

Energy Development in Hong Kong, China

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Environment and Ecology Bureau
The Government of the Hong Kong Special Administrative Region





Climate Change

碳中和

Carbon Neutrality

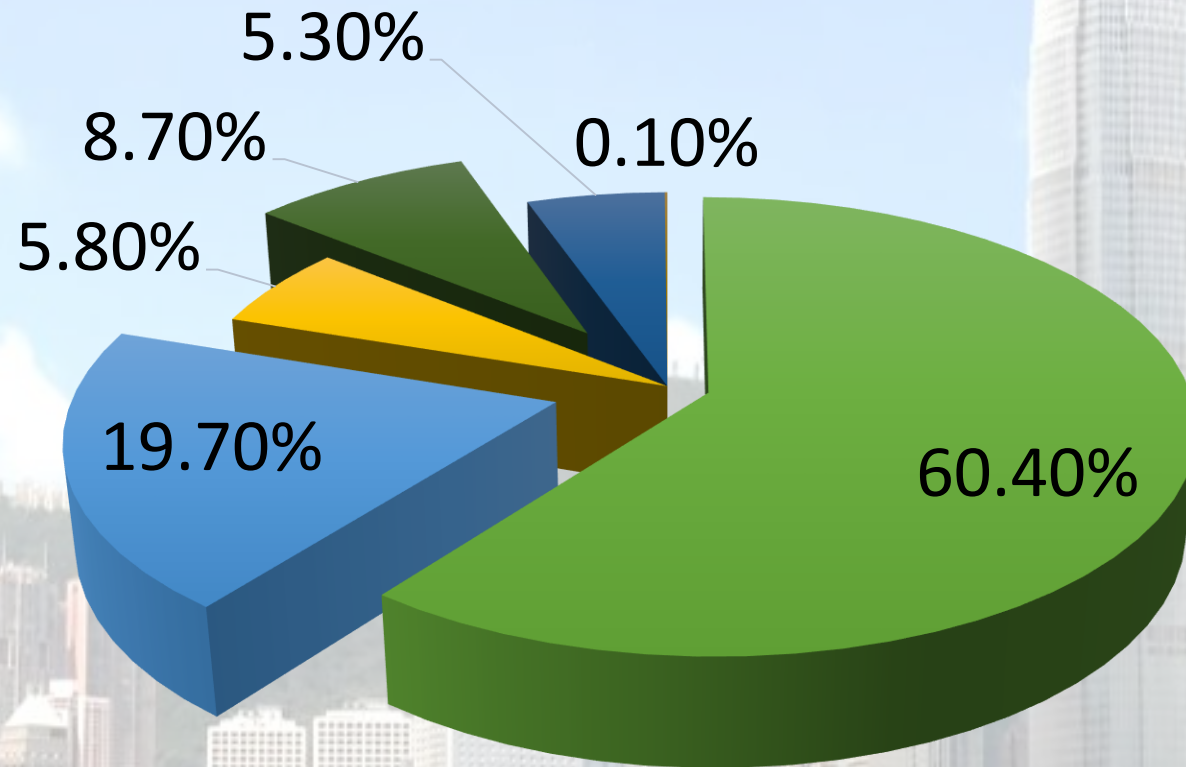
唯一出路 THE ONLY WAY OUT

Trade

Public

Government

HKC's GHG Emission in 2020



- Electricity Generation
- Transport
- Others End-use of Fuel
- Waste
- Industrial
- Others

