can effectively verify the identities of legal entities involved, reducing the risks of financial crimes and money laundering. A unified financial standards system will promote data standardisation, enhance regulatory efficiency, help businesses reduce compliance costs, and provide financial institutions with more reliable risk management tools.

In recent years, Hong Kong's financial market has experienced rapid growth and profound changes. While strengthening its position as an international financial centre, the city also faces complex international dynamics and increasingly stringent regulatory requirements. The rise in cross-border financial transactions and international business underscores the importance of establishing a unified financial standards system. This will not only enhance the security and transparency of financial transactions but also ensure Hong Kong's competitiveness and stability in the global financial market.

We recommend that the government establishes a unified financial standards system, provides technical support and financial subsidies, enhances the security of cross-border transactions, and elevates Hong Kong's status in the international financial market. The Global Legal Entity Identifier (LEI), as a globally recognised legal entity identification code, can provide unified identity verification for financial markets, making it an effective tool for aligning with international financial standards and enhancing participation and influence in the global financial governance system. We suggest that the government initiates the application of LEI, actively collaborates with the Mainland and other countries on LEI usage, and assists small and medium-sized enterprises (SMEs) and startups in transitioning smoothly to the new financial standards system, thereby improving the overall level of application. Meanwhile, through industry associations and public platforms, the importance and application methods of the financial standards system should be promoted to businesses and the public, increasing their awareness and acceptance.

2.4 Enhancing STEM Talent Attraction and Retention in Hong Kong

It is recommended that the Hong Kong government develops a comprehensive strategy to attract talents and technology companies to Hong Kong. This strategy should include increasing the number of professorships and talent quotas in STEM (science, technology, engineering, and mathematics) fields to draw creative talents from the global science and technology sectors. Additionally, the government should provide more supportive mechanisms for international STEM students to find jobs and internships in Hong Kong. Policies should be considered to encourage industries to actively retain outstanding students in Hong Kong.

To further support this initiative, the government should review and expand the global STEM professorship scheme. The research talent hub scheme should also be revisited to expand its coverage, providing more quotas to recognised research units in universities and extending its benefits to Mainland and overseas graduates. Moreover, Mainland and overseas graduates who have completed sub-degree STEM programmes in Hong Kong should receive similar treatment as university degree graduates, enabling them to stay and work in Hong Kong after graduation. The STEM internship programme should also be revisited to expand its coverage to students studying at Mainland or overseas universities who are interested in attending internship programmes in Hong Kong.

2.5 Strengthening Innovation and Technology Collaboration in the Greater Bay Area

To strengthen support for major stakeholders, including universities and other public innovation and technology (I&T) organisations in their collaboration with Mainland and overseas counterparts, it is recommended that an incentive scheme be developed. This scheme should include key performance indicators (KPIs) to measure and reward successful collaborations. Dedicated and recurrent funding should also be provided to facilitate these partnerships.

Additionally, cooperation with policy research units is essential to closely monitor technological development needs both on the Mainland and overseas. These units should advise relevant government bureaux, such as the Education Bureau (EDB) and the Innovation, Technology and Industry Bureau (ITIB), as well as associated organisations like the Research Grants Council (RGC), on strategic areas for research funding deployment. The government should provide secretariat support to the I&T policy research units to ensure effective monitoring and advisory functions.

Hong Kong can lead efforts to build an integrated system for scientific research, providing institutional guarantees for the integration of scientific research in the Greater Bay Area (GBA). Under the constitutional framework of "one country, two systems," administrative barriers between economies in the GBA may hinder the free flow of science and education resources, limiting cooperation among innovative entities. Hong Kong and Macao have long faced insufficient investment in R&D, with regional GDP investment not yet reaching 3%. By referring to the European Research Council's experience, Hong Kong can establish a scientific research resource-sharing institution for the GBA based on the Research Grants Council. This would involve creating a linkage mechanism with relevant departments in Macao and Mainland China, ensuring the system operates effectively based on the scientific research review system implemented by the Research Grants Council. Such an integrated system can stimulate participation from scientific research results, and promote cooperation in basic research. It would also provide strategic guidance for sharing innovation risks, strengthening industrial collaboration, and expanding the regional economic scale.

For overseas companies registered and operating in Hong Kong, the government may consider supporting their development in the Greater Bay Area. This could include providing substantive assistance in administrative processes such as business registration, thus facilitating smoother operations between the two regions.

