

Activity Worksheet (2)

I. Introduction: Hong Kong's Major Carbon Emission Sources and Decarbonisation Strategies

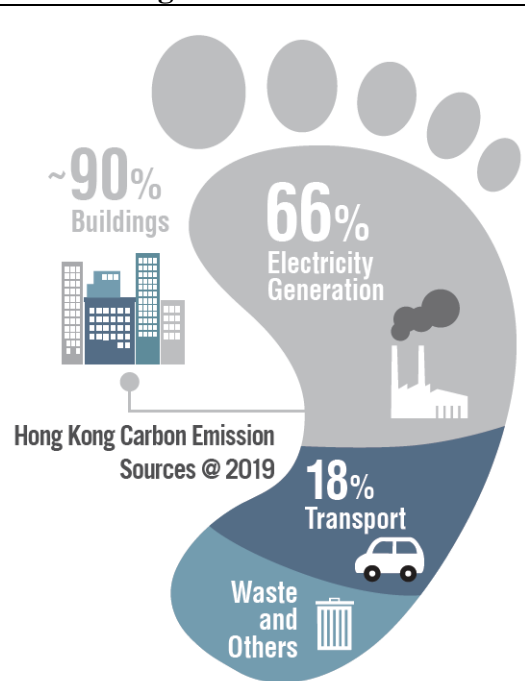
Source A: Hong Kong's Overall Strategies for Combating Climate Change

The Hong Kong economy is predominately supported by the tertiary industry without major energy-intensive industries. In 2019, electricity generation was the largest source of carbon emissions (66%), followed by transport (18%) and waste (7%). These three major emission sources together accounted for over 90% of the total emissions, and are therefore the three most critical areas of our decarbonisation work.

Currently, the local fuel mix for electricity generation mainly relies on fossil fuels such as coal and natural gas. We can remove most of the carbon emissions if we increase the use of zero-carbon energy for electricity generation and gradually phase out fossil fuel vehicles by electrifying the transport sector. For carbon emissions from waste, they are mainly greenhouse gases generated by the decomposition of municipal waste in landfills. As such, we will have to break away entirely from landfilling for municipal waste disposal in order to reduce carbon emissions and avoid utilising our precious land for developing new landfills. As for the remaining carbon emission sources, such as non-road vehicles and refrigerants, we have to identify suitable zero-carbon energy or alternative technologies.

Increasing the use of zero-carbon energy requires the support of technologies as well as finance and land resources. On the other hand, reducing the energy demand can lower the total cost of switching to zero-carbon energy and lessen the financial burden on the public. At present, buildings account for about 90% of the electricity consumption in Hong Kong. As such, improving energy efficiency of buildings to reduce the energy demand will be our top priority in future energy saving efforts.

Based on the above analysis, the strategies for Hong Kong to achieve carbon neutrality before 2050 should comprise: “net-zero electricity generation”, “energy saving and green buildings”, “green transport” and “waste reduction”.



Source: Hong Kong's Climate Action Plan 2050 - https://www.climate-ready.gov.hk/files/pdf/CAP2050_booklet_en.pdf

Question

1. According to Source A and the information collected, what are the major sources of carbon emissions in Hong Kong? How are carbon emissions related to our lives?
2. According to Source A and the information collected, what are Hong Kong's main strategies for reducing carbon emissions? List two strategies that you think are the most effective and explain your views. (Hint: You may refer to sources such as Hong Kong's Climate Action Plan 2050)

II. Discussion: Teachers may divide students into groups, with each group focusing on the discussion and presentation of one of the following topics.

A. Net-zero Electricity Generation

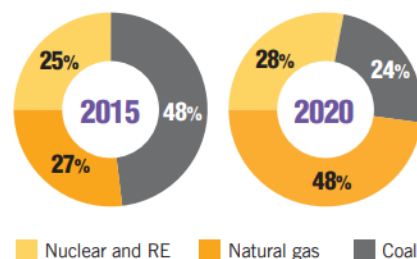
Source B: The Strategies of Net-zero Electricity Generation

Fuel Mix

Electricity generation is the largest contributor to carbon emissions in Hong Kong, accounting for 66% of the total carbon emissions in 2019. Hong Kong has been relying on imported fuel for electricity generation or imported electricity from the Mainland to meet its electricity demand.

