



The Honourable John Lee Ka-chiu  
GBM SBS PDSM PMSM  
Chief Executive  
Office of the Chief Executive  
Tamar, Hong Kong

1<sup>st</sup> September 2022  
*(by e-mail)*

Dear Chief Executive,

**Policy Recommendations for the HKSAR Chief Executive's 2022 Policy Address**

We believe climate change is the most important issue Hong Kong faces – See Attachment 1. We therefore recommend the upcoming policy address prioritise action to accelerate decarbonisation and strengthen climate resilience in Hong Kong.

Moreover, as one of the world financial centres, Hong Kong can play a role in mobilizing the finance needed decarbonisation and climate resilience in Chinese and ASEAN. This requires establishing a robust ecosystem for sustainable finance, promoting climate innovation and technology and cultivating professional expertise across sectors.

We therefore present recommendations in three areas for the Chief Executive to consider for the 2022/23 Policy Address. These are set out in Attachment 2.

- I. Green and Sustainable Finance
- II. Mitigation (to reduce greenhouse gas emissions)
  - Climate Governance
  - Power
  - Building Sector
  - Transport and mobility
  - Waste
- III. Adaptation and resilience

We trust that the enclosed recommendations will be helpful, and we would be pleased to elaborate on any of the points mentioned.

Yours sincerely,



Lawrence Lu  
Executive Director

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ROOM 2405, 9 QUEEN'S ROAD CENTRAL, CENTRAL, HONG KONG.

中環皇后大道中 9 號 2405 室

TEL 電話： (852) 2893 0213

### **The context for policy making on Climate Change**

We appreciate the Chief Executive’s manifesto commitments to sustainable development and building a livable city. Also the Government’s Climate Action Plan 2050 (CAP2050) published in October 2021

The Hong Kong SAR pursuing ‘sustainability’ and ‘live-ability’ as overarching guides for policymaking strongly aligns with the Central Government’s development priority of building an “ecological civilisation”. This also lends credibility to the city on the international stage.

Hong Kong is already bearing the impacts of climate change including record-breaking temperatures, and more frequent extreme weather events. These not only pose risks to physical security, but also threatens the city’s economy and infrastructure. These impacts will be aggravated in the future if we delay mitigation action.

Human-induced climate change is causing dangerous and potentially irreversible damage to ecosystems, leaving billions around the world highly vulnerable. Yet, the impact of climate change so far is mild compared to likely future impacts. While the Intergovernmental Panel on Climate Change (IPCC) AR6 report makes this clear, it focuses on the impacts if humanity reaches net zero emissions in time to hold temperatures below 3C increase. As is noted in the recent ‘Climate Endgame’ report<sup>1</sup> published by world renown scientists, the more severe damage caused by going above 3C is under-explored. Yet, current government commitments to decarbonisation are likely to lead to 3C + scenario.

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<sup>1</sup> Climate Endgame: Exploring catastrophic climate change scenarios.  
[www.pnas.org/doi/full/10.1073/pnas.2108146119](http://www.pnas.org/doi/full/10.1073/pnas.2108146119)

## Policy Recommendations for the HKSAR Chief Executive's 2022 Policy Address

### Introduction

The recommendations in this paper cover:

#### **I. Green and Sustainable Finance (page 5)**

- A. Encouraging sustainable finance
- B. Establishing leadership in standard-setting
- C. Rewarding technological innovation
- D. Accelerating the establishment of voluntary carbon markets through regional and international collaboration

#### **II. Climate Change Mitigation (page 7)**

- A. Climate Governance and policy commitments
- B. Power sector
  1. Establishing regional collaboration on cleaner, lower carbon, and reliable power supplies
  2. Investing in carbon neutrality technology for local power generation
- C. Building Sector
  1. Increasing Transparency
  2. Encouraging energy efficiency
  3. Establishing plans to reduce electricity and Towngas consumption
  4. Retrofitting existing buildings to become low carbon
  5. Measuring embodied energy in new buildings
- D. Transport and mobility
  1. Avoid journeys
  2. Shift journeys to less carbon intensive and less road use intensive modes of transport
  3. Improve by reducing the carbon intensity of each mode of transport
- E. Waste
  1. Reducing landfill and methane emissions
  2. Make sure incinerators include latest technology

#### **III. Climate Change Adaptation and Resilience (page 17)**

## **I. Green and Sustainable Finance**

With a world-class regulatory and institutional base, Hong Kong has the potential to be a regional centre for green and sustainable finance, particularly with regards to channelling capital for projects in Chinese and ASEAN markets. Opportunities include carbon trading, furthering the priority of enhancing green finance as stated in the Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area.