2.6 Maximising the Role of the Lok Ma Chau Loop Area and Enhancing the Construction of a Mutual Research Recognition System

The Lok Ma Chau Loop area is a vital part of the Guangdong-Hong Kong-Macao Greater Bay Area, located at the border between Shenzhen and Hong Kong. It serves as a crucial hub for technological innovation and cooperation between the two regions. As a strategically significant innovation zone, the Lok Ma Chau Loop area has gathered a vast array of technological resources and talent and enjoys special policy support.

In recent years, the area has made significant strides in promoting technological research and development, innovation and entrepreneurship, and industrial upgrading, attracting numerous internationally renowned enterprises and research institutions. However, the area still faces challenges in cross-border research cooperation, particularly in the unification of legal regulations and ethical standards. Different legal systems and ethics review standards lead to difficulties in the mutual recognition of research projects between Shenzhen and Hong Kong, thus affecting the efficiency of research cooperation and the transformation of scientific achievements.

To eliminate legal and ethics barriers in research cooperation, promote the sharing and integration of research resources, and drive the industrialisation of scientific achievements, we recommend that the government collaborates with the Shenzhen government to improve the legal and regulatory standards for mutual research recognition in the Lok Ma Chau Loop area. This includes formulating a legal framework for cross-border research cooperation, clarifying the ownership and protection mechanisms of intellectual property rights of research outcomes, and establishing a unified ethics review system, particularly for biomedical research and clinical trials. Ensuring that both sides adhere to consistent ethics standards will reduce duplicate reviews, enhance cooperation efficiency, and lower legal and ethics barriers in cross-border research cooperation. Using the Lok Ma Chau Loop area as a pilot zone for perfecting the research mutual recognition system will be conducive to broader and deeper cooperation in technological innovation in the Greater Bay Area in the future.

2.7 Establishment of the International Maglev Research Centre

As one of the leading cities in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), Hong Kong will play a crucial role in the construction of an interconnected, fast and efficient integrated rail transportation

system. The State Council has issued the "Outline for the Construction of Nation with Strong Transportation System", which proposes the rational planning and development of technical reserves for a high-speed maglev system with speeds up to 600 km/h. The Shenzhen Municipal Transportation Bureau has released the "Shenzhen Comprehensive Transportation 14th Five-Year Plan", which clearly states the plan to promote the Guangzhou-Shenzhen high-speed maglev project. This line will connect key nodes such as Guangzhou Airport, downtown Guangzhou, the Nansha Free Trade Zone, Shenzhen Airport, the Qianhai Free Trade Zone, Hong Kong Lantau Island, and Hong Kong Airport, enabling 30-minute direct connectivity between strategic core areas and facilitating the agglomeration of high-end resources along the development axis of the Greater Bay Area. With speeds approaching that of aircraft cruising, high-speed maglev can effectively fill the travel speed gap between air travel and high-speed rail. As an advanced international technology, maglev is also a key "high ground" in current global rail transportation technology. The development of maglev system with full-speed testing and verification capabilities, establish a complete technological system and standardisation system, and maintain China's leading position in rail transportation technology.

We recommend that the government actively integrates into the national science and technology development plan, develops maglev technology, and establishes an International Maglev Research Centre in the Hong Kong-Shenzhen Innovation and Technology Park. This initiative will inject new impetus into Hong Kong's technological innovation and economic transformation, enhancing Hong Kong's technological R&D capabilities and operational management experience in related fields. It will also help Hong Kong to make further progress on the international science and technology stage, opening up exciting opportunities for the future. Specific measures are suggested as follows:

- Government funding support and policy guidance: The government should provide funding support to finance the infrastructure construction, talent introduction, and research projects of the International Maglev Research Centre in the Hong Kong-Shenzhen Innovation and Technology Park and formulate relevant policies to guide and support the development of maglev technology in Hong Kong.
- 2) Promoting collaboration among government, industry, academia, and research: Under the government's support and guidance, encourage the International Maglev Research Centre to cooperate with universities, research institutions, and enterprises to jointly promote the research and application of maglev technology, and facilitate the transformation and industrialisation of

research achievements.

- 3) Talent attraction and development: Support the International Maglev Research Centre in attracting world-class maglev technology experts and researchers and provide support and preferential policies in talent cultivation and introduction.
- 4) International cooperation and exchange: Encourage the International Maglev Research Centre to actively engage in cooperation and exchange with international maglev research institutions, jointly promoting the innovation and development of global maglev technology.
- 5) **Technology transformation and industrial development**: Support the International Maglev Research Centre in transforming research achievements into practical productivity, promote the application of maglev technology in fields such as transportation and logistics, and foster the development and innovation of related industries.