Among the fuels in Hong Kong's fuel mix, coal has the highest carbon emissions. The two power companies have gradually replaced coal with natural gas from 2015 to 2020 as required by the Government. The share of coal in the fuel mix has been reduced from around half to less than a quarter, while the share of natural gas has significantly increased from around a quarter to almost half. As a result, carbon emissions were reduced by around 7.3 million tonnes (about 18% of Hong Kong's total carbon emissions) within five years.

Hong Kong's Fuel Mix for Electricity Generation



The Strategies of Net-zero Electricity Generation

At present, fossil fuels, including natural gas and coal, account for over 70% of Hong Kong's fuel mix for electricity generation. Under the overall strategy of achieving carbon neutrality, we must progressively increase the use of zero-carbon energy for electricity generation before 2050. In searching for suitable zero-carbon energy, four important factors should be taken into account: safety, reliability, affordability and environmental performance.



In order to achieve “net-zero carbon emissions for electricity generation” before 2050, we must first change the fuel mix of local power plants. Our interim target is to cease using coal for daily electricity generation by 2035. This is not a remote target as the share of coal has already been reduced to less than one quarter in the fuel mix for electricity generation. Power companies must continue to phase down coal-fired generation units and replace the use of coal with other alternatives such as natural gas and renewable energy (RE) for electricity generation.

On RE development, the Government will grapple with Hong Kong's geographical and environmental constraints in driving the development of RE, and strive to increase its share in the fuel mix from less than 1% at present to 7.5% to 10%, and further increase it to 15% subsequently for electricity generation through facilitating local projects, regional collaboration and joint ventures, etc. Specifically, the Government can strive to develop more advanced waste-to-energy facilities to turn waste into electricity. Moreover, in view of the limited land-based RE resources, we may explore the use of space and potential on the sea to build wind farms. The Government will also continue to take the lead in installing RE systems at government buildings and facilities as well as promoting the Feed-in Tariff (FiT) Scheme to create favourable conditions for the private sector to do so.

Zero-carbon energy refers to energy which does not generate carbon emissions during their production or usage. Zero-carbon energy under application in Hong Kong currently includes solar, wind and nuclear energy. As RE such as solar and wind energy is intermittent by nature, using RE as the main source for electricity generation has its shortcomings. Setting up large-scale electricity storage facilities will take up additional land and reduce efficiency. In view of this, many countries and cities have high hopes for the development of new zero-carbon energy, such as hydrogen produced by RE (green hydrogen).

With the imminent threat of climate change supported by evidence, the whole world must act quickly to reduce carbon emissions, and cannot afford to just wait for the development of new technologies. Having regard to considerations of maturity, reliability and affordability, many countries have included nuclear energy as one of the technologies for helping achieve carbon neutrality by the middle of this century. At present, about a quarter of Hong Kong's electricity is generated from nuclear energy. Apart from developing RE as far as possible, we will continue to increase the use of natural gas with lower carbon emissions and zero-carbon energy to replace coal for electricity generation in the medium term. We will also explore the supply of new zero-carbon energy by collaborating with neighbouring regions to participate in and operate zero-carbon energy projects near Hong Kong through joint ventures and joint development, etc.

To achieve the target of reducing the total carbon emissions by 50% from the 2005 level before 2035, more options are needed for raising the share of zero-carbon energy in the fuel mix for electricity generation to about 60% to 70%.

Hong Kong Proactively Develops Renewable Energy



The surplus electricity exported to the public grid by T•PARK, which has a treatment capacity of 2 000 tonnes of sludge per day, is sufficient for use by about 4 000 households annually.



After the launch of the FiT Scheme, solar energy generation systems have been installed on the rooftops of many residential units.



The solar energy generation system installed by the Housing Authority at public rental housing estates



The Kowloon Motor Bus Company (1933) Limited and Long Win Bus Company Limited have installed solar panels on bus shelters to supply electricity for lighting at bus stops



Under the Solar Harvest Scheme, the Electrical and Mechanical Services Department installs solar energy generation systems for schools and social welfare organisations for free. Students can learn about carbon reduction from first-hand experience of the RE systems at their schools.



The floating solar energy generation system at Plover Cove Reservoir. The cool and open environment of the reservoir can enhance the efficiency of the solar energy generation system in electricity generation by around 20% as compared with those normally installed on roofs or ground.

