

Motion Debate on
“Fully transforming into a green and low-carbon smart society and economy,
and proactively alleviating and coping with global climate change”
at Legislative Council Meeting of 12 December 2018

Progress Report

At the Legislative Council meeting of 12 December 2018, the motion on “Fully transforming into a green and low-carbon smart society and economy, and proactively alleviating and coping with global climate change” moved by Hon Martin LIAO as amended by Ir Dr Hon LO Wai-kwok, Hon KWOK Wai-keung, Hon Charles Peter MOK and Hon Kenneth LEUNG was passed. Full text of the motion is at [Annex](#). Having consulted relevant bureaux and departments, we would like to report to Members the progress of the work concerned.

Mitigating Climate Change

Electricity generation and renewable energy

2. Electricity generation accounts for around two-thirds of the carbon emissions in Hong Kong. Therefore revamping our fuel mix is our key vehicle to reduce carbon emissions. To help us achieve the 2030 carbon intensity reduction target, Hong Kong will use more natural gas in electricity generation to replace the coal plants as they gradually retire in the coming decade.
3. Promoting the development of renewable energy (RE) is an important and integral part of mitigating climate change. We will continue to introduce RE in a more systematic manner with the Government taking the lead, so as to reduce local carbon emissions.
4. For the private sector, we have introduced Feed-in Tariff (FiT) to provide incentives for individuals and non-Government bodies to invest in RE. The two power companies have introduced their FiT Schemes in October 2018 and January 2019 respectively. The response from the community has been positive with around 1 500 applications received by the two power companies in total by end December 2018.

5. Apart from providing financial incentives, we will also provide further support and facilitation to individuals who, and organisations which, wish to develop RE. We have suitably relaxed the restrictions such that subject to the fulfilment of specified conditions, solar photovoltaic (PV) systems including its supporting structures with height not higher than 2.5 metres can be installed on the rooftop of New Territories Exempted Houses without seeking the permission from the Lands Department or the Buildings Department. We will also consider making appropriate relaxations for other private buildings, in particular the low-rise ones.

6. Meanwhile, we will introduce legislative amendments to provide for exemption from the requirements to apply for business registration and pay profits tax in respect of participation in, and the payments received, under the FiT Scheme.

7. In addition, we will introduce a new programme to assist schools (except Government and profit-making schools) and non-Governmental welfare organisations in installing small-scale RE systems. Financial assistance and technical support (such as conducting site visits and providing technical assessments, as well as installation and testing of the systems, etc.) will be provided. We will announce the details of the new programme in 2019.

8. For the public sector, the Government will continue to develop RE proactively. We have earmarked \$1 billion to support the development of small-scale RE projects by bureaux and departments. As for large-scale RE projects, we are taking forward installation of large-scale solar PV systems at suitable locations in reservoirs and landfills.

Energy efficiency and conservation

9. As electricity use in buildings accounts for about 90% of the total electricity consumption in Hong Kong and the greenhouse gases generated account for more than 60% of our total emissions, promoting green building contributes to combating climate change. The Government will continue to lead by example and is committed to promoting green building as well as energy saving and emission reduction.

10. For new Government buildings, we have updated the internal circular on “Green Government Buildings” in 2015, requiring all new Government buildings to outperform the Building Energy Code (BEC) by 3% to 10% in terms of energy efficiency performance. We have also required new Government buildings with

construction floor area (CFA) of more than 5 000m² with central air-conditioning, or CFA of more than 10 000m², to achieve at least BEAM Plus “Gold” rating. For existing government buildings, we have set a target of 5% saving in the electricity consumption in the five financial years from 2015-16 to 2019-20. In this regard, we have completed energy audits on about 340 government buildings and earmarked around \$900 million to progressively implement energy-saving programmes. With support from various bureaux and departments, more than 400 energy saving projects have been approved so far. We have reduced the electricity consumption in Government buildings by 3% from 2015-16 to 2016-17 and are on track to achieve the 5% target.

11. As stated in the 2018 Policy Address, we are gearing up to conduct retro-commissioning progressively in suitable major Government buildings. The Electrical and Mechanical Services Department (EMSD) has launched an online resource centre and will continue to work with organisations such as the Hong Kong Green Building Council to promote this measure to the private sector. We will also encourage bureaux and departments to apply for BEAM Plus certification for existing buildings under their management.

12. To enhance energy saving in buildings, we will progressively tighten the following statutory regulatory requirements on energy efficiency:

- (a) The BEC will be reviewed every three years. The latest edition, which was gazetted in mid-November 2018 and will take effect in May 2019, is expected to achieve a further energy saving of 18% compared with the 2012 edition; and
- (b) Two reviews on the Overall Thermal Transfer Value (OTTV) standards for commercial buildings and hotels will be conducted before 2025; and two reviews on the OTTV standard for residents’ club houses and the Residential Thermal Transfer Value (RTTV) standard for residential buildings will be conducted before 2030.

In addition, the Government has implemented the Mandatory Energy Efficiency Labelling Scheme (MEELS) since 2008, requiring energy labels to be affixed on prescribed products for supply in Hong Kong to inform consumers of products’ energy efficiency performance and drive behaviour change. Two reviews on the MEELS will be conducted before 2025 to include more electrical appliances.