3. Belt and Road Initiative (BRI)

3.1 Establishing a BRI I&T and Smart City Consortium

In line with our previous recommendation, we suggest that the government leverages its domestic efforts (i.e., developing an I&T ecosystem in the city) to further strengthen its regional position as an exemplar of smart city development. PReCIT has been regularly hosting dignitaries from Consulates in Hong Kong to participate in the Consul General Talk Series, an open forum where invited Consul Generals discuss national developments in carbon neutrality, I&T development, and education and career prospects. One key area of development that most dignitaries from Belt and Road (B&R) partners (e.g., from Vietnam or Bangladesh) discussed was their respective nation's determination to have smart cities. We believe that Hong Kong is rightly positioned to establish itself as an exemplar for B&R partners to follow, given the city's current pace of I&T development, international reputation, and integration with other GBA cities.

We recommend that the government considers allocating funds and/or creates platforms that are conducive to knowledge exchange, cooperative research, and public-private partnerships (PPPs) between B&R partners and experts from Hong Kong and the GBA. By taking this initiative, Hong Kong can pioneer regional cooperation on smart city development, enjoy mutual growth, and be a contributor toward B&R partners' successful development stories.

3.2 Establishing a BRI Government-Industry-Academia-Research Consortium

In order to advance the Nation's strategic vision, there is a strong need to foster collaborative government-industry-academia-research partnerships with B&R nations. In recent years, we have seen how collaborative partnerships between Hong Kong and B&R nations can materialise through institutional initiatives that establish or enhance existing Memorandums of Understanding (MoUs) on academic exchange, talent development, research collaboration, and knowledge transfer. While these milestones are a step in the right direction, it is notable that they are primarily partnerships between higher education institutions.

We believe that there are valuable opportunities to engage with a wider group of institutions and stakeholders. On 7 July 2023, PolyU hosted the Forum of the Belt and Road Alliance Founding Institutions and met with representatives from the University Alliance of the Silk Road, China-Pakistan Economic Corridor Consortium of Universities, University Consortium of the 21st Century Maritime Silk Road, Alliance of International Science Organisations in the Belt and Road Region, ASEAN-China Network for Cooperation and Exchanges among Engineering and Technology Universities, and the BRICS Universities League. Based on discussions during the Forum, we have come to understand that many of the participating institutions of these alliances desired closer government-industry-academia-research collaboration among partners in the Belt and Road Initiative (BRI). Given this, we recommend that the government assumes a leading role in establishing a BRI government-industry-academia-research consortium to facilitate a cooperative mechanism for cross-sectoral development, leveraging complementary strengths and integrated resources, and supporting the construction of a community with a shared future for mankind.

3.3 Expand the B&R Scholarship and Retain Talents

Hong Kong's strategic location as a gateway to China and its proximity to many BRI countries make it an ideal hub for students and talents engaging with BRI-related projects. To capitalise on this, Hong Kong has

increased the B&R Scholarship quota by 50% starting from the 2024/2025 academic year, and the Hong Kong PhD Fellowship Scheme has expanded from 300 to 400 places. But as the number of students increases, it is recommended expanding the places to 600. To strengthen these measures, continuous evaluation and adjustment of quotas based on demand and industry needs are essential, ensuring a steady influx of high-calibre students.

The expansion should align with the needs of growing or strategically important industries, ensuring that the talent can meet local workforce demands and contribute to Hong Kong's development. By offering a diverse academic environment, Hong Kong's institutions can enhance their global reputation and provide valuable academic and skill-building experiences. Strengthening these measures through industry partnerships and feedback will keep educational programmes relevant and impactful.

The government might also require students to commit to a certain number of years of service in Hong Kong after graduation, helping to retain talent. Additional incentives like career development programmes, mentorship, and pathways to permanent residency could further enhance retention. This approach ensures that the investment in education translates into long-term benefits for Hong Kong, fostering a skilled workforce and driving sustainable growth and innovation.