Hong Kong's Climate Action Plan 2050



Vision

Zero-carbon Emissions

Liveable City

Sustainable Development



Net-zero Electricity Generation



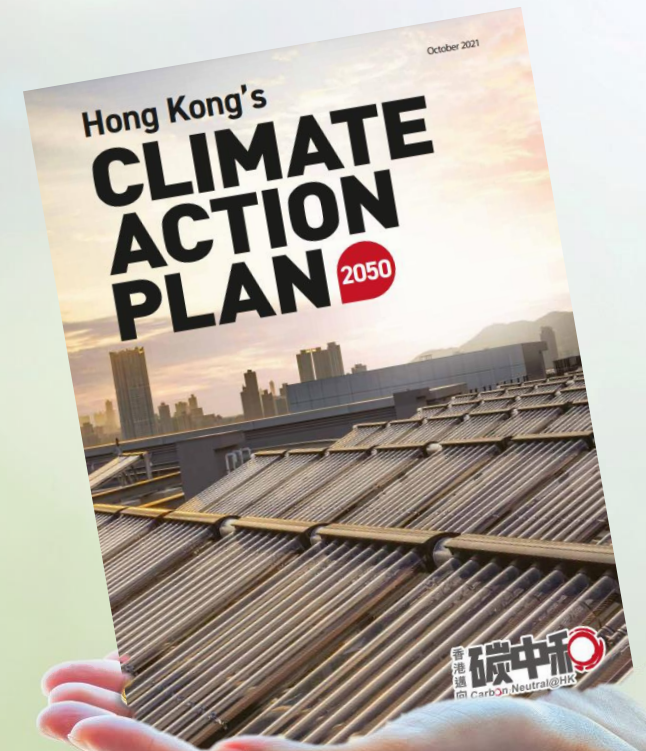
Energy Saving and Green Buildings



Green Transport




Waste Reduction




碳中和
Carbon Neutrality

唯一出路 THE ONLY WAY OUT

Cease Using Coal for Electricity Generation



**Net-zero
Electricity Generation**



2035

A red-bordered rounded rectangle containing icons for coal (with a red 'X' over it), a water drop, wind turbines, solar panels, a lightbulb, and an atom symbol. Below these icons is the text 'Net-zero Electricity Generation'. To the right is a calendar icon with the year '2035' on a red background.



Floating Storage Regasification Units (FSRU)



Transition to
Carbon Zero

Natural Gas

A large, dark-colored industrial pipeline, likely for natural gas, is supported by a series of concrete pillars. The pipeline runs from the foreground into the distance, curving slightly to the right. The pillars are rectangular and spaced evenly along the length of the pipe. The background features a vast, flat landscape with a green field in the foreground and a brown field in the distance, all under a bright blue sky with scattered white clouds. The text 'Natural Gas' is written in white, bold, sans-serif font along the length of the pipe.

Renewable Energy

Renewable Energy (RE)



2035 7.5-10%

(Increase to 15% subsequently)



