



A photograph of a busy street in Hong Kong during a rainstorm. The street is wet and reflective, with yellow zebra crossings. A traffic light in the center foreground shows a red light. Pedestrians are crossing the street, some holding umbrellas. A yellow van and a white taxi are visible on the left, and a large bus is on the right. The background shows more traffic and city buildings.

Hong Kong's Pathway to Carbon Neutrality before 2050 Goals and Opportunities

K S Wong, Secretary for the Environment, Hong Kong SAR




China will scale up its Intended Nationally Determined Contributions by adopting more vigorous policies and measures. We aim to have CO2 emissions peak before 2030 and achieve carbon neutrality before 2060.



2020.09

Extracted from ***President Xi Jinping's***
statement at the General Debate of the 75th Session of the
United Nations General Assembly




The community in general expects Hong Kong to go further in deep decarbonisation... The Hong Kong Special Administrative Region will strive to achieve carbon neutrality before 2050. To this end, the Government will set out more proactive strategies and measures to reduce carbon emissions.

**2020.11
Policy Address**

The Chief Executive, Mrs Carrie Lam,

announced Hong Kong's carbon neutrality target in
the 2020 Policy Address



香港 資源循環 藍圖 2035

2021年2月



.....Waste Blueprint for Hong Kong 2035.....



Summary



Waste
Reduction



Resources
Circulation



Zero
Landfill



New
Targets

1 Medium-term Target

By implementing charging for disposal of MSW, to gradually reduce the per capita MSW disposal by 40-45% and increase the recovery rate to about 55%



↓40-45%



↑~55%

2 Long-term Target

By developing adequate waste-to-energy facilities, to move away from the reliance on landfills in the long run



Six
Major
Areas of
Action

To achieve the vision of “Waste Reduction • Resources Circulation • Zero Landfill”, we will take forward our actions under the following six major areas:

1



Waste
Reduction

2



Waste
Separation

3



Resources
Circulation

4



Industry
Support

5



Innovation and
Cooperation

6



Education and
Publicity

Waste Plan 2035

2021.02

香港 電動車普及化 路線圖



環境局
Environment
Bureau

2021年3月

Summary of Roadmap on Popularisation of Electric Vehicles

Vision — Zero Carbon Emissions • Clean Air • Smart City

Existing Key Initiatives

First Registration Tax (FRT) Concessions
FRT concessions and One-for-One Replacement Scheme for e-private cars. Accumulated concessions exceeding \$7.4 billion in 6 years since 2015

Lower Vehicle Licence Fees
Licence fees for e-private cars are lower

Free Charging
Free EV charging services at government car parks

Tax Concessions
Full FRT waiver and profits tax deduction for e-commercial vehicles

Supporting Technological Developments
\$1.1 billion New Energy Transport Fund to subsidise trials and application of green transport technologies

Private Charging Facilities

NEW BUILDINGS:
Must install charging infrastructure to apply for gross floor area concessions for car parks starting from 2011. 68 000 parking spaces have been approved

EXISTING BUILDINGS:
\$2 billion EV-charging at Home Subsidy Scheme open for application since end-2020 which is expected to subsidise installation of charging infrastructure for more than 60 000 parking spaces in existing private residential buildings

Public Charging Network
NEW BUILDINGS:
Install EV medium chargers at 30% of parking spaces at new government buildings

EXISTING CAR PARKS:
Allocated \$120 million to add 1 000+ medium chargers at government car parks by 2022

Green and Decarbonisation • Innovation and Cooperation

Multi-pronged approach to create conducive environment for popularisation of EVs

Task Force

Examine high-end development of new decarbonisation technologies globally, including new energy vehicles and fuel technology such as hydrogen fuel

Green Tech Fund

\$200 million Green Tech Fund to fund R&D of green technologies, including EV projects

Green
Tech Fund
低碳绿色
科技基金

Smart City

Make good use of development in technologies including Internet of Things, big data and artificial intelligence

Continue to promote the adoption of autonomous driving and technologies in smart mobility

Regional Collaboration

Seize opportunities to be brought about by the EV technological development in Greater Bay Area

Electric Private Cars

No new registration of fuel-propelled private cars including hybrid vehicles in 2035 or earlier