The government might consider the following measures:

### **A. Encouraging sustainable finance**

Green bonds, sustainability-linked lending, and transition bonds can effectively promote green technological innovation, retrofitting existing infrastructure, and the alignment of all sectors with a net zero pathway. The administration (the CE office) might work closely with financial institutions and regulators on capacity building to bridge knowledge gaps and develop supportive policies to further mainstream green finance.

### **B. Establishing leadership in standard-setting**

The government should continue to work with the Green and Sustainable Finance Cross-Agency Steering Group (CASG) to position Hong Kong as a regional leader in standard-setting, taxonomy adoption investigation, green capital raising and reporting standards. The CASG's recommendations for a sector qualification framework, training services and for filling key data gaps should be pursued proactively by this administration. More concrete guidelines and definitions for green projects need to be developed as well, especially in the building sector. When appropriate, we should consider how best to encourage the use and expansion of international standards in Hong Kong and participate proactively in global developments such as the EU-China Common Ground Taxonomy and standards being developed by ISSB.

### **C. Rewarding technological innovation**

Our city has existing concentrated expertise in the Fintech and Web3 fields. The government should capitalize on this talent by working with the many established Hong Kong organizations in this space to make our green finance system one of the world's most technologically advanced and innovative. In particular, the government should consider using Web3 technologies to incentivise participation and improve accountability in the

voluntary carbon market.

**D. Accelerating the establishment of voluntary carbon markets through regional and international collaboration**

Carbon markets can be important catalysts of green investment. However, Hong Kong lags in voluntary market development. According to the Green and Sustainable Finance Cross-Agency Steering Group Carbon Market Workstream, Hong Kong might capitalise on its close links with the Mainland and become a global leader in carbon market development.

As a bridge between Chinese and international markets, Hong Kong is uniquely suited to participate in the development of carbon trading in our region. The administration should consider developing an on-exchange voluntary market for Mainland, local and international buyers, and be an active proponent of a unified voluntary carbon market in the GBA.

The recently announced Hong Kong International Carbon Credit Council will do much to develop local green finance. Further collaboration with Hong Kong, Mainland and international organizations, such as that between HKEX and the Guangzhou-based China Emissions Exchange, the Glasgow Financial Alliance for Net Zero and the Net Zero Financial Service Providers Alliance is needed.

## **II. Climate Change Mitigation**

### **A. Climate Governance and policy commitments**

The Government's Climate Action Plan 2050 (CAP2050) published in October 2021 was a significant step forward with its commitment to absolute reductions in carbon emissions and its listing of the actions that contribute to the reduction. It did not, however, clarify how the reductions from each policy action add up to the overall reduction required. We therefore recommend the Government build on CAP2050 by:

- Enhancing EMSD's Hong Kong Energy End-Use Data (HKEEUD) by:
  - Reconciling the energy consumption in HKEEUD with the fuel and energy statistics published by the Census & Statistics Department.
  - Adding details of Hong Kong GHG emissions<sup>2</sup>.
  - Providing the information in a machine-readable format so researchers and business can better understand Hong Kong's progress against its decarbonisation commitments.
  - Publishing the annual HKEEUD within six months of the end of each year<sup>3</sup>.
- As a new publication, with supporting machine-readable format, provide calculations of carbon emission reductions from each policy measure. The sum of the commitments from each policy initiative should exceed the overall reduction commitment. In this way, a failure on some detailed commitments will not lead to missing the overall commitment.

Actions required to decarbonize the economy and adapt to climate change fall within many bureaus and require revisions in priorities. We recommend the administration:

- Enhance the transparency of the Steering Committee on Climate Change and Carbon Neutrality (SCCCCN), specifically, by publishing its agendas, minutes and papers.