Restored landfills



Floating PV at Reservoirs



PV at Rooftops

Waste to energy

2023



O-PARK1



O-PARK2



Food waste and sludge co-digestion at Tai Po Sewage Treatment Works



T-PARK

T-PARK



Shatin Sewage Treatment Works

150 TJ (42 M-kWh) of Generation

12,700 households

Waste to energy

Integrated Waste Management Facilities (IWMMF)
Phase 1, Shek Kwu Chau

1,725 TJ (480 M-kWh) of Generation

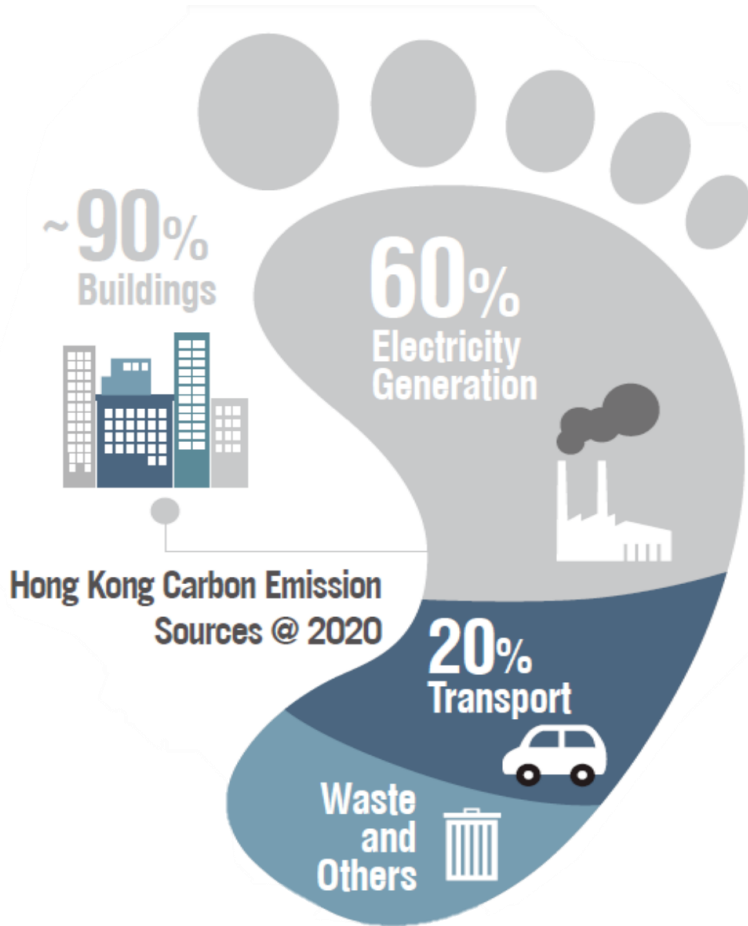
145,000 households



Energy Transition



Energy Efficiency Enhancement



Energy Saving and Green Buildings



COMMERCIAL BUILDINGS
15-20%

(Reduce by 30-40% subsequently)

RESIDENTIAL BUILDINGS
10-15%

(Reduce by 20-30% subsequently)

Buildings Energy Efficiency Ordinance

2012

Enacted
Buildings Energy
Efficiency Ordinance
BEC & EAC 2012



2015

BEC & EAC
2015



2018

BEC & EAC
2018



2021

BEC & EAC
2021 (new)



→ 2050



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Carbon Neutrality
唯一出路 THE ONLY WAY OUT

~10% improvement

Compare to
BEC 2012

~18% improvement

Compare to
BEC 2015

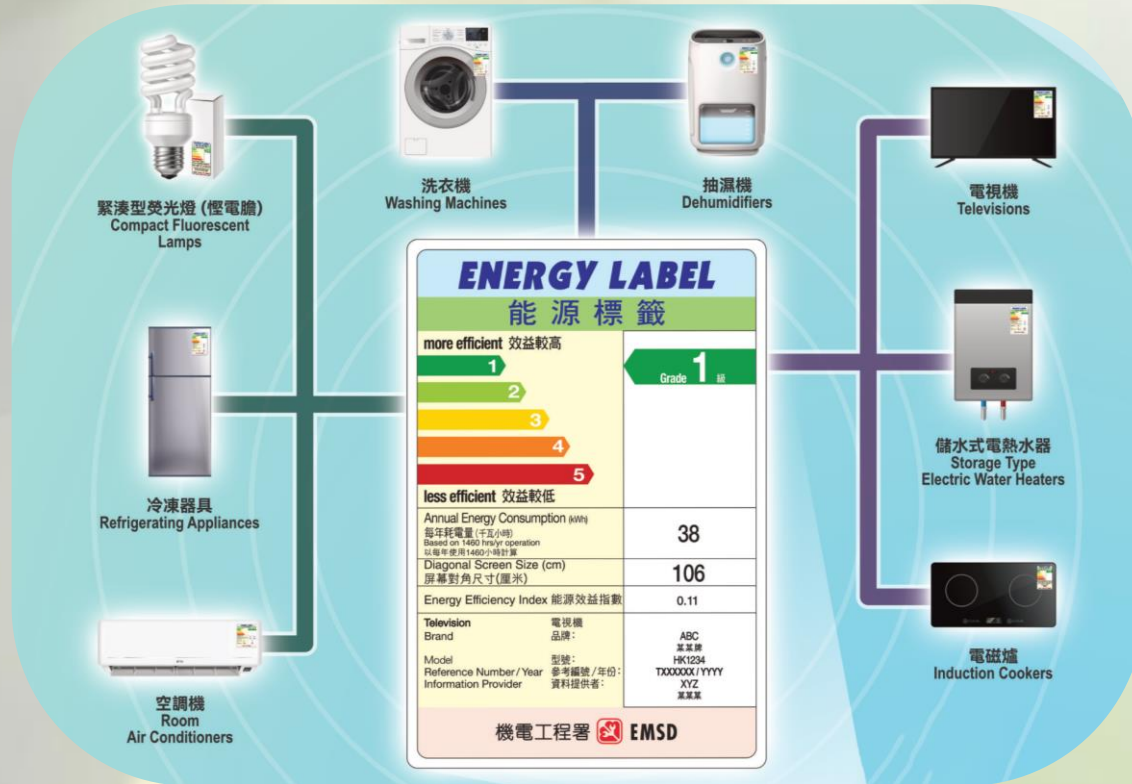
~15% improvement

On-going improvement
(BEC review by
3-year interval)