Source:

- Hong Kong's Climate Action Plan 2050 - https://www.climate-ready.gov.hk/files/pdf/CAP2050_booklet_en.pdf
- 2021 Policy Address – VI. Building a Liveable City - <https://www.policyaddress.gov.hk/2021/eng/p95.html>
- HK RE Net - https://re.emsd.gov.hk/english/solar/solar_ph/solar_ph_ep.html

Question

3. According to Source B, what challenges does Hong Kong face in developing RE?
4. According to Source B, which zero-carbon energy sources are suitable for Hong Kong to help achieve the goal of carbon neutrality in electricity generation?

Conclusion

The Strategies and Targets of Net-zero Electricity Generation

Carbon neutrality in electricity generation	The Government will achieve the long-term target of net-zero electricity generation before 2050 by increasing zero-carbon electricity supply through RE development, exploring new energy sources for electricity generation (e.g. trial of hydrogen energy for electricity generation), and regional cooperation (e.g. seeking joint investment and development opportunities for participating in and operating zero-carbon energy projects near Hong Kong).
Phasing out coal-fired electricity generation	By 2035, we will cease using coal for daily electricity generation and will only keep it for providing backup support. Coal will be replaced by natural gas and zero-carbon energy (viz. energy which does not generate carbon emissions during their production or usage, such as RE and nuclear energy) for electricity generation.
Developing RE	The Government will strive to grapple with Hong Kong's geographical and environmental constraints in driving the development of RE by taking the lead in installing RE systems at various buildings and facilities, and developing more advanced waste-to-energy facilities. The Government will further consider measures to facilitate the development of RE by the private sector which can, coupled with the FiT Scheme, foster the development of RE. In addition, the Government and the two power companies are reviewing proposals to develop wind farms. The Government will strive to increase the share of RE in the fuel mix for electricity generation from less than 1% at present to 7.5% to 10% by 2035, and further increase it to 15% subsequently through facilitating local projects, regional cooperation and joint ventures, etc.
Generating electricity with zero-carbon energy	The Government will explore and try out the use of different types of zero-carbon energy for electricity generation with a view to adopting them in Hong Kong when the technologies become relatively mature. The Government will also explore ways to enhance regional cooperation to increase the supply of zero-carbon energy. The target is to increase the share of zero-carbon energy in the fuel mix for electricity generation to around 60% to 70% before 2035, and to achieve net-zero electricity generation in Hong Kong before 2050 with the support of continuous technological advancement in using zero-carbon energy for electricity generation.

B. Energy Saving and Green Buildings

Source C: The Targets and Strategies of Energy Saving and Green Buildings in Hong Kong's Climate Action Plan 2050

Being an international financial and commercial centre, the majority of Hong Kong citizens' daily activities take place in skyscrapers. The resulting use of air-conditioners, lifts, lighting and various electrical appliances consumes a large amount of energy. At present, buildings account for about 90% of the electricity consumption in Hong Kong. As such, improving energy efficiency of buildings to reduce the energy demand will be our top priority in future energy saving efforts.

The Government is committed to managing electricity demand and promoting energy conservation. With the implementation of various energy saving measures, it is estimated that about 2.1 billion kWh of electricity was conserved in 2020 as compared with 2015 (-4.7%), and about 1.45 million tonnes of carbon emissions were reduced (i.e. about 3.6% of Hong Kong's total carbon emissions).

Electricity conserved from implementing energy saving measures (2020 as compared with 2015)

Energy saving measures	Electricity conserved (million kWh)
Measures related to the Buildings Energy Efficiency Ordinance	1 500 (72.3%)
Measures related to the Mandatory Energy Efficiency Labelling Scheme	450 (21.7%)
Measures related to the Government's energy saving targets	115 (5.5%)
District cooling system	9 (0.4%)
Total	2 074 (i.e. around 2.1 billion kWh of electricity)

Note: Do not add up to 100% due to rounding



The Hong Kong Children's Hospital has incorporated a number of environmentally-friendly and energy-efficient installations, and has achieved Platinum rating under BEAM Plus New Buildings Version 1.2.



District Cooling System at Kai Tak Development

Photo source:
Architectural Services Department

"Energy Saving and Green Buildings" is one of the four major decarbonisation strategies in Hong Kong's Climate Action Plan 2050. Buildings account for about 90% of Hong Kong's total electricity consumption, and the greenhouse gases generated account for more than 60% of Hong Kong's total emissions. Promoting green buildings can help combat climate change. The goal of the Government is to reduce the electricity consumption of commercial buildings by 30% to 40% and that of residential buildings by 20% to 30% from the 2015 level by 2050, and to achieve half of the above targets by 2035.