Tax Concessions

Increased the FRT concession cap under One-for-One Replacement Scheme for e-private cars to \$287,500
Extended FRT concessions and One-for-One Replacement Scheme to March 2024

Government Taking the Lead

EV as standard for government small and medium private cars to be procured or replaced

Public Organisations

Encourage public organisations to make reference to the government's new green procurement policy for vehicles

Electric Commercial Vehicles

Dedicated Trials Promoting trials for electric public transport and commercial vehicles proactively, with a view to setting a more concrete way forward and timetable around 2025

Single-deck Bus

\$180 million trial for single-deck e-buses to put into service progressively to test the operational performance

Double-decker

Trials for double-deckers and other types of buses under New Energy Transport Fund (NET Fund)

Public Light Bus

\$80 million trial for e-public light buses to be commenced in 2023

Taxi

Explore with operators for suitable operational mode and EV models for trial

Goods Vehicle

Trial for available medium goods vehicles model under NET Fund

Other Vehicles

Funding scope of NET Fund expanded to cover motorcycles and non-road vehicles

Charging Network

Private Charging Facilities

2025 ≥150000

With the encouragement and incentive measures, we expect more private commercial or residential parking spaces to be equipped with charging infrastructure

Examine requiring parking spaces in new private buildings to be equipped with charging infrastructure

Public Charging Facilities

2025 ≥5000
(Plan to double in the future)

Public Transport

Designate charging bays for public transport at public transport interchanges of new development areas

Quick Charging Facilities

Identify sites for a territory-wide quick charging network, including exploring the feasibility to convert petrol and LPG filling stations to charging stations

Promoting Marketisation

Fees for EV charging at government car parks to be imposed from around 2025

Marketise charging services progressively with a view to promoting its sustainable development in the long run

Travelling to the Mainland

Study proposals to facilitate EV charging in the Mainland

Maintenance Services

Post-secondary Training

Work closely with post-secondary institutions to provide sufficient training, re-training and education opportunities

Collaboration with the Trade

Strengthen communication with the trade and facilitate cooperation between EV suppliers and local institutes to offer additional education programmes



Battery Recycling

Eco-responsibility

Strive to legislate a Producer Responsibility Scheme for retired EV batteries in the next few years

Green Technologies

Cover second life applications of EV batteries in the priority themes under the Green Tech Fund



Target



Zero Vehicular Emissions

Act in concert with Hong Kong's target to achieve carbon neutrality before 2050

2021.03
EV Roadmap

香港 清新空氣 藍圖

2035

2021年6月



環境局
Environment Bureau

運輸及房屋局
Transport and Housing Bureau

食物及衛生局
Food and Health Bureau

發展局
Development Bureau

Summary of the Clean Air Plan for Hong Kong 2035

Vision



Healthy Living



Low-carbon Transformation



World Class

Target

By 2035
Become a liveable city with air quality on par with major international cities

ULTIMATE GOAL
Air quality to fully meet the ultimate targets under the Air Quality Guidelines of the World Health Organization

Six Major Areas of Action

Green Transport

EV Roadmap

Take forward measures set forth in the Hong Kong Roadmap on Popularisation of Electric Vehicles to attain zero vehicular emissions before 2050



Environmentally Friendly New Development Areas

Adopt environmentally friendly transport mode in new development areas



Green Transport Network

Expand railway network to meet development needs, and implement Free-flow Tolling System at government toll tunnels and Tsing Sha Control Area by 2022



New Energy Ferries

Conduct trials for electric and hybrid ferries, and explore with ferry operators to progressively adopt new energy ferries by 2035



Comprehensive Emissions Reduction

Vehicular Emissions

Continue phasing out old diesel commercial vehicles



Subsidise franchised bus companies to conduct trials for emission reduction devices



Vessel Emissions

Explore to further tighten the sulphur content limit of locally supplied marine fuels to 0.001%, and impose emission standards for new petrol-powered outboard engines



Volatile Organic Compounds (VOCs)

Tighten the VOC content limits of architectural paints before 2024 and extend the control to cleaning products



Liveable Environment

City Planning

Pedestrian-friendly and bicycle-friendly policies



Update professional practice notes to enhance air quality at public transport interchanges