17,000-19,000 TJ (4.7-5.3B-kWh) Saving

1.5 million households

Mandatory Energy Efficiency Labelling Scheme



930M-kWh Saving

282,000 households

2009
Phase 1

2011
Phase 2

2015
1st Upgrade
of Standards

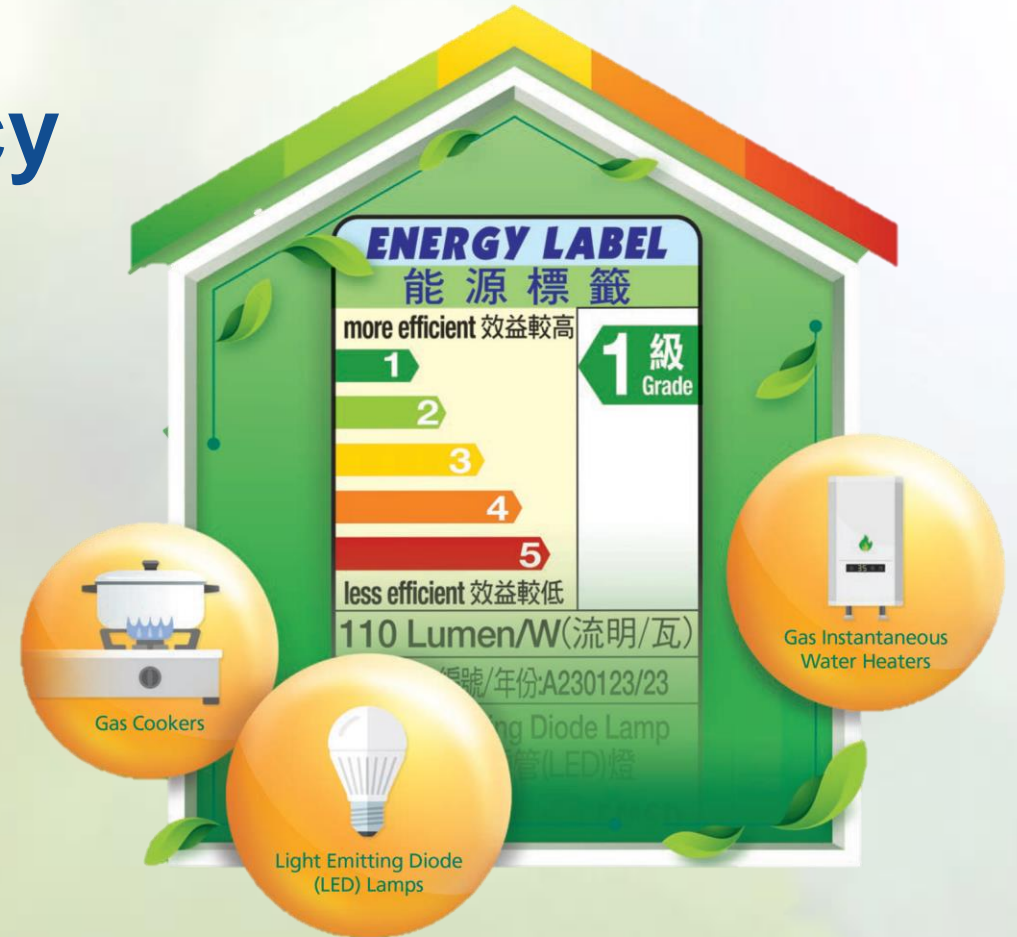
2019
Phase 3

2021
2nd Upgrade
of Standards

Mandatory Energy Efficiency Labelling Scheme

*Additional
576 TJ (160M-kWh) Saving*

Additional 48,000 households



2009
Phase 1

2011