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<sup>2</sup> Data on GHG was dropped from the HKEEUSD in 2019 when the GHG data was published on the EPD Website. The EPD data is, however, does not have sufficient detail for tracking Hong Kong's progress against its decarbonisation targets.

<sup>3</sup> The HKEEUD 2021 was published in April 2022 with information up to end 2019 making this 28 months after the end of the period reported on.

- Further that the SCCCCN:
  - Identify and publish the roles and agenda for each department regarding mitigation and/or adaptation to climate change.
  - Create an emissions mitigation annual target for all Government departments together with the requirement for them to report annually on their results..
- Conduct a feasibility study for a legal framework for climate action, that might include, for example, legally binding targets for emissions reduction, the reporting mechanism and Government responsibility

## **B. Power Sector**

Around 60% of Hong Kong’s greenhouse gas emissions come from the energy sector, comprising electricity and gas use. CAP2050 committed to “reduce the total carbon emissions by half before 2035 from the 2005 level” and attain “net-zero carbon emissions for electricity generation” by 2050. Plans should be published on how this will be achieved together with an annual update on progress.

### **1. Establishing regional collaboration on cleaner, lower carbon, and reliable power supplies**

The goal of eliminating emissions from fossil fuel in daily electricity generation and increasing the share of zero-carbon energy in the fuel mix to 60-70% by 2035 should be further pursued in this administration. To achieve this target, Hong Kong must work with stakeholders in the GBA. The project between Guangdong Province and CLP in the Daya Bay nuclear power plant illustrates one of the many such opportunities for Hong Kong. We must seize other such initiatives to import cleaner, lower-carbon and more reliable power supplies. In cooperation with the power companies, this administration should:

- Identify measures to enhance grid balancing to accommodate a broader energy mix and enhance the reliability and flexibility of the power system.
  - Support power companies in identifying appropriate technologies to facilitate this, such as battery storage.
  - Study the feasibility to upgrade the off-shore LNG terminal to receive hydrogen.
  - Monitor global developments in energy storage technology.
- Develop joint-venture renewable and/or nuclear energy projects in the GBA and Guangdong offshore.



- Explore the feasibility of greater interconnection with the China Southern Grid.

## **2. Investing in carbon neutrality technology for local power generation**

In addition to cooperating with our partners in the GBA, Hong Kong should invest in its own capacity to generate power. To do this, the government can:

- Establish an upstream hydrogen supply chain
- Incentivize power companies to pilot and upgrade existing CGCT to hydrogen co-generation
- Explore opportunities to upgrade the existing LNG terminals.

Hydrogen has received increasing attention in recent years as an energy source. To encourage its development, the Government should explore the role of Hong Kong in order to support the Chinese Medium and Long-term Plan for the Development of Hydrogen Energy Industry and seek to integrate Hong Kong with the national hydrogen grid through Shenzhen.

## **C. Building Sector**

With only small agriculture and manufacturing sectors, Hong Kong's buildings account for 60% of the city's carbon emissions compared to a world average of 47%. This makes action to improve building energy efficiency and reduce embodied carbon in buildings a top priority. We welcome the commitment made in the HKCAP2050 to reduce energy consumption in buildings by 10%-20% by 2035, and recognise that reaching this target will be challenging, especially given the increase in building stock projected by the government's Planning Department. Some actions to consider include:

### **1. Focusing on large commercial and institutional buildings**

Large commercial and institutional buildings have the highest energy consumption and so should be the initial focus for energy efficiency improvement.

## **2. Increasing transparency of information on building energy efficiency**

Transparent information on building energy efficiency is a strong tool in motivating improved energy efficiency. It can impact the attention paid to energy efficiency in the design, financing and management of buildings. To facilitate this, the government should pursue:

- A single building energy rating system so that results can be compared.
- Require both design and annual operating energy efficiency data be published via a publicly accessible government-regulated database. Further, it should be easy for the public to download the information. This provides:
  - Best practice information that building designers and developers can look to when designing new buildings.
  - A comparison between design and actual energy efficiency so there is evidence of whether design performance is met.
  - Information which parties buying or renting buildings can consider hence motivating good performance.
  - Information which government can consider when designing policies to motivate building energy efficiency.
- Implementing such a system in stages as follows:
  - Start the programme by covering government owned buildings and any new building given a GFA concession while also encouraging large property owners to join the scheme.
  - Once the initial group of buildings is covered, require all buildings of a given type and over a certain size to follow.