13. After implementing energy saving measures that have been committed or planned (including enhancing the statutory energy efficiency level of buildings, encouraging the use of energy-efficient electrical appliances, and implementing various energy saving measures in Government buildings and infrastructure projects), an estimated annual saving of 2.2 billion kWh would be achieved by 2020 (compared with 2013), which is equivalent to a reduction of 1.5 million tonnes of carbon dioxide emissions annually.

14. To further encourage private buildings to enhance energy efficiency and conservation, the capital expenditure incurred in purchasing RE installations, or building energy-efficient installations that outperform the statutory energy efficiency requirements and achieve the relevant ratings under BEAM Plus (such as using energy-efficient lifts and central air-conditioning systems) can enjoy further tax incentive, namely, full deduction in the first year of purchase instead of five years as previously stipulated. The relevant legislative amendment was passed by the Legislative Council in November last year and has taken effect in the 2018-19 year of assessment.

15. As regards the promotion of green and energy saving practices in private buildings, the Government will continue to exchange experiences and measures on energy saving with stakeholders in the built environment under the “4Ts” framework, namely target, timeline, transparency and together. Examples include the promotion of retro-commissioning and innovative energy efficiency technologies. EMSD has also set up the “E&M InnoPortal”, a platform for collaboration in Innovation and Technology (I&T), to match new technologies requested by Government departments with I&T solutions put forth by start-ups to facilitate pilot testing of new technologies developed through research and development. This will help foster the development of Hong Kong into a low-carbon smart city.

16. The power companies play an important role in promoting energy saving. Under the post-2018 Scheme of Control Agreements, the incentive schemes in relation to promotion of energy efficiency and conservation have been expanded, and new elements have been introduced. More funds will be available under the energy efficiency funds of the power companies to carry out retrofitting and retro-commissioning works in buildings, as well as implement building-based smart/IT technologies, etc., to enhance energy efficiency. More types of buildings will be covered.

17. We attach great importance to data analytics and applications to help reduce carbon emissions. The advanced metering infrastructure (AMI) project proposed by the two power companies is one of the measures to support the Government's smart city initiative. Both power companies plan to replace their conventional electromechanical meters with smart meters in seven years by 2025. We will discuss with the two power companies how they would capitalise on the AMI to facilitate energy saving among customers and provide more power consumption data.

Green transport

18. Transportation is one of the major emission sources in Hong Kong, accounting for about 16% of Hong Kong's total carbon emissions. To reduce carbon emissions from transport, the Government has adopted a multi-pronged approach which encompasses encouraging people to use public transport services and walk more; fostering a "bicycle-friendly environment"; supporting the trades to adopt clean energy commercial vehicles; putting in place the Pilot Green Transport Fund (PGTF) to encourage the trades to try out green innovative transport technologies and reviewing the scope of the PGTF to further facilitate the trades' wider use of green innovative transport technologies, and fully subsidising the franchised bus companies to test out the single-deck electric buses, etc.

19. In respect of railway development, the Government implements the seven new railway projects under the Railway Development Strategy 2014 in an orderly manner. Having regard to the potential housing supply that may be brought about by railway development, the Government is reviewing the proposals for the Tuen Mun South Extension and Northern Link (and Kwu Tung Station) and will strive to undertake public consultation on these proposals as soon as possible. At the same time, the Government will carry on with the detailed planning for the East Kowloon Line, Tung Chung West Extension (and Tung Chung East Station) and North Island Line, and will take forward detailed planning for Hung Shui Kiu Station and the South Island Line (West).

20. The Government endeavours to foster a "bicycle-friendly" environment in new towns and new development areas (NDAs) given that the cycle track networks in these areas are more comprehensive and hence are more suitable for using bicycles as a mode of transport. Under this policy, various bureaux and departments are launching complementary measures under their purview. For example, the

Development Bureau has been taking forward the comprehensive planning and implementation of projects on cycle track networks in NDAs. In NDAs, cycling is regarded by the Government as a green transport mode rather than just for recreation purpose.

21. The situation in urban areas is more complex, given the heavy traffic, narrow and crowded roads, as well as frequent on-street loading and unloading activities in urban areas. Due to road safety considerations, the Government does not encourage the public to use bicycles as a mode of transport in urban areas.

22. Apart from developing cycle track networks, the Government also endeavours to improve cycling facilities. The Transport Department (TD) has drawn up a list of about 900 potential improvement sites in the nine new towns. The improvement measures concerned include providing more public bicycle parking spaces and additional safety facilities to ensure the safety of cyclists and pedestrians. The first batch of improvement works involving about 100 sites, which had started in phases since 2016, were completed in June 2018, providing about 980 additional bicycle parking spaces. Regarding the second batch of improvement works, which involves about 510 sites and provision of about 2 200 additional bicycle parking spaces, the TD has completed the local consultations through the relevant District Offices, and conducted consultations with the relevant District Councils from May 2018 to December 2018. The related works will commence in 2019 for estimated completion in 2022. In addition, the TD will continue to monitor the utilisation and requirements of cycle tracks in various districts in the New Territories with a view to arranging further improvements to the cycle tracks and related facilities when necessary.

