Hong Kong’s Climate Change Strategy and Action Agenda

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# Impacts on Hong Kong

<table>
<thead>
<tr>
<th>Climatic Variables</th>
<th>Observed Change per Decade</th>
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<tbody>
<tr>
<td>Annual mean temperature</td>
<td>Increasing by 0.12 °C (1885 – 2009)</td>
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<tr>
<td>Mean diurnal range</td>
<td>Decreasing by 0.24 °C (1947 -2009)</td>
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<tr>
<td>Hot nights (minimum temperature ≥ 28°C) in Jun-Aug</td>
<td>Increasing by 3.5 nights (1947 – 2009)</td>
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<tr>
<td>Cold days (minimum temperature ≤ 12°C) in Dec-Feb</td>
<td>Decreasing by 2.3 days (1948 – 2009)</td>
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<tr>
<td>Annual rainfall</td>
<td>Increasing by 51 mm (1947 – 2009)</td>
</tr>
<tr>
<td>Heavy rain days (hourly rainfall &gt; 30 mm)</td>
<td>Increasing by 0.4 days (1947 – 2009)</td>
</tr>
<tr>
<td>Mean sea level (Victoria Harbour)</td>
<td>Rising by 26 mm (1954 – 2009)</td>
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## Projected Impacts by end 21st Century

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<tbody>
<tr>
<td>Decadal mean annual temperature (°C)</td>
<td>23.1</td>
<td>24.5 - 32.3</td>
</tr>
<tr>
<td>Hot nights (i.e. minimum temperature of 28°C or above) in Jun-Aug</td>
<td>12.2</td>
<td>22.0 – 68.7</td>
</tr>
<tr>
<td>Very Hot Days (i.e. maximum temperature of 33°C or above) in Jun-Aug</td>
<td>8.2</td>
<td>9.6 – 23.5</td>
</tr>
<tr>
<td>Cold days (i.e. minimum temperature of 12°C or below) in Dec-Feb</td>
<td>16.3</td>
<td>&lt;1</td>
</tr>
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Why should Hong Kong take actions to combat climate change?
Reasons for Taking Actions to Combat Climate Change

- **Responsibility**: we should bear the fundamental responsibility as an emitter.
- **Urgency**: extreme weather conditions will have significant and profound impact on our society, our economy as well as our daily life. Hong Kong should carry out mitigation measures and promote public awareness to reduce carbon emissions.
- **Economic development**: to integrate the low-carbon notion with global economic development and develop a new driver of economic growth.
- **Competitiveness**: to enhance all business and industrial sector’s competitiveness through energy conservation and other low carbon strategies.
- **Positioning**: to play a pivotal role in realizing the vision of transforming the region into a quality living area with Hong Kong as the greenest city of China.
Why does Hong Kong need to adopt a more aggressive carbon intensity reduction target?
Hong Kong’s Target (2020)

With the achievement of the targets:

- Hong Kong’s annual greenhouse gas (GHG) emissions will be reduced from 42 million tonnes in 2005 to 28-34 million tonnes in 2020, representing an absolute reduction of 19-33%.

- Per capita emission will drop from 6.2 tonnes to 3.6 – 4.5 tonnes, representing a reduction of 27-42%.
### Table 7: Comparison with major economies in projected GHG emissions reduction and per capita GHG emissions by 2020

<table>
<thead>
<tr>
<th>Economies</th>
<th>Projected total GHG emissions reduction between 2005 and 2020</th>
<th>Projected per capita GHG emissions by 2020 (in tonnes CO₂-e) #</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>17%</td>
<td>14.7 – 17.4</td>
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<tr>
<td>European Union</td>
<td>10% – 24%#</td>
<td>7.4 – 9.0</td>
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<tr>
<td>Japan</td>
<td>30%</td>
<td>7.1 – 7.8</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>19% – 33%</td>
<td>3.6 – 4.5</td>
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# The range of reduction level represents the range of pledges made by different economies based on different reporting approach.

Source: World Resources Institute
How could Hong Kong achieve the proposed carbon intensity reduction target?
Hong Kong’s Carbon Footprint

- Electricity generation (67%)
- Transport (18%)
- Waste (5%)
- Others
1. Maximising Energy Efficiency

Electricity generation accounts for at least 60% of total GHG emissions, and buildings take up approximately 90% of electricity consumed in Hong Kong.
Proposed mitigation measures:

Expand scope and tighten the requirements of the Building Energy Codes

Expand the use of district cooling or water-cooled air conditioning

Reduce energy demand in new buildings by various means such as tightening the overall thermal transfer value (OTTV) standards and promoting wider adoption of green roofing

Improve energy efficiency in commercial buildings through good housekeeping, information technology products and intelligent building environmental management system

Expand the scope and tighten the energy efficient electrical appliance standards for domestic use

By 2020 major electrical equipments in all new commercial buildings will be up to 50% more energy efficient as compared with 2005 building stock

By 2020 up to 20% of all commercial buildings will be up to 50% better in refrigeration performance compared with buildings using regular air conditioners

By 2020 all new commercial buildings will reduce their energy demand by up to 50% as compared with new buildings in 2005

By 2020 25% of existing commercial buildings can be 15% more energy efficient compared with 2005

By 2020 all appliances sold in the market will be 25% more energy efficient compared with 2005
2. Promoting Green Road Transport

The transport sector in Hong Kong accounts for about 18% of GHG emissions. Road transport dominates the emissions in this sector.

- Wider use of motor vehicles running on alternative fuel
- Implementation of importers’ average fleet efficiency standards
- By 2020, 30% of private cars, 15% of buses and goods vehicles in Hong Kong are hybrid and EVs or other vehicles with similar performance
- New vehicles will be 20% more energy efficient than the 2005 market average
3. Promoting Use of Clean Fuels for Motor Vehicles

Almost all motor vehicles in Hong Kong rely on fossil fuels, including petrol, diesel and liquefied petroleum gas. About 16% of GHG emitted in Hong Kong is derived from these fuels.

- Require petrol and diesel for motor vehicles to be blended with 10% of ethanol and biodiesel respectively.
- Look into the possibilities of better utilising waste cooking oils in producing biodiesel locally.
- Further reduce our reliance on fossil fuels for motor vehicles by 2020.
4. Turning Waste to Energy

Construction and operation of waste-to-energy facilities and better utilisation of landfill gas as an energy source before 2020

Development and full operation of one integrated waste management facility (IWMF), two organic waste treatment facilities (OWTFs), and one sludge treatment facility

As a clean, low-carbon fuel which can help reduce GHG emissions and alleviate the pressure on our landfills

Full utilisation of the recovered landfill gas and gas generated from waste water treatment
5. Revamping Fuel Mix for Electricity Generation

Year 2009:
Coal-dominated Fuel Mix

- Coal: 54%
- Gas: 23%
- Nuclear: 23%

Year 2020:
Proposed Fuel Mix

- Coal: 3-4%
- Gas: ~40%
- Nuclear: ~50%
- RF: <10%


How could Hong Kong deepen the works to combat climate change?
Key Vulnerable Areas

- Biodiversity and nature conservation
- Built environment and infrastructure
- Business and industry
- Energy supply
- Financial services
- Food resources
- Human health
- Water resources
Framework of Adaptation Options

- Monitoring
- Institutional Strengthening and Capacity Building
- Disaster Management and Emergency Planning
- Research and Investigation
- Education and Public Awareness
Thank You