Phase 2

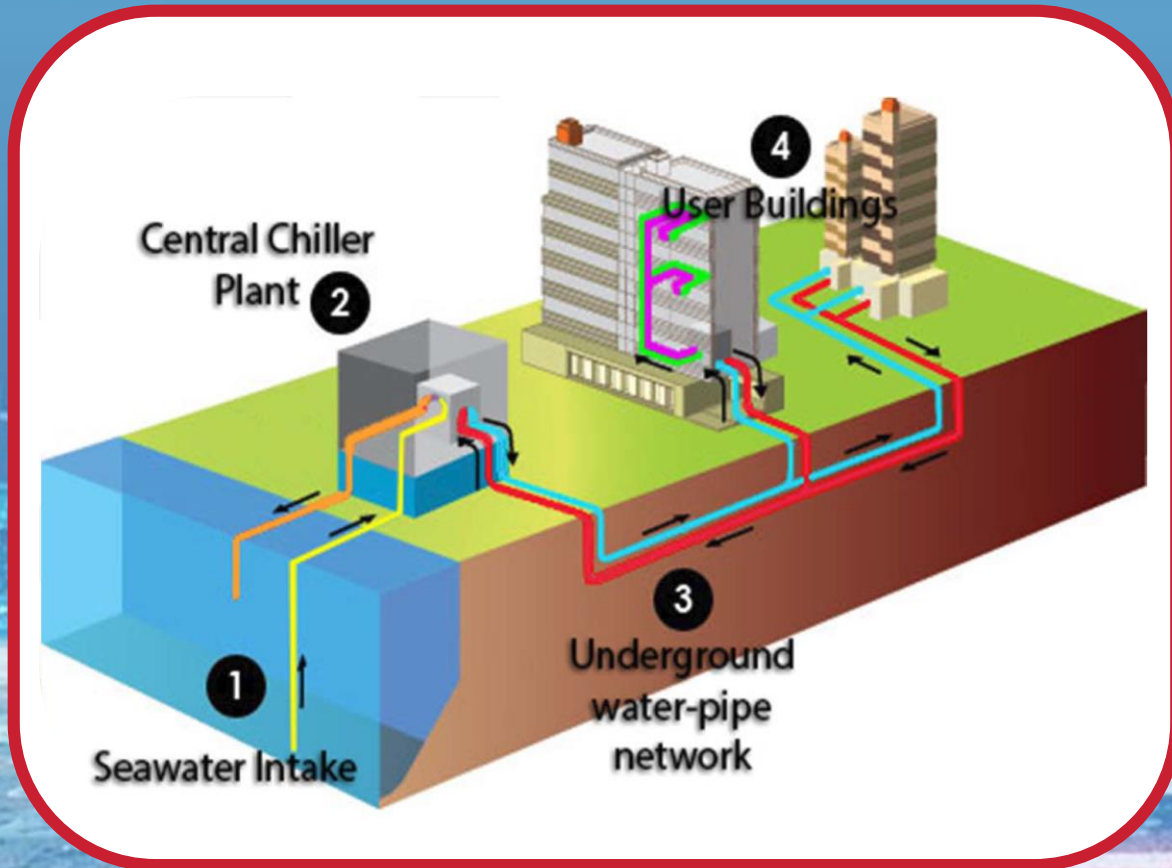
2015
1st Upgrade
of Standards

2019
Phase 3

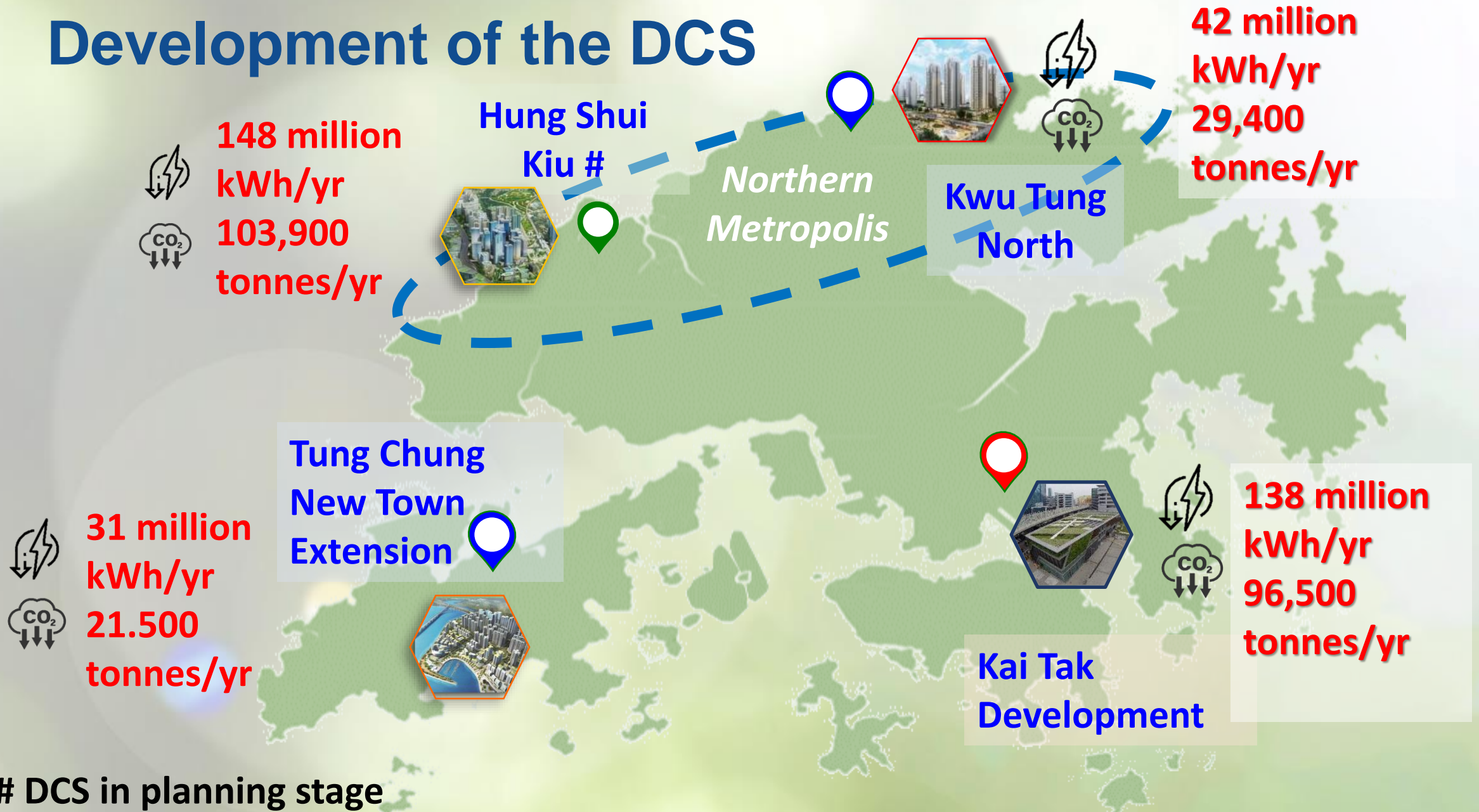
2021
2nd Upgrade
of Standards

2023
Phase 4

District Cooling Systems (DCS)