Health Information

Update Air Quality Health Index



Embark on a research for the long term health impact of air pollution on the Hong Kong population



Clean Energy

Power Plant Emissions Reduction

New low-carbon electricity generation strategy under Hong Kong's Climate Action Plan



Continue to formulate Technical Memorandums to tighten emission limits of power plants under the new low-carbon electricity generation strategy



Green Energy

Explore means to take forward the use of liquefied natural gas (LNG) in ocean-going vessels, and formulate technical requirements and related safety regulations and specifications for LNG bunkering in the next few years



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Scientific Management

Information Dissemination

Develop a smart air quality monitoring system with integration of the Internet of Things, artificial intelligence, sensors and numerical models to provide more detailed district-based air quality information to the public



Advanced Monitoring

Adopt innovative instruments to monitor and analyse air pollutants in real time



Conduct district-based air quality monitoring to identify pollution distributions



Apply mini-sensors to monitor ambient and indoor air quality



Regional Collaboration

Regional Targets

Formulate regional emissions reduction targets for 2025 and 2030 with the Guangdong Province



Knowledge Exchange

Encourage exchanges among academics and talents in the Greater Bay Area to enhance technical standards



Regional Monitoring and Analysis

Set up 5 monitoring sites for 3D air quality monitoring with LIDAR technology



Integrate real-time VOC monitoring and conduct ozone pollution research to better understand ozone characteristics and formation



2021.06
Clean Air Plan 2035




The Steering Committee on Climate Change and Carbon Neutrality chaired by me will formulate the overall strategy and oversee the co-ordination of various actions. The **Hong Kong's Climate Action Plan 2050**, to be announced shortly by the Secretary for the Environment, will set out more proactive strategies and measures on reducing carbon emissions to attain carbon neutrality ...

The Chief Executive, Mrs Carrie Lam

2021.10
Policy Address





..... and will pursue more vigorous interim **decarbonisation targets** to reduce Hong Kong's carbon emissions by 50% before 2035 as compared to the 2005 level. To oversee the effective implementation of all these actions, the ENB will set up the **Office of Climate Change and Carbon Neutrality** to strengthen co-ordination and promote deep decarbonisation.

The Chief Executive, Mrs Carrie Lam

2021.10
Policy Address



香港 氣候行動 藍圖 2050

2021年10月

Summary of Hong Kong's Climate Action Plan 2050

Vision — Zero-carbon Emissions • Liveable City • Sustainable Development

Retrospect and Prospect

Decarbonisation

Over the past decade, the Government has allocated over \$47 billion to implement various carbon reduction measures. The two power companies have also allocated about \$39 billion to decarbonisation projects.

Reduce Coal for Electricity Generation
Reduce the share of coal in the fuel mix for electricity generation from around half in 2015 to less than a quarter.

Energy Saving and Green Buildings
About 2.1 billion kWh of electricity was saved in 2020 as compared with 2015 (-4.7%).

Electric Vehicles (EVs)
In the first half of 2021, one out of every five newly registered private cars is EV.

Adaptation and Resilience

The Climate Change Working Group on Infrastructure: Major Studies

Strengthening Infrastructure

- Study on resilience of Government critical infrastructure in Hong Kong under extreme weather
- Sensitivity test under direct hit by super typhoons
- Frequency analysis of extreme sea levels

Tropical Cyclones

- Projection of extreme winds

Extreme Temperatures

- Study on potential impacts on Government infrastructure under extreme temperatures

Reduce Flood Risk

Eliminated 127 flooding blackspots, improvement works for the remaining 4 blackspots will be completed in phases.

Contingency Plan for Natural Disasters

Inter-departmental Steering Committee chaired by the Chief Secretary for Administration to handle natural disasters of a substantial scale.

Contingency Plan for Transport System

Update contingency plans to handle emergency situations at major transport infrastructure.

Emergency Alert System

Disseminate messages to mobile users during emergency situations to remind the public to adopt contingency measures.

Strategies • Opportunities

Moving towards carbon neutrality can bring ample and diverse development opportunities, enhance Hong Kong's competitiveness and support sustainable development.