23. To reduce emissions of air pollutants from vehicles, the Government has been encouraging the public to use new energy vehicles in the hope that all newly registered private cars in Hong Kong will ultimately become new energy vehicles in the long run. As the first step, we may consider ceasing the first registration of diesel private cars subject to consultation with stakeholders. Similarly, we will also consider whether the first registration of diesel motor cycles should be ceased.

Waste reduction and management

24. Waste is one of the carbon emission sources in Hong Kong, accounting for around 6% of the total carbon emissions in Hong Kong in 2016. Besides reducing

carbon emissions from waste, waste reduction can also help alleviate carbon emissions from consumables in their places of production. Waste recycling and recovery are important aspects of waste management strategy. Recycling and recovering waste can reduce waste disposal in the landfills, and can also promote the development of circular economy.

25. Sitting at the centre of our overall waste reduction strategy, Municipal Solid Waste (MSW) charging will provide the necessary financial incentives to drive behavioural and cultural changes, and to encourage members of the public to proactively practise waste reduction at source and clean recycling. The Environmental Protection Department (EPD) introduced the Amendment Bill on MSW charging into the Legislative Council in November 2018. To prepare for and complement the implementation of MSW charging, and to encourage the public to reduce waste and recycle, the 2018 Policy Address announced that the Government would provide additional recurrent resources to strengthen our work on these fronts, with an additional provision of around \$300 to \$400 million for the financial year 2019-20 to start with, which would be further increased to no less than \$800 to \$1,000 million from the financial year when MSW charging is to be implemented. The amount of this annual provision would be commensurate with the estimated gross revenue to be generated from MSW charging in the initial period, so as to achieve the effect of “dedicated-fund-for-dedicated-use”. The waste reduction and recycling initiatives would cover various areas, including the setting up of new outreaching teams under the EPD to provide on-site assistance to the community, thereby putting waste reduction and recycling and MSW charging into practice; regularisation of funding support for Community Recycling Centres; provision of free territory-wide collection service in respect of waste plastics from non-commercial and non-industrial sources and food waste from all sources in the longer run subject to the experiences gained from the pilot schemes and the progress of developing food waste recovery centres in Hong Kong; and implementation of a pilot scheme to assess the effectiveness of applying reverse vending machines (RVM) in promoting the recycling of plastic beverage containers.

26. Meanwhile, according to the “Implementation Plan on Advancing Reform of the Administration System on Import of Solid Wastes through Prohibiting Import of Foreign Rubbish” (the Plan) promulgated on 18 July 2017, the Mainland authorities will, starting from early 2018, phase in more stringent requirements on the import of recyclables. The move will have a relatively greater impact on recyclers of waste paper and waste plastics in Hong Kong. Taking a multi-pronged approach,

the Government will keep helping the recycling industry adapt to the new Mainland policies, thereby turning the change brought by the new policy into opportunity.

27. The EPD and the Advisory Committee on Recycling Fund (RFAC) have been striving to enhance the operation of the Fund so that it will better address the needs of the industry and support its development. While ensuring proper use of the Recycling Fund and effective regulation of the applicants, RFAC has introduced various facilitation measures which include: simplify the application procedures; increase the earmarked funding to help members of the trade to procure equipment; expand the list of fundable items; increase the funding support for rental expenses arising from the project's recycling business and introduce theme-based scheme to tie in with the development of the industry. The EPD is carrying out a mid-term review of the Recycling Fund to examine its overall operation, and plans to roll out in 2019 various enhancement measures that meet the needs of the recycling industry and stakeholders.

28. In the long run, we have to enhance the operational ability and standard of the local recycling industry, by utilising locally recycled resources to develop the capability of the manufacturing industry which uses recycled materials, and promoting the development of circular economy, in order to reduce reliance on export as the solution for the recyclables produced locally.

29. Meanwhile, the Government is progressively implementing various producer responsibility schemes (PRS), including the plastic shopping bag charging scheme, and the PRSs on waste electrical and electronic equipment (WEEE), glass beverage containers and plastic beverage containers, to promote waste reduction at source and create a circular economy, thereby turning waste into resources. The PRS on WEEE (WPRS), fully implemented in 2018, is an important milestone in Hong Kong's waste reduction and recycling efforts. Under the WPRS, relevant WEEE should be directed to licensed recycling facilities for proper treatment and recycling, turning waste into resources. This provides a long term solution to the potential land contamination and environmental problems due to mishandling of such WEEE during transfer, storage and dismantling processes. The WEEE-PARK, a WEEE treatment and recycling facility developed by the Government to underpin the WPRS, began operation in October 2017. By the end of 2018, the WEEE-PARK had processed over 11 700 tonnes of WEEE, ensuring that locally generated WEEE is properly recycled, and need not be exported for disposal or sent to the landfills. The WPRS also provides a convenient recycling channel for the proper collection of used

equipment requiring disposal. Upon purchase of a new item of regulated electrical equipment (REE), members of the public are entitled to a statutory free removal service provided by the seller, to collect a used item of the same class. At the same time, the Government also introduced a new and free collection service outside the WPRS. Members of the public not purchasing a new REE item can make an appointment with the Government contractor for a free collection service. From August till the end of 2018, some 14 000 households (or an average of 2 800 households per month) have made use of this free service. Besides, the refurbishment workshop at WEEE-PARK has, in its first operating year, refurbished 1 000 pieces of serviceable electrical appliances for donation to families in need.