In addition, the EMSD might provide further enhanced, disaggregated Electricity Utilization Index data across building categories to the public. This will allow the green finance industry to develop more targeted products to reduce emissions.

## **3. Other measures to encourage improved energy efficiency**

- Progressively tighten requirements and standards in the building energy code and the mandatory energy-efficiency labelling scheme.
- Conduct a study into changing taxation on buildings according to their energy efficiency. The study should consider:
  - Once the energy rating system is reliable, change property rates from 5% on

all buildings to a sliding scale with efficient buildings paying less. This might be done initially only for Commercial Buildings above a certain size. The changes can be revenue neutral with rates on inefficient buildings being increased while those on efficient ones are reduced.

- Introducing a carbon tax on energy used in buildings. This might be done as a revenue neutral measure by reducing rates at the same time as the carbon tax is introduced.

#### **4. Establishing plans to reduce electricity and Towngas consumption**

To develop a more holistic perspective on energy consumption, the government should introduce new targets for energy reduction that take into account Towngas usage.

Similar to the existing electricity targets in the Climate Action Plan 2050, commitments for 2030 and 2050 should be made, accompanied by interim targets to monitor progress. This will support Hong Kong's reporting of commitments as part of China's submission to the United Nations. Data from EMSD's End Use Energy Data and other sources can be used to set subsidiary targets for the building sector, including:

- Residential: Separate targets for the Housing Authority and Private Sector. These target to include both all electricity and Towngas used other than electricity for EV charging for which there should be a separate target.
- Itemize infrastructure providers with substantial energy consumption and set targets for each of them. This includes, WSD, DSD and Highways Department.
- Itemize and set targets for both energy consumption and energy consumption per square meter for each main group of government buildings. For example: Hospital Authority, Government Offices, Government Schools and each University.
- Set specific targets for each type of Commercial Building.

#### **5. Measuring embodied energy**

Hong Kong currently lacks information on embodied energy in its buildings. This source of carbon is substantial: it is estimated to comprise 21% of all annual carbon emissions in the SAR but there is very little information on embodied carbon and hence little attention paid to minimizing it in new builds.

The government should take the lead by systematically measuring embodied carbon in government buildings. It should also introduce new prerequisites to awarding of the GFA

concession:

- Require the submission of a Life Cycle Assessment (LCA) before issuing the Occupation Permit for all Government owned buildings and GFA concession applicants
- Disclose LCA to the Buildings Department for publication and develop 'Environmental Product Declarations' for building material used in Hong Kong

## **D. Transport and mobility**

The government should fund a study to recommend a holistic plan for decarbonising Hong Kong's transportation sector. This study should:

- Compare Hong Kong with C40 City leaders in decarbonising mobility to identify opportunities for improvement.
- Note options for improving the governance of mobility in Hong Kong. This includes recommending how areas requiring cross-bureau policy coordination can best be handled.
- Consider the 'Avoid', 'Shift' and 'Improve' approaches to decarbonising mobility. (Details below).
- Deliver a clear time-specific roadmap for zero-emission road transport, in which the new registration of ICE vehicles are banned by 2032.

### **1. AVOID journeys**

The number and length of journeys can best be controlled by town planning that maintains a compact city design and is friendly towards public transit. We suggest:

- **The 15 minute city:** We note that C40 Cities have the concept of the '15 minute city' where nearly everything the public wants is within 15 minutes of their home. We recommend that something similar be included in Hong Kong's city planning, in particular for the Northern Metropolis Development Scheme.
- **Minimise barriers to people moving closer to where they work:** In particular.
  - An Owner Occupier moving more than, say, 5 kilometers should not pay stamp duty on buying a new home within, say, 3 years of selling their old one.
  - The Housing Authority should facilitate tenants wishing to move more than, say 5 kilometers.