Steering and Coordination

The Steering Committee on Climate Change and Carbon Neutrality under the chairmanship of the Chief Executive to formulate the overall strategy.

Green Finance

Accelerate the development of green and sustainable finance, develop Hong Kong into a green financial hub in the region.

Green Economy

Facilitate the development of green industries, create investment and job opportunities.

Technology and Innovation

Promote ICT development and re-industrialisation, facilitate the application of decarbonisation technologies and green R&D.

Capacity Building

Climate change-related content to be incorporated into the curricula of tertiary institutions.

Carbon-neutral Communities

Develop strategic growth areas into carbon-neutral communities.

Net-zero Electricity Generation • Energy Saving and Green Buildings

In 2019, electricity generation accounted for about 66% of total carbon emissions. Hong Kong will gradually reduce the use of fossil fuel and expedite the use of clean zero-carbon energy.

No Coal for Electricity Generation

2035

Cease using coal for daily electricity generation, to be replaced by low-to-zero-carbon energy.

Renewable Energy (RE)

2035

7.5-10% (Increase to 15% subsequently)
Public and private sectors to develop RE proactively to increase its share in the fuel mix for electricity generation.

Zero-carbon Energy

2035

60-70%
Trial of new energy and closer cooperation with neighbouring areas to increase the supply of zero-carbon electricity.

Cooperation and Innovation

Seek investment and development opportunities, participate in and operate zero-carbon energy projects near Hong Kong.

Electricity Saving in Buildings

2035

Electricity consumption (Compared with 2015)
(Reduce by 30-40% subsequently)

Strengthening Regulation

Continues enhancement of energy performance of buildings
Expand the scope of regulation to cover all buildings with high energy consumption
Conduct more frequent energy audits

Smart Management

Use smart technologies to enhance energy saving management and efficiency of buildings and infrastructure
Incorporate district cooling systems in development projects

Green Transport

Transport constituted about 18% of total carbon emissions in 2019. Popularisation of EVs and other new energy transport can help the transport sector achieve zero carbon emissions.

Clean Air Plan for Hong Kong 2035 Hong Kong Roadmap on Popularisation of Electric Vehicles

2035

Implement strategies in the Clean Air Plan to promote adoption of new energy transport to expedite low-carbon transformation.

2050

Take forward measures set forth in the EV Roadmap to attain zero vehicular emissions before 2050.



Hydrogen Fuel Cell Vehicles

2035

Test out hydrogen fuel cell electric buses and heavy vehicles.

Electric Private Cars

2035

Cease the new registration of fuel-propelled and hybrid private cars in 2035 or earlier.

New Energy Transport

2035

Progressively adopt new energy ferries.

Waste Reduction

Waste accounted for about 7% of total carbon emissions in 2019. Developing waste-to-energy facilities and promoting waste reduction and recycling will enable us to move away from reliance on landfills for municipal waste disposal.

Waste Blueprint for Hong Kong 2035

2035

Implement the Waste Blueprint for Hong Kong 2035 to realise the vision of "Waste Reduction • Resources Circulation • Zero Landfill".



Municipal Solid Waste Charging

2023

Prepare for implementation of waste charging, encourage waste reduction and recycling, and strengthen community facilities and support.

Regulation of Disposable Plastic Tableware

2025

Regulate disposable plastic tableware, etc. in phases, reduce plastic at source.

Waste-to-energy

2035

Develop adequate waste-to-energy facilities, move away from reliance on landfills for municipal waste disposal.

Target

Before 2035



Total carbon emissions
Compared with 2005 level

Before 2050



Review every five years In line with the spirit of the Paris Agreement, review decarbonisation strategies and targets about every five years

2021.10
Climate Action Plan 2050



Strategies • Opportunities

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Moving towards carbon neutrality can bring ample and diverse development opportunities, enhance Hong Kong's competitiveness and support sustainable development

Steering and Coordination

The Steering Committee on Climate Change and Carbon Neutrality under the chairmanship of the Chief Executive to formulate the overall strategy

Climate Budget

Allocate ~ **\$240 billion** to combat climate change in the next 15 to 20 years

Office of Climate Change and Carbon Neutrality

Set up a new office to strengthen coordination and promote decarbonisation

Advisory Committee

Establish a dedicated advisory committee to encourage public participation, including young people