30. As regards the PRS on glass beverage containers, the Government has appointed glass management contractors (GMC) to provide regional collection and treatment services for waste glass containers across the territory. The two GMCs have taken over the previous voluntary recycling programmes and, in parallel, further expanded their recycling networks. They have also established and commissioned new treatment facilities and are providing free glass container collection and treatment services across the territory. With the provision of full services by the two GMCs, the monthly collection amount has been increasing continually over the past few months. The collection amount in December 2018 has exceeded 1 500 tonnes, more than doubled the monthly average collection amount under the voluntary glass container recycling programmes in 2017. As at December 2018, the two GMCs have collected a total amount of over 9 500 tonnes of waste glass containers for further processing. There has also been a significant growth in the number of collection points set up across the territory. The number of collection points serving catering premises has tripled to 710, while the overall number serving the residential sector has increased to over 1 500 locations, including all the 175 public housing estates, covering over 74% of the Hong Kong population.

31. As regards plastic product containers, the Government commissioned a feasibility study in October 2017. Taking into account the recommendations of the consultant, we have affirmed the feasibility of a PRS on plastic beverage containers, and decided to give priority to a PRS targeting these containers which account for 60% of the overall waste plastic container disposal in Hong Kong. We will consider introducing an arrangement similar to that of “deposit-refund system” implemented in other jurisdictions, providing a cash rebate as economic incentive to encourage members of the public to return the used plastic beverage containers for recycling. We will also consider using RVM to enhance the recovery efficiency of plastic

beverage containers, and plan to launch a pilot scheme later this year to assess its effectiveness in collecting waste plastic beverage containers. We will continue with the remaining assessment and evaluation, and proceed with the public consultation on the recommended proposal later.

32. Besides, given that the disposal of plastic shopping bags (PSBs) registered a rise in two consecutive years and that the charging scheme has been in operation for some time, the Government will review the effectiveness of the scheme in reducing the use and subsequent disposal of PSBs. One of the considerations is that the current minimum charge of 50 cents has not been adjusted since the commencement of the voluntary programmes which preceded the first phase of the scheme introduced in 2009. In addition, there are views on whether the present exemptions for food hygiene reasons (particularly involving chilled or frozen foods) should be tightened to further encourage the reduction of PSB use. We will review the operation and effectiveness of the scheme along these directions with a view to considering whether there is room for further improvement.

33. The Government has taken the lead to adopt green procurement to set a role model for the community. The aim is to boost the market demand of green products in order to encourage local industries to absorb part of the locally generated recyclables more effectively and promote development of green industries. To promote green procurement, the EPD has developed green specifications for the goods and services commonly used by Government bureaux and departments with reference to the standards and practices generally adopted in the market. Guidelines have also been promulgated to require government bureaux and departments to acquire green products and services in their daily operation according to the green specifications.

34. In 2015, the Government's green procurement list has been expanded from the original 103 to 150 items of products and services, each with updated green specifications. To facilitate small amount purchase (i.e. purchase at a maximum value of HK\$50,000 per order) of green products and services by government bureaux and departments, green purchase tips have been developed for easy adoption by frontline procuring staff in their daily operation and provision of public services. We are commissioning a consultancy study to further expand the Government's green procurement list to cover more products and services with a view to further promoting green procurement. Moreover, we will continue to step up publicity efforts to share the Government's green procurement practices and other useful information through

organising experience sharing sessions and EPD's website, as well as encouraging trade associations and organisations to formulate practicable guidelines, in order to drive various sectors of the community to adopt green procurement.

35. During the last summer holiday, we organised the "Plastic Free Beach, Tableware First" campaign at all public beaches in Hong Kong. 51 fast food kiosks and restaurants participated and used bamboo sticks, paper straws and paper bags in place of disposable plastic tableware to promote the "plastic-free" culture to the public. Riding on the positive response to the "Plastic Free Beach" campaign, the food and beverage industry and the Environmental Campaign Committee jointly held the "Plastic-Free Takeaway, Use Reusable Tableware" publicity and education campaign from 16 November 2018 to 15 January 2019 to promote "plastic-and-disposable-free" takeaways at three major fast food chains in Hong Kong (Cafe de Coral, Fairwood and Maxim's MX). During the campaign, customers could get a complimentary sticker for each takeaway order made at the participating fast food chains without obtaining any disposable tableware (including knife, fork, spoon, chopsticks). After collecting six stickers, they could redeem a set of reusable cutlery or a hot drink for free. The campaign aims to promote reducing the use of disposable tableware and encourage citizens to cultivate the good habit of bringing their own tableware, with a view to establishing a "plastic-and-disposable-free" culture in the community. During the two-month campaign, we have successfully avoided the use of about 1.2 million sets of disposable table ware.

36. The Government will also strengthen actions in tackling the challenges posed by waste plastics. This year, we will take forward various enhanced or new initiatives, including installing more water dispensers/filling stations in Government venues to inculcate a "bring your own bottle" culture; taking the lead in banning plastic straws and poly-foam food containers in premises mainly serving Government staff; requiring restaurant operators in suitable Government venues to avoid using disposable plastic tableware when awarding new or renewing existing contracts; and, as mentioned in paragraph [32] above, reviewing the operation of PSB charging with a view to enhancing its effectiveness in reducing the use and subsequent disposal of PSBs.