3.4 Supporting Hong Kong Institutions to Set Up Joint Student Training Centres Overseas

To continuously support Hong Kong to be an International Hub for post-secondary education, it is important to support Hong Kong institutions to continue to capitalise on their strengths in international co-operation and to encourage the establishment of joint student training centres with world-renowned institutions, so as to build up an international cooperation network. Students should be encouraged to go overseas for short-term exchange programmes so as to cultivate their international outlook. At the same time, we should attract more international students to study and participate in exchange programmes in Hong Kong and the Greater Bay Area.

3.5 Establishing the China Scholarship Council Scholarship Programme for Hong Kong so as to Promote the Integration and Development of Hong Kong and the Mainland in a Two-way Manner

We recommend the following measures to promote the integration and development of Hong Kong and the Mainland in a two-way manner: firstly, we encourage the Ministry of Education to add Hong Kong to the application scope of the Chinese Government Scholarship for international students; secondly, it is important to set up an office for financial aid and scholarship for Mainland students at the Hong Kong government level to facilitate the management of the corresponding funds and provide services for Mainland students at the same time; and thirdly, universities should collaborate with the government to establish a specialised project funding scheme for key technologies and encourage outstanding students from both regions to engage in learning, scientific research, and entrepreneurial activities.

3.6 Continuously Expanding the Openness in the Field of Higher Education and Deepening the Cooperation among Universities in Hong Kong and the Mainland

To deepen the cooperation among universities in Hong Kong and the Mainland, we encourage Hong Kong universities to carry out joint training programmes with Mainland universities, support teaching and research exchanges between teaching and research personnel of the two places, and jointly build research platforms to carry out cross-disciplinary and high-tech research and development; secondly, we should give full play to the advantages of Hong Kong's connection with the Nation, and through the industryacademia-research transformation platforms jointly built by Hong Kong universities and local governments in the Mainland, provide students studying in Hong Kong with vocational planning and career support, so as to make Hong Kong an important base for cultivating talents with a global perspective and a sense of national responsibility.

3.7 Expanding the Strive and Rise Programme from Hong Kong to the Belt and Road Countries

The intergenerational transmission of poverty is a development trap that disadvantages minority and poor communities across generations, particularly in low-income and developing countries. It hampers human capital accumulation and, in turn, national progress towards achieving greater development and sustainability goals.

Absent of interventions, this vicious cycle of poverty is difficult to mitigate. In 2022, the government envisioned and devised a bold strategy for poverty alleviation called 'The Strive and Rise Programme'. This multi-actor, poverty alleviation strategy brings together the public, private, and third sectors to support the personal development and social mobility of secondary school students from economically impoverished backgrounds. A recent evaluation of the Programme's first cohort, which involved secondary school students territory-wide, revealed that virtually all of the students improved in at least one of eight aspects of their financial literacy, character, and well-being. The improvements, which were corroborated by the students themselves, their caregivers, and their mentors, were more apparent among senior than junior student participants. In addition, with the start-up financial support provided to each student participant to advance their personal development plans, we can anticipate that they would have felt empowered and emboldened to achieve upward social mobility.

In light of the persistence of the poverty trap in the Belt and Road (B&R) countries, and vast interest among states in implementing empirically-supported interventions, there is great potential for Hong Kong to demonstrate leadership in spearheading regional initiatives for alleviating intergenerational poverty. We recommend that the government considers promoting the Programme's merits and outcomes to the B&R countries, with the view to guide partner countries in implementing the Programme in their localities. Alongside initiating dialogue with the B&R countries, the government can engage with Programme stakeholders to consolidate the knowledge, skills, and experiences gained. These moves, which stand to improve the city's standing and image as a regional leader, would facilitate the expansion of the Programme outside of the city.

4. Life and Health Technology

4.1 Strengthening Primary Healthcare by Increasing Provision of Nutritional Services

To address the challenges brought about by an ageing population and the increasing prevalence of chronic disease, the Hong Kong government released the "Primary Healthcare Blueprint" in 2022. The Blueprint introduced a reform of the healthcare system to shift the focus from treatment to disease prevention. Nutrition is regarded by the World Health Organization (WHO) as a foundation for health and well-being for all people and a critical component of primary healthcare, and should be included as part of mainstream integrated people-centred health services. Enhancing nutrition services not only helps address disease control issues but also serves as a strategy for communities and society to actively participate in the healthcare system. Nutritionists and dietitians play a pivotal role in delivering nutritional services through their expertise in improving food services. Their professional knowledge in nutrition. However, the widespread implementation and promotion of nutrition services at the societal level still requires collaboration among various stakeholders, including policymakers, healthcare providers, social service providers, the food and nutrition industry, scholars, and educators, to assess the social needs for nutrition services and identify current shortcomings and challenges.