To this end, the Government will explore the possibility of expanding the scope of regulation regarding the energy efficiency standards of building services installations, consider conducting energy audits more frequently and mandating the implementation of identified energy management opportunities, and strengthen the promotion of retro-commissioning. At the same time, the Government will look into incorporating district cooling systems (DCSs) in more new development areas, and make full use of green innovation and technology to enhance the performance of DCSs. The Government will also keep the Mandatory Energy Efficiency Labelling Scheme under review and consider setting a minimum energy efficiency requirement for regulated appliances, etc.

Source: Hong Kong's Climate Action Plan 2050 - https://www.climate-ready.gov.hk/files/pdf/CAP2050_booklet_en.pdf

Source D: Energy Efficiency Labelling Scheme and Energy Saving in Private Buildings

Energy Efficiency Labelling Scheme

The Government has implemented the Mandatory Energy Efficiency Labelling Scheme (MEELS) since 2009, which currently covers eight types of electrical products including room air-conditioners and televisions. These electrical appliances account for about 50% of the total energy consumption in the residential sector. The MEELS can save about 930 million kWh of electricity each year and reduce about 650 000 tonnes of carbon emissions (i.e. about 1.6% of Hong Kong's total carbon emissions). The Government's latest proposal is to expand the scope of the MEELS to include three types of products, namely light emitting diode (LED) lamps, gas cookers and gas instantaneous water heaters. It is estimated that an additional 568.8 terajoules of energy (i.e. about 160 million kWh of electricity) can be saved each year and about 75 000 tonnes of carbon emissions (i.e. about 0.2% of Hong Kong's total carbon emissions) can be reduced. By then, household appliances covered by the MEELS will account for about 80% of the total energy consumption in the residential sector, a big jump from about 50%.



Energy Saving in Private Buildings

Since the implementation of the Buildings Energy Efficiency Ordinance (Cap. 610) in 2012 that regulates the energy efficiency standards of four key types of building services installations (i.e. air-conditioning, lighting, electrical installations, lifts and escalators, etc.) in various types of buildings, the Government has reviewed the standards once every three years. With the implementation of the above ordinance, it is expected that all regulated new and existing buildings in Hong Kong can conserve about 1.5 billion kWh of electricity in 2020 (as compared with 2015), with around 1.05 million tonnes of carbon emissions reduced (i.e. about 2.6% of Hong Kong's total carbon emissions).

Source: Hong Kong's Climate Action Plan 2050 - https://www.climateready.gov.hk/files/pdf/CAP2050_booklet_en.pdf

Question

5. According to Source C and the information collected, why are “energy saving and green buildings” critical to Hong Kong in achieving carbon neutrality?
6. According to Sources C, D and the information collected, what “energy saving and green buildings” measures have been taken by the Government?

C. Green Transport

Source E: The Strategies of Green Transport

Zero Carbon Emissions from Transport

The development of green transport helps improve air quality and is vital to achieving zero carbon emissions in the transport sector. The Government strives to achieve the long-term target of zero carbon emissions from vehicles and the transport sector before 2050 through the electrification of vehicles and ferries, development of new energy public transport and measures to improve traffic management.

Phasing Out Fuel-propelled Vehicles Progressively

In the Hong Kong Roadmap on Popularisation of Electric Vehicles announced in 2021, the Government set the target to cease the new registration of fuel-propelled and hybrid private cars in 2035 or earlier. The Government will proactively develop a charging network and supporting infrastructure to promote the development of electric vehicles, and will phase out fuel-propelled vehicles progressively.

Trial and Application of New Energy Transport

The Government will actively promote the development of various electric and other new energy public transport and commercial vehicles, with a view to setting a more concrete way forward and timetable in around 2025. The Government collaborates with the franchised bus companies and other stakeholders to test out hydrogen fuel cell electric buses and heavy vehicles. In addition, the Government will subsidise ferry operators to conduct trials for electric and hybrid ferries.