37. In view of the potential impact of disposable plastic tableware on Hong Kong and even the worldwide marine environment and ecology, we will study the feasibility, scope and mechanism of regulating or banning disposable plastic tableware. EPD will commence a consultancy study in the first quarter of 2019 to

consider how to regulate disposable plastic tableware in Hong Kong in the long run, including the scope and means of regulation or ban, the appropriate substitutes, the necessary legislative framework and regulatory mechanisms. The study is scheduled for completion in 2020.

Adaptation to climate change

38. As regards adaptation to climate change, a “Climate Change Working Group on Infrastructure” (CCWGI) was established in June 2016 to co-ordinate concerned efforts among works departments. The CCWGI has revisited the projected rise in mean sea level, increase in rainfall and wind speed in Hong Kong due to the effect of climate change. The Civil Engineering and Development Department and the Drainage Services Department respectively updated the design standard of coastal and stormwater drainage facilities in the “Port Works Design Manual” and “Stormwater Design Manual” in January and February 2018 respectively. In 2017, the CCWGI initiated a strategic study to assess more than 300 critical public infrastructures of the Hong Kong Government, and by now has set the scope for enhancement measures for some of those critical infrastructures. In 2018, the CCWGI commissioned another study on the design considerations for Hong Kong Government infrastructures under extreme temperatures, to provide guidelines for reviewing the relevant design standards.

39. The Government has been promoting the intellectualisation of infrastructure and green architecture, and the works departments have been actively implementing the intellectualisation of infrastructure. For instance, the Water Supplies Department (WSD) is progressively establishing a Water Intelligent Network (WIN), setting up District Metering Areas (DMAs) to collect flow, pressure and other associated network data from the water supply networks, in order to strategically implement cost-effective water mains repair and improvement works. The WSD is also planning to promote the wider use of Automatic Meter Reading (AMR) in suitable new government, public and private developments, with a view to increasing metering efficiency, enhancing consumers’ awareness in their water consumption and encouraging them to develop water-saving behavior.

40. As regards improving urban design, the Development Bureau and the Planning Department conducted a six-month public engagement for “Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030” study (Hong Kong 2030+) from October 2016 to April 2017. Hong Kong 2030+ proposes a smart,

green and resilient city strategy as well as other suggestions (such as the green and blue natural assets framework and reshaping the travel pattern) to prepare for the climate change. The analysis of public views received and the relevant technical assessments for the spatial development option(s) are in progress. We aim to finalise the updating of the territorial development strategy in 2019 after completing these assessments.

41. Urban greening is an important factor contributing to quality outdoor environment. Not only does it enhance our visual environment, it also assists in moderating temperature and improving air quality. The Government has been promoting urban greenery. In the past 10 years, government projects had planted approximately 77.6 million new plants, including 8 million trees. In addition, through promulgation of technical circulars and guidelines, we have mandated the integration of greening elements into public works projects at the planning and design stages.

42. Apart from new public works projects, the Government also incorporates planting at the roofs of existing and suitable buildings / structures. From 2012 to 2017, the Government has completed 192 and 93 roof greening and vertical greening projects respectively.

43. In view of challenges such as climate change, continuous increase of water demand arising from population and economic growth, and competition for water resource in the Pearl River Delta Region, we are planning to introduce new water sources, including the construction of the first stage of desalination plant in Tseung Kwan O; and the construction of a centralised grey water recycling system at the Anderson Road Quarry Development site to treat grey water collected from end users within the development for flushing use. Furthermore, we completed a public consultation on the supply of recycled water in Hong Kong in December 2018. After analysing the public comments, we will commence the related legislative amendment work with the target of providing recycled water for toilet flushing in Sheung Shui and Fanling from 2022.

44. The Government stated in the 2017 Policy Agenda its aim to reduce the per capita fresh water consumption by 10% by 2030. The WSD is promoting water conservation through collaborating with different stakeholders, including the launch of the “Cherish Water Campus” Integrated Education Programme, the construction of a water resources education centre in Tin Shui Wai to promote conservation

awareness, the installation of flow controllers in taps and showers of households in public rental housing estates, and the phased implementation of the Mandatory Water Efficiency Labelling Scheme.

45. In order to enhance the resilience to flooding in Hong Kong, the Government has introduced the "Sponge City" concept of "following the nature with resilience" to large-scale drainage improvement works projects in recent years. Modelling on the water recycling system of the nature, the concept aims to facilitate the infiltration, natural purification and reuse of rainwater, thereby reducing runoff to contain floods. For instance, the engineered wetland of the Yuen Long Bypass Floodway can effectively purify the water bodies in the wetland. Ho Chung River in Sai Kung and Lam Tsuen River in Tai Po are also designed to mimic the effect of natural river courses, with the adoption of natural river bed substrate to facilitate infiltration of river water. In addition, the Government is actively looking for opportunities, including the reuse of part of the collected rainwater for non-drinking purposes in appropriate NDAs. Taking the Anderson Road Quarry Development project as an example, the Government plans to construct an artificial lake that will feature the functions of flood prevention, leisure and rainwater harvesting. In most of the time, the lake serves as a leisure area for public enjoyment. At the time of heavy rainfall, the lake can serve as a temporarily storage for the excessive surface runoff, which can help reduce the flooding risk of downstream areas. Moreover, some of the lake water can be used for irrigation and other non-potable uses in local district after treatment, thus serving multiple purposes.