It is recommended to provide government recognition of the status of registered nutritionists and dietitians to ensure the good quality of nutritional services being provided in the community; and to provide designated direct or indirect funding for delivering nutritional services in the community, including nursing homes, community centres and schools.

4.2 Establishing the "Greater Bay Area Future Food Research Institute" to Promote Sustainable Development of the Food Industry

The Greater Bay Area, with a total area of approximately 56,000 square kilometres, had a population exceeding 86 million and a GDP of over RMB 14 trillion in 2023. With a large population and unique food culture, the rapid economic development in the region in recent years has increased consumer interest in healthy eating and created a strong demand for healthy/functional foods. Currently, the healthy/functional food enterprises in the region lack critical technical support in areas such as raw

material innovation, new product development, quality control, upcycling of food/agricultural waste, and food safety testing and management, affecting their competitiveness in the international market. The "Northern Metropolis" development strategy includes key directions such as reviewing and studying the relocation of fresh food border control and inspection facilities at Man Kam To Control Point and the land connection between Sheung Shui Slaughterhouse and Heung Yuen Wai Control Point; as well as exploring the development of a modern food-related industry integrating production, testing, distribution, and logistics in the Heung Yuen Wai area.

It is proposed to establish the first "Greater Bay Area Future Food Research Institute" at the "San Tin / Lok Ma Chau Development Node" in the Northern Metropolis, building on The Hong Kong Polytechnic University's "Future Food Research Institute" and the "Shenzhen Key Laboratory of Food Biological Pollution and Control." This institute will focus on food biological safety prevention and emerging food risk detection, sustainable food development, and innovative technologies and product development for the next generation of functional foods.

4.3 Enhancing Basic Science and Clinical Research in Traditional Chinese Medicine (TCM), Integrating TCM into Mainstream Health Care

In 2022, the World Health Organization (WHO) established an expert panel to conduct 12 selected randomised controlled trials (RCTs) in China, evaluating the treatment of epidemic respiratory diseases with TCM in 2,066 patients. The report indicated that the studied TCMs are beneficial for clinically relevant outcomes, particularly in mid-to-moderate cases. It is therefore a suitable time for promoting the inclusion of TCM into mainstream health care so as to solve the regional burden of ageing populations and the cost associated with the management of both communicable and chronic diseases. In order to support the internationalisation of TCM and its incorporation into mainstream healthcare, more clinical evidence regarding the efficacy and safety of the use of TCM and preclinical studies that characterise their mechanisms of action will be needed.

It is suggested that the government increases funding opportunities and support for basic science and clinical research in TCM, budgeting for clinical studies as well as TCM-based intervention; supports activities promoting the internationalisation of TCM; develops the "HKSAR Regional Key Laboratory" for advancements in TCM analytical techniques in order to allow up-stream research for a comprehensive understanding of the complex chemical compositions and interactions of TCM herbs and formulas; initiates the appropriate level of integration between TCM and conventional (western) medicine within the current healthcare systems and incorporates the treatments into clinical protocol for primary health care; and develops guidelines and standards for TCM practice, education, and product quality control.

4.4 Expanding Channels for Medical Talent Training in Hong Kong, Promoting Higher-Level Communication and Mobility of Medical Talent within the Greater Bay Area

The Hong Kong government is actively advancing measures to establish and enhance the overall talent pool and level of healthcare professionals in the Greater Bay Area. Through talent exchange programmes with medical institutions in the Greater Bay Area, there are opportunities for mutual learning and improvement of clinical work levels among healthcare professionals in the region, which also helps alleviate the pressure of manpower shortages in Hong Kong's public hospitals. In 2024, Chief Executive Mr John Lee Ka-chiu witnessed the signing of a "Memorandum of Understanding Between the National Health Commission and The Hong Kong Jockey Club on a National Capacity Building Programme for Human Resources for Health" and the "Collaboration Agreement Between the National Health Commission and The Hong Kong Jockey Club on a Scholarship-cum-fellowship for Top Talent in the Mainland" as well as a "Memorandum of Understanding Between the Health Bureau of the Government of the HKSAR and The Hong Kong Jockey Club on a Local Programme for Infectious Disease Prevention and Preparedness", marking a critical development phase for the training of medical talent between Hong Kong and the Mainland.