Hong Kong's first hydrogen fuel cell electric double-decker bus

Maintaining a Public Transport System with Railway as the Backbone

The Government will continue the current approach of maintaining a public transport system with railway as the backbone, and promote cycling for short-distance commuting and enhance walkability. The Government will also adopt different new technologies as well as traffic management measures, such as the "Free-flow Tolling System" and "congestion charging" with a view to charging different toll levels according to the traffic condition of the tunnels and the control area at different times.

Source: Hong Kong's Climate Action Plan 2050 - https://www.climate-ready.gov.hk/files/pdf/CAP2050_booklet_en.pdf

Source F: The Overall Challenges of Promoting the Use of Electric Vehicles in Hong Kong

Hong Kong has an extremely high population density and compact urban form. Adoption of electric vehicles (EVs) in Hong Kong comes with challenges unique to the city, including setting up appropriate charging infrastructure and identifying models of EVs that are suitable for local application. As Hong Kong's roads are relatively narrow, there is not much space for installation of roadside charging facilities. Unlike other places where people live in houses or less populated setting, most buildings in Hong Kong are high-rises with comparatively less number of parking spaces. Given that these buildings are usually of multiple ownership and under third-party property management, Hong Kong's EV owners are often required to obtain consent from other owners of the same premises for the installation of charging facilities at parking spaces, and may encounter other sticky issues including the concern about electricity supply and installation costs of charging infrastructure.

On the other hand, as Hong Kong has a hilly terrain, vehicles are often required to run on slopes. The hot and humid weather also demands air-conditioning for most of the time. Hence, EVs in Hong Kong need to have greater battery capacity than that in many other places.

In Hong Kong, 90% of the total passenger trips each day are made through public transport. Hence, public transport has long operating hours and travel distance every day. For example, a taxi is generally being operated for over 20 hours and over 400 km on a daily basis; whereas more than 95% of public buses adopt large double-deck buses with large capacity to cope with the passenger demand and mitigate traffic congestion. Similar double-deck buses are rarely used in other places and there is yet supply that can match Hong Kong's various operational needs. EV technologies suitable for heavy transport are also under development around the globe.

Source: Hong Kong Roadmap on Popularisation of Electric Vehicles -

https://www.eeb.gov.hk/sites/default/files/pdf/EV_roadmap_eng.pdf

Question

- 7. According to Sources E, F and the information collected, what strategies are employed by the Government to promote “green transport”? What are the factors affecting the popularisation of EVs?**

D. Waste Reduction

Source G: The Strategies and Targets of the Government in Promoting Waste Reduction

The two existing landfills in Hong Kong receive an average of 11 000 tonnes of municipal solid waste (MSW) in total daily. Regarding the greenhouse gas (GHG) emissions associated with waste management, the decomposition of MSW in landfills is the major source. Waste management has therefore become the third major source of GHG emissions locally in recent years. To move away from the reliance on landfills for MSW disposal by around 2035 and to achieve carbon neutrality in waste management before 2050, the Government is not only committed to promoting waste reduction at source and various means of recycling, but also developing sufficient waste-to-energy facilities with a view to transforming unavoidable and non-recyclable MSW into resources comprehensively.

Promoting Waste Reduction and Recycling

The Government will implement MSW charging as well as other waste reduction and recycling initiatives, including striving to expand and enhance the central collection service and the community recycling network for food waste, waste plastics and waste paper (e.g. setting up recycling stores and recycling spots in all districts) to encourage different sectors and members of the public to practise waste reduction and recovery. The medium-term target is to gradually reduce the per capita MSW disposal by 40% to 45% and raise the recovery rate to about 55%.



Recycling Stores

Developing Waste-to-energy Facilities

The Government will strive to develop adequate advanced waste-to-energy facilities by 2035 with a view to moving away from reliance on landfills for municipal waste disposal. The Government will continue to expand food waste recycling infrastructure, and make use of the biogas generated during the food waste treatment process as an additional source of renewable energy. In addition, landfill gases from the three operating landfills will continue to be recycled to provide thermal energy and electricity for landfill operation and export to the town gas supply network and power grids to provide energy for the public.

Controlling the Use of Single-use Plastics

The Government will continue to adopt a multi-pronged approach to support the turning of waste plastics into resources, including formulating suitable policies and regulations, stepping up publicity, and developing further waste plastics recycling supporting facilities, as well as promoting the replacement of single-use plastics with reusable or alternative materials. In addition to implementing the Plastic Shopping Bag Charging Scheme and planning to implement the Producer Responsibility Scheme on Plastic Beverage Containers, the Government will regulate disposable plastic tableware and other single-use plastic products in phases.