Development of the DCS



DCS in planning stage

Green Transport - Public transport-oriented policy



Source of image: TD, MTR, hongkongfp.com

Green Transport

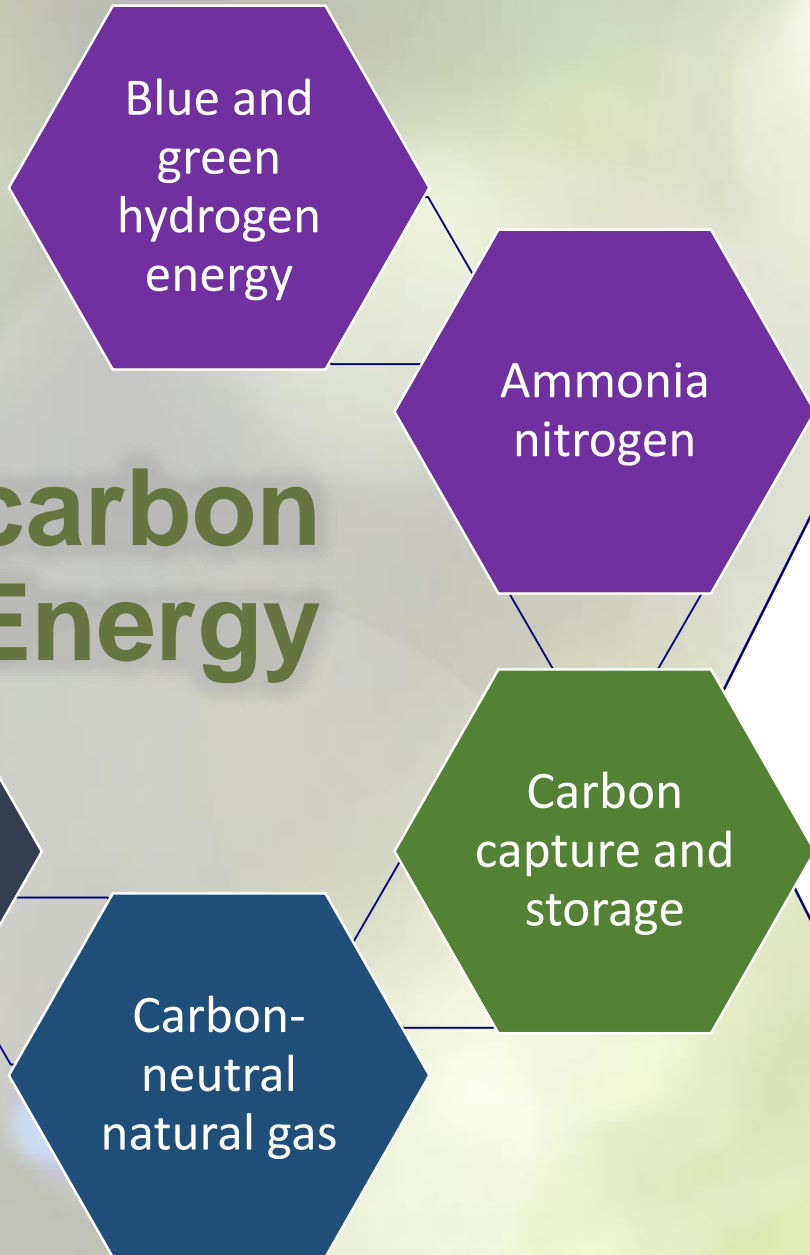
Promoting the Use of Electric Vehicles (EVs)

2022:

53 % of newly registered private cars was EV



Zero-carbon Energy



No emission when burned or used in a fuel cell

Grey Hydrogen
CO₂ emitted into the atmosphere

An icon showing a grey factory with smokestacks emitting a cloud labeled CO₂.

Blue Hydrogen
95-97% CO₂ stored or re-used

An icon of a blue jar containing blue clouds, representing CO₂ capture and storage.

Green Hydrogen
No CO₂ emitted
Ultimate solution

An icon showing a green wind turbine and solar panel next to a green building, representing clean energy production.

Inter-departmental Working Group on Using Hydrogen as Fuel (IWGUHF)

Environmental and Ecology Bureau

Transport and Logistics Bureau

Development Bureau

Security Bureau



EPD



EMSD



FSD



TD



MD



ArchSD



BD



LandsD



PlanD



Hydrogen as FUEL

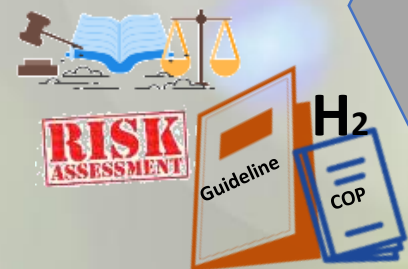


2023: Trials of hydrogen fuel cell electric double-deck buses and heavy vehicles



Risk assessments on hydrogen refilling stations

Development of best practices, codes, standards and regulations



Hydrogen Filling Facility



Hydrogen Fuel cell Electric bus

Green Finance



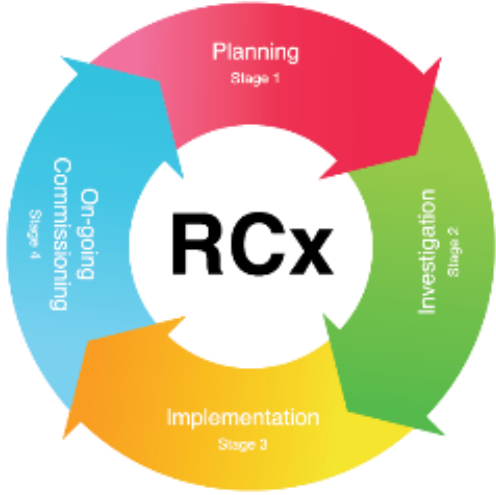
Climate Change Mitigation and Adaptation

Last decade,
over **US\$ 6 billion** to emission reduction measures.