Resilience to climate change

46. Concerning the contingency plan in response to extreme weather conditions, the Government maintains a Contingency Plan for Natural Disasters (CPND), which sets out the Government's alert system and organisational framework for responding to natural disasters including tropical cyclones, as well as the functions and responsibilities of Government departments and other organisations. The weather warning system, emergency response and delineation of responsibilities as laid out in the CPND are generally effective. The response procedures are well defined, ensuring prompt activation of departmental actions. The weather forecast and warning systems are based on a scientific foundation and properly administered. Departments and auxiliary services responsible for emergency rescue and relief have been professional and effective in discharging their duties.

47. Super Typhoon Mangkhut battered Hong Kong in September 2018. Based on the significant threats that Mangkhut would pose to the community, the Government commenced early coordination amongst departments by activating the Emergency Monitoring and Support Centre (EMSC) in advance when Tropical Cyclone Warning Signal No. 3 was hoisted. Two inter-departmental meetings were held to review the preparedness of the Government departments, urging for preparedness on tools, equipment and manpower to increase the safety coefficient.

48. The damages of Mangkhut to Hong Kong were extensive and it caused pervasive collapses of trees and other debris, fortunately without fatalities. After the typhoon, the Chief Executive has tasked Secretary for Security to coordinate a review of the handling of super typhoons. As the damages inflicted on the territory were of substantial scale, the post-typhoon clearance work faced an immense challenge.

49. After the typhoon, departments (including Highways Department, Leisure and Cultural Services Department and Food and Environmental Hygiene Department, etc.) actively mobilised manpower to clear obstructed pavements, roads and roadsides; volunteers from various sectors across the community, including the disciplined services and Civil Aid Service, joined in clearing fallen trees and debris.

50. On 4 October 2018, the Government briefed the House Committee of the Legislative Council on Government's preparatory, response and recovery work in response to the Super Typhoon Mangkhut. The review of Government's mechanism of handling super typhoons is underway. On 19 October, the Secretary for Security chaired the first interdepartmental meeting. More than 20 bureaux and departments attended to review the overall contingency response to typhoons. The review covers three main areas:

- (a) Taking the experience of Mangkhut into account, review the CPND which sets out Government's preparatory, response and recovery works.
- (b) In connection with the recovery efforts, concerning the period immediately after a super typhoon in particular, examine the way to resume normal traffic effectively and the special work arrangement in times of extensive public transports suspension.
- (c) Enhance the efficiency of communication dissemination internally and externally, ensuring that the information on traffic and social conditions can

reach the public promptly, particularly with the use of technology and social media.

51. The Government attaches great importance to ensuring the safety of employees at work and on their journey to and from work, whether during and after natural disasters (such as typhoons or rainstorms). At the same time, we are also aware of the importance of resuming community services and economic activities as soon as practicable after natural disasters. Taking into account the general interests of employers, employees and the community, the Labour Department (LD) has formulated the “Code of Practice in times of Typhoons and Rainstorms” (the Code). The Code provides advice and practical guidelines on work arrangements in times of typhoons and rainstorms, arrangements for resumption of work after cancellation of typhoon and rainstorm warnings, as well as wage computations and leave arrangements. The Code also advises employers to give prime consideration to employees’ safety both in the workplace and during the journey to and from work. Employers are furthermore advised to be sympathetic to employees who have genuine difficulties, and be flexible in handling those situations.

52. There are great diversity in the nature and requirements of different jobs in various trades and industries. For some essential services such as public transport, public utilities, medical services, homes for the elderly or persons with disabilities, hotels and security services, it is crucial to maintain different degrees of operation under inclement weather conditions. Moreover, the circumstances of employees commuting from home to workplace in different districts are as varied as that of the impact of inclement weather on the public transport and road systems. Hence regulating the work arrangements of employees under specific circumstances by an across-the-board legislation would fail to address the operational needs of different industries or even the community as a whole, and thus is not practical. Doing so would also undermine the flexibility in work arrangements between employers and employees. LD will update and enhance the content of the Code as appropriate, and will, through various channels and promotional activities, continue to remind employers to adopt reasonable and practicable measures, having regard to the actual conditions. Employers are encouraged to draw up suitable work arrangements jointly with employees to ensure the safety of employees, the maintenance of good labour relations, as well as the smooth operation of the organisations.

53. Relevant departments have actively pursued review and follow-up work in various areas to enhance their resilience and recovery capacity in response to super

typhoons. The overall review is scheduled for completion before the next typhoon season in 2019.

Green finance

54. Green economy has been actively pursued around the world in recent years, through the promotion of green finance to draw international funds for projects relating to low-carbon, sustainable development or combating climate change. Riding on the accelerating global demand for green financial products, Hong Kong, as a global Renminbi business hub and an international asset management centre, is well-equipped to develop into a leading hub for green finance in the region, in particular serving as a premier financing platform for international and Mainland green enterprises/projects in raising funds through issuing bonds, initial public offerings and other channels (such as fund distribution) in Hong Kong.