## 2. Shift journeys to low carbon and less intensive road use modes of transport

- **Optimising transit-oriented development** as the blueprint for new development areas and redevelopment areas. Transit-oriented development entails building new residential and commercial buildings on top of, or near, public transport hubs so that residents can connect directly with the mass transit system.
- **Redesigning urban morphology to enhance walkability and bikeability.** We suggest examining the possibility of redesigning roads and roadside infrastructure to make the streets more walkable and people friendly, exploring the feasibility of adding bike lanes in developed areas and develop an implementation schedule, this may include:
  - Install more cultural displays and public amenities in Hong Kong Island.
  - Widen pavements, reduce detours, and continue to improve sanitation in Kowloon.
  - Adopt and strengthen the human-oriented development mode in the New Territories.
- **Actions to shift people from private cars to public transport and taxis:**

Between 2003 and 2021 the number of private cars on the road increased by 48% while the number of taxis and public transport vehicles only increased by 10%. The increase in the proportion of private cars has two negative impacts:

  - a. Petrol or diesel private cars emit more carbon per passenger journey than public transport.
  - b. All private cars (Electric as well as Petrol/Diesel) take more road space per passenger journey than public transport. This causes road congestion, which significantly increases journey times and carbon emissions. For example Hong Kong's Buses have very high carbon emissions when they are air-conditioning passengers while moving slowly in heavy traffic.
- Policies should be implemented to motivate people to use public transport rather than private cars. These may include:
  - Electronic Road Pricing with a dynamic pricing mechanism, whose advantages include reducing congestion by shifting some traffic from peak to off-peak periods.
  - Increasing enforcement of traffic regulations to reduce congestion caused by chauffer driven cars.

- Giving greater priority to public transport on roads, especially in tunnels and heavily congested corridors. NB: We appreciate this is already a practice but believe more should be done.
- Increasing first registration taxes and vehicle license fee on all private cars including electric vehicles.
- Reducing the motivation to own a car by providing better alternatives. Measures to consider include:
  - Facilitating 'specialised on-call hire-car/taxi services which meet special needs such as families needing children's car-seats or disabled people
  - Changing planning rules to encourage developers of large blocks of flats to provide a small carpark with a Zip-Car type service rather than one parking space per flat.
- Seek new funding and operational models for public transport operators with the objectives of:
  - Increasing the attractiveness of public transport compared to cars
  - Make the public bus network more punctual and increase linkage between the New Territories and business districts in Kowloon and Hong Kong Island.
  - More flexible routing and interchange arrangements aimed at increasing the load factor for public transport.
  - Increase the synergy between the MTR and bus operators, for instance by exploring the feasibility of interchange discounts between buses and trains.
- Facilitating these improvements by making part of the Transport Department into a separate '**Road Use Authority**' along the lines of the 'Hospital Authority'. Give this Road Use Authority the objective of reducing journey times and carbon emissions and the power to:
  - Control dynamic pricing for ERP.
  - Overseeing the policy for action by Traffic Wardens so they can be used to curb practices which cause road congestion.
  - Manage changes in bus routes. In particular, a 'big data' enabled change from the current licensing of bus routes to a requirement on bus companies to meet services levels between bus stop pairs.
  - Develop policies for bus-only lanes.
  - Service level information should be provided to District Councils so that their

discussion with the Road Use Authority focuses on these service levels rather than the details of individual bus routes or changes in ERP charges.

### **3. IMPROVE by reducing the carbon intensity of each mode of transport**

Accelerate the transition from diesel/petrol to clean energy vehicles by

- Identifying areas requiring cross-bureau policy coordination for the relevant transport infrastructure development.
- Partnering with electric vehicle charging station providers to establish a central, real-time platform for the public to see what stations are being used at any given moment.
- Setting clear targets and timelines for infrastructure support and capital investment to support the transition to clean energy vehicles.
- Defining new funding and operation models for public transport operators, including subsidising the purchase of clean energy vehicles.
- Developing infrastructure such as charging facilities or hydrogen refuelling to accommodate new technologies.
- Leading, funding, and coordinating large-scale trials of both battery electric and hydrogen fuel cell buses.
- Where appropriate, providing low-interest loans for retrofitting bus depots and other infrastructure.
- Removing the regulatory barriers for technology development and adoption.
- Encouraging innovation —such as new research centres at local universities and private companies or expanding support for the Innovation and Technology Fund— to develop the commercial viability of new technologies such as green hydrogen and zero-emissions transportation.
- Reviewing the NET Fund’s application, testing and reporting procedures to make it more attractive to potential applicants.