Public Engagement

Government to work together with different sectors to promote low-carbon lifestyle

Green Finance

Accelerate the development of green and sustainable finance, develop Hong Kong into a green financial hub in the region

Green Economy

Facilitate the development of green industries, create investment and job opportunities

Technology and Innovation

Promote I&T development and re-industrialisation, facilitate the application of decarbonisation technologies and green R&D

Capacity Building

Climate change-related content to be incorporated into the curricula of tertiary institutions

Carbon-neutral Communities

Develop strategic growth areas into carbon-neutral communities

The HKSAR Government will devote ~HK\$240 billion (about JPY 3.5 trillion) to take forward various measures to mitigate and adapt to climate change in the next 15-20 years

Net-Zero Electricity Generation • Energy Saving & Green Building

In 2019, electricity generation accounted for about 66% of total carbon emissions. Hong Kong will gradually reduce the use of fossil fuel and expedite the use of clean zero-carbon energy

No Coal for Electricity Generation

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Zero-carbon Energy

2035

60 - 70%

Trial of new energy and closer cooperation with neighbouring areas to increase the supply of zero-carbon electricity

Renewable Energy (RE)

2035

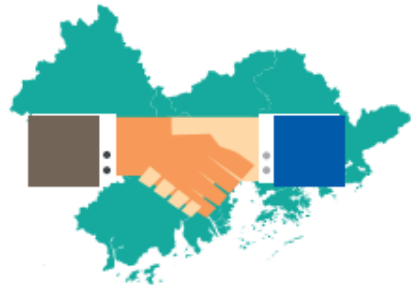
7.5 - 10%

(Increase to 15% subsequently)

Public and private sectors to develop RE proactively to increase its share in the fuel mix for electricity generation

Cooperation and Innovation

Seek investment and development opportunities, participate in and operate zero-carbon energy projects near Hong Kong



Decarbonisation comes at a price. Buildings account for about 90% of Hong Kong's total electricity consumption. Promoting energy conservation and improving energy efficiency can help reduce the cost of transformation

Electricity Saving in Buildings

2035

Electricity consumption (Compared with 2015)

COMMERCIAL BUILDINGS
15-20%

(Reduce by 30-40% subsequently)

RESIDENTIAL BUILDINGS
10-15%

(Reduce by 20-30% subsequently)

Strengthening Regulation

Continuous enhancement of energy performance of buildings

- Expand the scope of regulation to cover all buildings with high energy consumption
- Conduct more frequent energy audits
- Implement the identified energy management opportunities
- Strengthen the promotion of retro-commissioning

Explore setting a minimum energy efficiency requirement for specified appliances

Smart Management

Use smart technologies to enhance energy saving management and energy efficiency of buildings and infrastructure

Incorporate district cooling systems in development projects

Green Transport • Waste Reduction

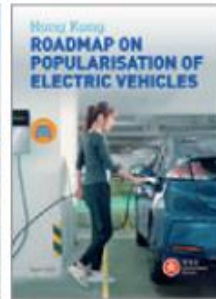
Clean Air Plan for Hong Kong 2035 Hong Kong Roadmap on Popularisation of Electric Vehicles

2035

Implement strategies in the Clean Air Plan to promote adoption of new energy transport to expedite low-carbon transformation

2050

Take forward measures set forth in the EV Roadmap to attain zero vehicular emissions before 2050



Hydrogen Fuel Cell Vehicles

Within 3 years

Test out hydrogen fuel cell electric buses and heavy vehicles



Electric Private Cars

2035

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New Energy Transport

2035

Progressively adopt new energy ferries



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Waste Blueprint for Hong Kong 2035

2035

Implement the Waste Blueprint for Hong Kong 2035 to realise the vision of "Waste Reduction • Resources Circulation • Zero Landfill"



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Waste-to-energy

2035

Develop adequate waste-to-energy facilities, move away from reliance on landfills for municipal waste disposal