55. We aim to develop and firmly establish Hong Kong as a leading hub for green finance in the region, with focus on Mainland China (including other cities in the Guangdong-Hong Kong-Macao Greater Bay Area) and economies along the Belt and Road. By leveraging our strengths and advantages as a leading international financial centre, we seek to create values through sophisticated professional services and our unparalleled expertise and reputation in the provision of financial services. The Government would facilitate and provide the necessary infrastructure and catalyst for jump-starting market developments. We will at the same time build up our international profile on green finance with increased international visibility and proactive promotion targeting audience overseas.

56. We are pleased to see that many local, Mainland and international organisations, such as the Asian Development Bank, the World Bank and the European Investment Bank, are making use of Hong Kong to issue green bonds. This attests to the strengths of our competitive capital markets and is conducive to the further development of green finance in Hong Kong. The Government is actively taking forward various initiatives to promote Hong Kong as a leading hub for green finance in the region, including the following proposals in the 2018-19 Budget:

- (a) To attract more corporate green bond issuance in Hong Kong, the Green Bond Grant Scheme was launched in June 2018 to subsidise eligible green bond issuers in obtaining certification under the Green Finance Certification Scheme; and

- (b) To promote the development of green finance in Hong Kong, the Government Green Bond Programme, with a borrowing ceiling of HK\$100 billion, will be launched to finance green public works projects of the Government, so as to encourage more issuers to arrange financing for their green projects through our capital markets and help grow the local green investor base. The Government is actively preparing for an inaugural issuance under the Programme in the first half of 2019, with an aim to set a good example for other green bond issuers in Hong Kong.

International and regional cooperation

57. In terms of regional cooperation, the Government of the Hong Kong Special Administrative Region and the Guangdong Provincial Government have established the Hong Kong/Guangdong Joint Liaison Group on Combating Climate Change to carry out collaboration and exchanges in relation to adaptation and mitigation of climate change through the cooperation programme between Hong Kong and Guangdong. Past cooperation items included exchanges on developing techniques for short-term climate forecasting, influenza risk assessment and climate warning in the context of climate change, strengthening sea level rise research, urban drainage systems, slope safety management, RE technology, “Tanpuhui” scheme, low-carbon products between Hong Kong and Guangdong certification bodies, as well as exploration of cooperation on climate change adaptation and mitigation in the context of Guangdong-Hong Kong-Macao Greater Bay Area Development. With the development of Guangdong-Hong Kong-Macao Greater Bay Area, we expect a closer collaboration between Guangdong and Hong Kong on combating climate change in order to actively promote green and low carbon development in the Greater Bay Area.

58. Hong Kong has been actively involved in international co-operation and exchanges on climate actions. These include joining the C40 Cities Climate Leadership Group (C40) in 2007 and becoming a member of C40’s Steering Committee since 2011. We have been a member of the Chinese delegation attending United Nation’s Climate Change Conferences (i.e. Conferences of the Parties to the United Nations Framework Convention on Climate Change, COPs), including COP21 in 2015 where the landmark Paris Agreement was adopted and COP24 held last year.

Long-term Decarbonisation Strategy

59. The Government attaches great importance to addressing the likely impact that might be brought by climate change, and actions have been taken on various fronts to reduce greenhouse gas emissions. To combat climate change, the Government established the Steering Committee on Climate Change in 2016 under the chairmanship of the Chief Secretary for Administration to steer and co-ordinate actions amongst different bureaux and departments, and released Hong Kong's Climate Action Plan 2030+ in January 2017, setting out in detail the targets and key measures on mitigation, adaptation and resilience to combat climate change. On the basis of Hong Kong's level of carbon intensity in 2005, our target is to reduce our carbon intensity by between 65% and 70% by 2030 (which is equivalent to an absolute reduction of 26% to 36%), so as to align with the target of the Paris Agreement to limit the increase in the global average temperature to well below 2 degrees Celsius above preindustrial levels. To achieve the vision of the Paris Agreement, the Government will drive Hong Kong's low-carbon transformation through measures including adopting cleaner fuels, promoting territory-wide energy saving, commuting green and reducing waste. We will review from time to time the progress of mitigation, adaptation and resilience actions and propose new action plans and timetables.

60. The Government has set out detailed strategies and action plans for combating the global challenge of climate change. Nevertheless, active participation and support of the community and stakeholders are of paramount importance. We shall enhance the understanding of both the community and stakeholders on climate change, raise public awareness of the potential impacts of climate change and strengthen the resilience of the community and stakeholders to extreme weather events. We also need to encourage community involvement to spur behaviour change and practice low-carbon living style.

61. To raise public awareness of the importance of combating climate change, the Government has launched a series of promotional projects, including the release of a leaflet, short videos, Announcements in the Public Interest (APIs) on television and radio, a poster and a new climate change website in 2017. The Environment Bureau also launched the Low Carbon Living Calculator in April 2018 to help the public assess their individual carbon emissions in respect of clothing, food, living and travel in the past year. In addition, more than \$10 million have been earmarked under the Environment and Conservation Fund (ECF) in 2017-18 and 2018-19

financial years to subsidise non-profit-making organisations to carry out public education activities and demonstration projects on climate change.