### **E. Waste**

HKCAP2050 includes adding a second Integrated Waste Management Facility (IWMMF) by 2035. We note that a site has been planned for this on the ash lagoon next to Castle Peak Power Station. Investment in this facility should be fast-tracked now. The technology is now mature so there is no justification in waiting until the first IWMMF to be in operation.

Technology should be the most up to date.

In addition, the government should consider:

- Planning to build the third Integrated Waste Management Facility
  - Set up a committee to research on suitable places, budget, and clear deadline, the committee should include different stakeholders from society such as environmental society and residents.
  - Hold public consultations to understand the views of citizens.
- Implementing the Municipal Solid Waste charging scheme as soon as possible
  - Make the charge inflation-adjusted and assess the pricing system every 2 years to ensure the effectiveness of stopping people from producing too much rubbish.
- Strengthening the plastic bag levy
  - Establish an inflation-adjusted mechanism to adjust the plastic levy annually
- Promoting 'Drink Without Waste' program
  - Provide explicit payment for the services of the recyclers
  - Encourage property management companies and building owners to provide places for cleaners to separate and stockpile recyclables
  - Cultivate the separation of recyclables by the consumer, e.g., by providing designated recyclables collection points on each floor
  - Ensure that a future program includes an explicit payment for the services of stationary and mobile recyclers
  - Establish licensing system for registering Shop Front Extensions (SFE) under specific circumstances
  - Accommodate efficient recycling pop-ups in every neighbourhood
- Implementing policies from the Waste Blueprint for Hong Kong 2035 to enhance the effectiveness of the 'beautify' Hong Kong campaign
  - Establish a local circular economy for food waste
  - Review the penalty and strengthen enforcement the regulations against illegal deposit of waste



### **III. Climate Change Adaptation and Resilience**

According to CEDD<sup>4</sup>, many areas in the city are at high-risk from rising sea levels<sup>5</sup>. This vulnerability will increase with climate change and with the 2021 Northern Metropolis Plan to develop low lying areas in the North-West NT. Further climate change is likely to increase the frequency of severe weather and the World Resources Institute estimates \$1 invested in adaptation generates between \$2 and \$10 in damage avoided. Hong Kong should, therefore, improve the ability of infrastructure to withstand extreme weather events by:

- Conducting security risk assessments on infrastructure and devising contingency plans to reduce risks.
- Increasing funding for nature-based solutions including:
  - Protecting and restoring wetlands, fishponds and mangroves.
  - Implementing blue-green infrastructure and the sponge city concept.
- Developing plans for Hong Kong to protect the city from at least 5 meters of storm tides (Note: Typhoon Mangkhut storm tides were already close to 4-5m across Hong Kong). On top of the storm tide levels, please also consider three scenarios of sea level rise - 2 meters, 4 meters, and 7 meters These plans need to include:
  - Identifying any areas it is uneconomic to defend under each of these three scenarios. This can guide decisions on where it is appropriate to invest in long-life assets such as MTR lines.
  - Modifying coastal infrastructure to be able to handle sea level rise scenarios.
  - Formulate action plans potential extreme weather and storm surge and communicate them to residents.
  - Replenish coastal reefs, wetlands and mangroves as they form a physical barrier to the tides

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<sup>4</sup> CEDD report link <https://www.cedd.gov.hk/eng/our-projects/project-reports/index-id-24.html>

<sup>5</sup> The August 2021 IPCC AR6 Working Group 1 report highlighted the possibility of there being a 6.9 meter rise in global average sea level by 2300. The scientific advice is that sea level rise of this amount or more is very likely in the very long-term. What science cannot advise is how rapidly the sea level will increase.