Strategies • Opportunities



Green Finance

Develop Hong Kong into a green financial hub in the region

Green Economy

Develop green industries, create investment and job opportunities

Technology

Promote decarbonisation technologies and innovation, and green R&D

Capacity Building

Climate change-related content in the curricula of tertiary institutions

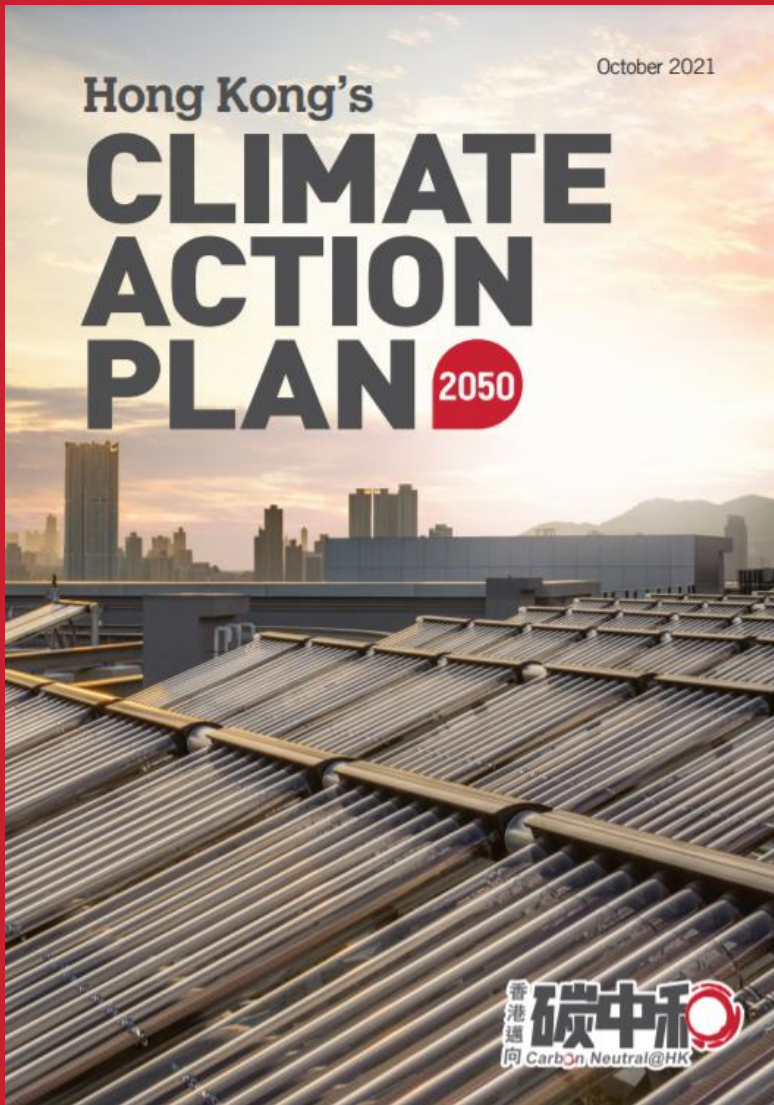
Carbon-Neutral Communities

Develop strategic growth areas into carbon-neutral communities

Zero-carbon Emissions • Livable City • Sustainable Development

October 2021

Hong Kong's CLIMATE ACTION PLAN 2050



香港邁向 **碳中和** Carbon Neutral@HK

February 2021

WASTE BLUEPRINT for Hong Kong 2035



環境局 Environment Bureau

Please scan this QR code for the "Waste Blueprint for Hong Kong 2035"



Designed and published by the Environment Bureau and printed by Government Logistics Department on environmentally-friendly ink on recycled paper.

March 2021

Hong Kong ROADMAP ON POPULARISATION OF ELECTRIC VEHICLES



環境局 Environment Bureau

Please scan this QR code for the "Roadmap on Popularisation of Electric Vehicles"



Designed and published by the Environment Bureau and printed by Government Logistics Department on environmentally friendly ink on recycled paper.

June 2021

CLEAN AIR PLAN for Hong Kong 2035



環境局 Environment Bureau
運輸及房屋局 Transport and Housing Bureau
食物及衛生局 Food and Health Bureau
發展局 Development Bureau

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**2021.10
Carbon Neutrality Partners**