62. The Government has been organising a series of climate-related education and publicity programmes, including special and roving exhibitions, public consultations, seminars, talks, competitions, carnivals, charters and award ceremonies. The Government pays particular attention to the younger generation for publicity and educational activities, not only because they are particularly affected by climate change, but more importantly because they are our future. Therefore, the Observatory joins hands with many government departments and professional organisations to deliver climate change talks at schools on a regular basis, and coordinates the forum and lectures of “Science in the Public Service”. The topics cover the scientific basis of climate change, energy saving and efficiency, biodiversity conservation, climate change mitigation, adaptation and resilience. The Observatory produces climate change related publications including the pamphlet “Hong Kong in a Warming World”, and the photo album “Climate Change and Biodiversity in Hong Kong” jointly published with the Agriculture, Fisheries and Conservation Department. In collaboration with Ho Koon Nature Education cum Astronomical Centre, the Observatory compiles a curriculum-based education package on climate change. Furthermore, the Observatory produces short videos “Cool Met Stuff” to spread the message of climate change, and collaborates with RTHK to produce a number of episodes of the radio programme “Climate Watcher”.

63. Pursuant to the Paris Agreement, all Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies by 2020. As part of China as well as a responsible member of the global community, Hong Kong needs to draw up our own long-term decarbonisation strategy up to 2050 by 2020. To this end, the Government has engaged the Council for Sustainable Development (SDC) to conduct a public engagement (PE) exercise in the first half of 2019, to collect public views on Hong Kong’s long-term decarbonisation strategy.

64. The Special Report on Global Warming of 1.5°C published by the United Nations Intergovernmental Panel on Climate Change in October 2018 assessed the impacts of global warming of 1.5°C above the pre-industrial level and related global GHG emissions pathways, providing policymakers with the required scientific evidence to formulate climate action plans for achieving the goal of the Paris Agreement (i.e. holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase

to within 1.5 °C). The Government plans to conclude by 2020 the latest the development of Hong Kong's long-term decarbonisation strategy up to 2050. Apart from the recommendations to be put forward by the SDC after the PE exercise, the Government will also consider the latest scientific developments such as the IPCC Special Report on Global Warming of 1.5°C in formulating the strategy.

Conclusion

65. Super Typhoon Hato and Super Typhoon Mangkhut caused extensive damage to Hong Kong, and resulted in storm surges that caused serious seawater inundation at low-lying areas. The continuing rise in sea level as a result of climate change will intensify challenges associated with extreme weather. Urgent action is required to combat climate change.

66. The Government will continue to implement and strengthen the work plan for combating climate change, and join hands with various sectors of the community and the public to move towards low-carbon living.

Environment Bureau
February 2019

Motion on
“Fully transforming into a green and low-carbon smart society and economy, and
proactively alleviating and coping with global climate change”

moved by Hon Martin LIAO
at the Council meeting of 12 December 2018

Motion as amended by Ir Dr Hon LO Wai-kwok, Hon KWOK Wai-keung, Hon
Charles Peter MOK and Hon Kenneth LEUNG

That, given the worsening problem of global climate change, the crisis is imminent; according to the Paris Agreement, various countries are required to propose targets for voluntary reduction in emissions of greenhouse gases and to review and update such targets once every five years, hence Hong Kong should also dovetail with the country in honouring its undertakings as a State party; in this connection, this Council urges the SAR Government to cope with climate change more proactively, lead various social sectors and all people to fully transform Hong Kong into a green and low-carbon smart society and economy, and review at an appropriate time and enhance as appropriate Hong Kong’s capabilities to withstand extreme weather and adapt to climate change, with a view to making every endeavour to help alleviate this crisis faced by all mankind, providing Hong Kong people with due protection of their lives and properties, and promoting the sustainable development of the society and economy; specific policy measures include:

- (1) advocating energy efficiency and promoting intellectualization of infrastructure and green architecture, so as to develop a green and low-carbon smart community;
- (2) perfecting supporting measures to implement the policy on ‘Reduce, Recycle and Proper Waste Management’, and promoting the development of a circular economy;
- (3) providing additional dedicated resources for research and development, promoting the setting up of a ‘centre for industrialization and development of environmental protection technologies’, and promoting the development and use of environmental protection technologies;

- (4) promoting the use of clean energy and renewable energy to flexibly cope with future climate and environment change; and
- (5) promoting regional cooperation to jointly establish a green, low-carbon and high technology smart city cluster;
- (6) establishing a \$2 billion ‘green industries development fund’ to support the development of green industries;
- (7) nurturing a sufficient pool of talents to meet the manpower demand of various green industries;
- (8) providing dedicated tax and land concessions, etc. to attract more green industries to develop business in Hong Kong; and
- (9) enacting legislation on contingency measures for handling disasters caused by climate change and arrangements for suspension of work in times of and after disasters, so as to safeguard the safety of employees;
- (10) using data analysis to identify information that can facilitate the formulation of environmental protection policies and review their effectiveness; and
- (11) promoting the research and application of new green technologies to enhance energy efficiency, lower carbon emissions and reduce waste; and
- (12) developing proactively green finance to promote industry involvement in green projects relating to low-carbon or sustainable developments.