Source:

- *The Government of HKSAR Press Release - EPD to develop new waste-to-energy facilities to gradually phase out landfills - <https://www.info.gov.hk/gia/general/202201/25/P2022012500436.htm?fontSize=1>*
- *Hong Kong's Climate Action Plan 2050 - https://www.climate-ready.gov.hk/files/pdf/CAP2050_booklet_en.pdf*

Source H: Waste-to-energy / Waste-to-resources Facilities in Hong Kong

		
<p>T • PARK</p>	<p>WEEE • PARK</p>	<p>O • PARK 1</p>
<p>Opened in 2015, T•PARK adopts advanced incineration technology to treat up to 2 000 tonnes of sewage sludge from sewage treatment works each day. Apart from self-sustaining the operation of the facility, surplus electricity is exported to the power grid, supporting the electricity need of about 4 000 households annually. Nearly 2 million tonnes of sewage sludge have been treated so far.</p>	<p>Commenced full operation in March 2018, WEEE•PARK can treat up to 30 000 tonnes of regulated WEEE (including air-conditioners, refrigerators, washing machines, televisions, computers, printers, scanners and monitors) annually, turning them into valuable secondary raw materials. So far, more than 50 000 tonnes of regulated WEEE have been processed.</p>	<p>Commenced operation in July 2018, O•PARK1 adopts anaerobic digestion technology that can convert 200 tonnes of food waste into electricity each day. Apart from self-sustaining the operation of the facility, surplus electricity is exported to the power grid, supporting the electricity need of about 3 000 households annually. Around 85 000 tonnes of food waste have been recovered for transforming into energy so far.</p>
<div data-bbox="191 1167 321 1293">  </div> <p>Daily treatment capacity of sewage sludge for turning into electricity: 2 000 tonnes</p> <div data-bbox="191 1419 321 1545">  </div> <p>Number of households supported by surplus electricity each year: 4 000</p>	<div data-bbox="613 1167 743 1293">  </div> <p>Annual treatment capacity of WEEE: 30 000 tonnes</p> <div data-bbox="613 1419 743 1545">  </div> <p>Accumulated number of electrical appliances (which would have been disposed of) repaired and donated to people in need: 3 500+</p>	<div data-bbox="1036 1167 1166 1293">  </div> <p>Daily treatment capacity of food waste for turning into electricity: 200 tonnes</p> <div data-bbox="1036 1419 1166 1545">  </div> <p>Number of households supported by surplus electricity each year: 3 000</p>



Y • PARK

The service contract to operate Y•PARK has been awarded. Y•PARK is expected to commence operation in 2021, with a handling capacity of around 11 000 tonnes of yard waste in the first year (i.e. 30 tonnes per day), which will be gradually increased to an annual average of around 22 000 tonnes (i.e. 60 tonnes per day). The yard waste collected will be screened, sorted and treated for transforming into various useful materials such as compost. Some wood materials will also be provided to relevant industries to support their operations.



Daily treatment capacity of yard waste:

The 1st year:
11 000 tonnes

Subsequent years
(annual average):
22 000 tonnes



O • PARK 2

Currently under construction and scheduled to commence operation by 2024, O•PARK2 can transform up to 300 tonnes of food waste into electricity each day. Apart from self-sustaining the operation of the facility, surplus electricity is exported to the power grid, supporting the electricity need of about 5 000 households annually.



Daily treatment capacity of food waste for turning into electricity:
300 tonnes



Number of households supported by surplus electricity each year:
5 000

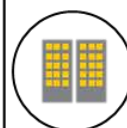


I • PARK

Construction works of I•PARK has commenced and it is anticipated that it can come into operation by 2025. I•PARK is a waste-to-energy facility that adopts advanced incineration technology to treat 3 000 tonnes of MSW daily. Electricity will be generated from the heat energy produced during the process, thereby contributing to the reduced use of fossil fuel for electricity generation, and avoiding methane generation by waste decomposing in landfills, thus helping to reduce local greenhouse gas emission to combat climate change.