It is recommended to leverage the advantages of local universities in research and education across various healthcare disciplines to accelerate the cultivation of high-quality talent in the healthcare field and expand Hong Kong's medical talent pool. Additionally, it is recommended to strengthen exchanges and cooperation of clinical medical talent and medical industry technology innovation talent with the Mainland (especially the Greater Bay Area) at multiple levels, including health departments, hospitals, and social organisations.

4.5 Empowering the "Greater Bay Area International Clinical Trials Institute" with New Technologies, Serving the Development of the Medical Industry

The "Greater Bay Area International Clinical Trials Institute," proposed in the 2023 Policy Address by the Hong Kong government, has achieved excellent development and results. By coordinating clinical trial resources in the Greater Bay Area, including researchers, supporting services, databases, biobanks, and laboratories, the Institute has significantly improved the speed and efficiency of clinical research, advancing Hong Kong's position as a leading clinical trial centre in Asia.

We suggest combining big data and artificial intelligence technologies in the medical field, and developing telemedicine platforms to provide remote diagnosis, treatment recommendations, and patient monitoring. Additionally, we suggest utilising smart wearable devices and remote sensors for continuous health status monitoring and timely interventions. We also recommend integrating and anonymising relevant data to establish a medical research database, open for further analysis by universities and research institutions.

4.6 Establishing a Scoliosis Screening Programme for Primary School Students

Currently, the scoliosis screening programme (spine assessment) conducted by the Student Health Service Centre of the Department of Health for primary school students in Hong Kong is limited to three grades: Primary 5, Secondary 1, and Secondary 3 (vision tests are conducted from Primary 1 to Primary 6). Given the current limited understanding of the epidemiology of idiopathic scoliosis in the scientific and medical community and the unpredictability of its onset, early detection during adolescence or even earlier is crucial for timely intervention or necessary surgical procedures if conditions worsen. According to a recent study by the Children's Spine Foundation, about 58.5% of six-year-old students showed suspected scoliosis symptoms in 2023. Adolescent idiopathic scoliosis affects 2-3% of the adolescent population, making early detection at puberty or earlier stages essential.

It is recommended that the government establishes an earlier, more frequent, and regular scoliosis screening programme, helping to identify high-risk cases early and ensure timely assistance for more young patients in the community.

4.7 Improving Hong Kong's Drug Regulation System, Promoting Cooperation and Approval in Drug Regulation within the Greater Bay Area

In 2023, the Hong Kong government implemented a new "1+" drug approval mechanism, through which eligible new drug holders can apply for the registration of a drug for use in Hong Kong. This mechanism accelerates the clinical application process and positions Hong Kong as an international hub for medical innovation. Additionally, the Department of Health has established the Preparatory Office for the Hong Kong Centre for Medical Products Regulation, which will make recommendations and steps for formally establishing the Centre, and conduct research to enhance the drug and device regulatory and approval system. The Health Bureau has also maintained close cooperation with the National Medical Products Administration in drug safety and regulation, renewing the Co-operation Agreement on the Regulation of Drugs and the Co-operation Agreement on Construction which sets out the liaison and coordination arrangements between the National Medical Products Administration, the Department of Health, and the forthcoming management centre.

It is recommended to consolidate medical and academic resources, discussing with various stakeholders the establishment of a scientifically comprehensive full-process drug regulatory mechanism, and further improving the adequacy and efficiency of the Hong Kong government's drug approval and regulatory system. Simultaneously, it is recommended to establish a robust adverse drug reaction monitoring and reporting system to protect public health. Leveraging Hong Kong's medical advantages, accelerating the establishment of a "first-tier approval" mechanism for drug and device registration, and promoting the cooperation of trial sites with the Greater Bay Area and nationwide to build a regional clinical trial coordination platform are also suggested. These will enhance communication mechanisms, promote mutual recognition and circulation of drugs and medical devices across borders, and provide institutional guarantees for the integrated development of regional pharmaceuticals. These will also accelerate the clinical application of new drugs and devices, driving the development of the pharmaceutical research, development, and testing industry. It is recommended to provide policy support and services to local pharmaceutical enterprises, promote Hong Kong as a regional pharmaceutical research and production base, attract global pharmaceutical companies to get listed in Hong Kong, and enhance the long-term investment value of related sectors to strengthen Hong Kong's competitiveness in the pharmaceutical field.

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