Coming decade,
about **US\$ 30 billion**

Since 2018, Government Green Bond Programme –
around **US\$10 billion**

Regional Collaboration



Memorandum of Co-operation on the Retro-Commissioning of buildings

Memorandum of Cooperation on Building Energy Saving Retrofit in Guangdong-Hong Kong-Macao Greater Bay Area



RCx training programme



Asia-Pacific
Economic Cooperation



Gold Rank
“Pillar Smart Jobs and
Consumers”
2022 the 5th APEC
Energy Smart
Communities Initiative
(ESCI)
Best Practices Awards
Program

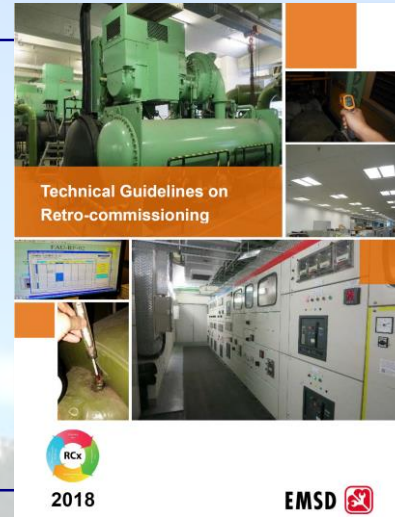


Technical Guidelines and Best Practices

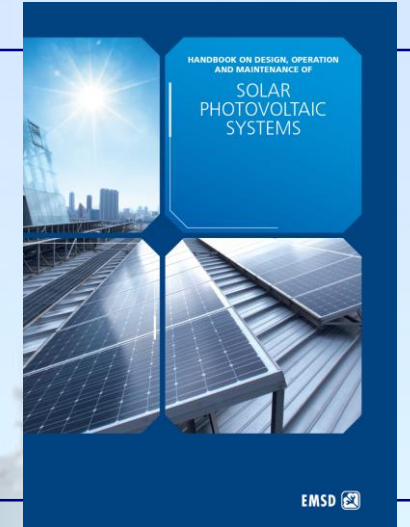
Building Energy Codes



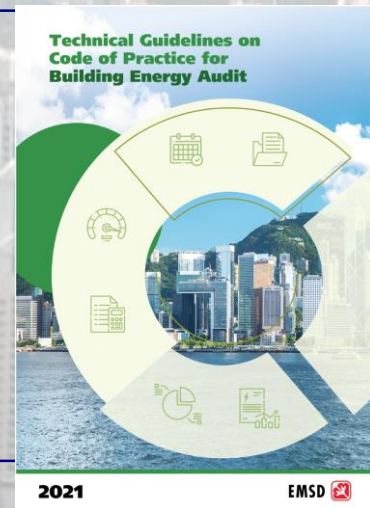
RCx



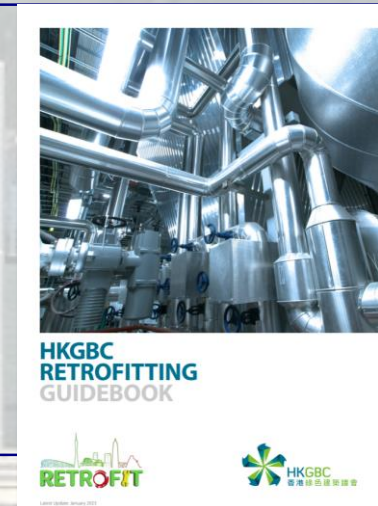
Solar PV Systems



Energy Audit



Retrofitting



Solar Grid Connection





Amalgamate to
Protect our
Environment
Collaboratively



Asia-Pacific
Economic Cooperation



Environment and Ecology Bureau
The Government of the Hong Kong Special Administrative Region

機電工程署
EMSD



EGEEC 60
Hong Kong, China

Thank You