Daily treatment capacity of MSW:
3 000 tonnes



Number of households supported by surplus electricity each year:
100 000

Source:

- Waste Blueprint for Hong Kong 2035 - https://www.eeb.gov.hk/sites/default/files/pdf/waste_blueprint_2035_eng.pdf
- GovHK Key Government Renewable Energy Projects - <https://www.gov.hk/en/residents/environment/sustainable/renewable/projects.htm>

Source I: Municipal Solid Waste Charging

The policy objective of the Waste Disposal (Charging for Municipal Solid Waste) (Amendment) Bill 2018 (the Amendment Bill) is to create incentives to drive behavioural changes in waste generation and hence reduce overall waste disposal through a quantity-based waste charging approach. With reference to the experiences of other major cities, quantity-based waste charging is an effective tool to achieve waste reduction. For example, waste disposal in Seoul and Taipei City dropped by about 30% in the initial period after quantity-based waste charging was introduced. Having regard to the support received from the public consultation concluded in 2012, the Government has adopted the introduction of municipal solid waste (MSW) charging as a major tool of our waste reduction policy.

As mentioned by the Chief Executive in the 2020 Policy Address, waste reduction is a global trend and is conducive to mitigating climate change. MSW charging, as the main driving force behind waste reduction, will not only drive enterprises and the public to practise waste reduction and recycling, but also facilitate the sustainable development of recycling-related industries and the creation of green job opportunities when the quality and quantity of recyclables collected is enhanced.

The Environment Bureau announced the Waste Blueprint for Hong Kong 2035 in February 2021. Setting out the vision of “Waste Reduction · Resources Circulation · Zero Landfill”, the blueprint outlines the strategies, goals and measures to tackle the challenge of waste management up to 2035. Under the vision, the Government will work with the industry and the community to move towards two main goals. The medium-term goal is to gradually reduce the per capita MSW disposal rate by 40 to 45% and raise the recovery rate to about 55% by implementing MSW charging, together with the launch of other policies and legislation, waste reduction and recycling initiatives, as well as publicity and educational campaigns. The long-term goal is to move away from the reliance on landfills for direct waste disposal by developing adequate waste-to-energy facilities.

Building upon the existing MSW collection and disposal system, the Amendment Bill proposed that MSW charges be levied through the dual modes: (i) by designated bags; and (ii) by weight (gate-fee). “Charging by designated bags” is applicable to most residential buildings, village houses, street level shops and institutional premises. Members of the public are required to purchase designated bags to wrap their waste properly or affix with a designated label before disposal; “Charging by weight” is mainly applicable to waste disposed of by commercial and industrial premises. A gate-fee calculated based on weight will be charged at refuse transfer stations or landfills.

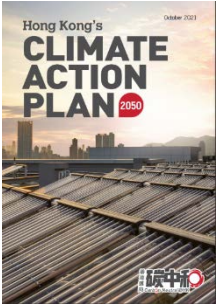

Source: Speech of the Secretary for the Environment at the Second Reading debate on the Waste Disposal (Charging for Municipal Solid Waste) (Amendment) Bill 2018 (Chinese only) -

<https://www.info.gov.hk/gia/general/202108/26/P2021082600266.htm>

Question

- 8. According to Sources G, H and I, why does the Government advocate the development of waste-to-energy facilities (such as the Organic Resources Recovery Centres, T·PARK, advanced waste incineration facilities) instead of relying on landfills for municipal waste disposal?**
- 9. According to Source I and your knowledge, how can MSW charging help reduce waste? Apart from recycling, how can you reduce waste as an individual?**

References:

Source	Descriptions	QR code
<p>Hong Kong's Climate Action Plan 2050</p>  The image shows the cover of the 'Hong Kong's Climate Action Plan 2050' report. The title 'CLIMATE ACTION PLAN' is prominently displayed in large, bold, black letters, with '2050' in a red circle below it. The background features a cityscape with a large, corrugated metal roof in the foreground. The text 'Hong Kong's' is at the top left, and 'October 2021' is at the top right. The logo of the Environmental Protection Department is at the bottom right.	<ul style="list-style-type: none">● The Government launched Hong Kong's Climate Action Plan 2050 on 8 October 2021, setting out the vision of “Zero Carbon Emissions · Liveable City · Sustainable Development”, and outlining the strategies and targets for combating climate change and achieving carbon neutrality. For details, please refer to the Action Plan.	 A square QR code is centered in the cell, which likely links to the full text of the Climate Action Plan 2050 report.