

Hong Kong's Fight for Climate Change: Facts, Challenges, and Opportunities

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Abstract

In this article, we discuss the challenges and opportunities on Hong Kong's strategies for combating climate change in four sectors including power generation, building, waste management, and finance. We highlight the importance of improving its climate change mitigation capacity through regional collaboration.

Hong Kong is a coastal city on the eastern Pearl River Delta in China. With a population density of 6,754.04 people per square kilometre in 2020, Hong Kong is one of the most densely populated cities in the world. Typhoons occur quite often, which sometimes result in floods or landslides. According to the report of Hong Kong Observatory, there were 222 tropical cyclones during the period of 1980-2018. What's more, the numbers of tropical storms and typhoons with No. 8 warning signals are increasing over the past decade, which evidences the intensified consequences of climate change in Hong Kong (Zhou & Zhang, 2021).

To mitigate climate change and the emissions of greenhouse gases, Hong Kong has set an ambitious target of reducing carbon intensity by up to 70% by 2030 from 2005 level and has committed to be carbon neutral by 2050 through its Climate Action Plan 2050 announced on October 8th, 2021. It outlines the strategies and targets for combating climate change and achieving carbon neutrality in four sectors including power generation, building, transport, and waste management.

Climate change induces water scarcity, the remaining intermittent concerns of green energy, could slow down the transition towards renewable energy (An & Zhang, 2021). However, we are confident in Hong Kong's energy future. One of the four major decarbonization strategies in Hong Kong's Climate Action Plan 2050 is to achieve net-zero electricity generation before 2050. CLP, one of the two utility providers in Hong Kong, has taken substantial efforts in mitigating its environmental impacts. Through a joint venture between the Guangdong Nuclear Investment Co. Ltd and CLP, it can provide carbon-free electricity to customers in Hong Kong, accounting for over 20% of the total electricity supply in Hong Kong. Another initiative on climate change mitigation is the Renewable Energy Certificates (RECs), which offer a simple and flexible option for its customers to support clean energy generation. We believe that the power section in Hong Kong has long been ready for the low-carbon transition.

In the past four decades, Hong Kong has seen its constant increase in the electricity consumption, where consumption by buildings accounts for about two thirds of the total. Among all the electricity con-

sumption sources, residential and commercial buildings have been the top two end consumers which accounts for 64% and 26% respectively of the total building electricity end-use in Hong Kong in 2016 (Sheng et al., 2020). This makes buildings particularly require attentions in Hong Kong. Hong Kong utilizes the Overall Thermal Transfer Value (OTTV), which is an index explaining the overall heat transfer rate through building envelope, to control building energy consumption. However, according to Sheng et al. (2020), current OTTV regulation practice cannot help Hong Kong to achieve its reduction target in 2030. Entirely relying on stricter OTTV legislations makes it difficult to meet the goal of reducing to 70% of the building electricity consumption in the 2005 level. More efficient policy strategies would be required to offset electricity consumption increase.

Waste management is also an important aspect for the successful curbing emissions and environmental pollutions. In 2020, the daily disposal of MSW at landfills has reached 1.44 kg/person, ranked 4th in the East Asia and Pacific regions. According to the Environmental Protection Department of Hong Kong's 2019 report, Hong Kong generated 5.67 million tonnes of MSW in 2019; 29% of the MSW was recovered, while the rest was disposed of in landfills. There are three landfill plants in service in Hong Kong. However, according to the waste hierarchy, waste should always be reduced, reused, and recycled before moving to the stage of recovery and disposal. Waste reduction and recycling should remain important considerations in a city's waste management. It is encouraging that the Hong Kong Legislative Council recently passed the city's first and long-awaited waste disposal bill, 16 years after it was first proposed. The proposed Hong Kong Waste Charging Scheme requires its residents to pay a tax on the garbage they generate, in line with the "polluter-pays" principle where charges are based on the quantity of waste generated. This is, however, only the first step, advances in environmental education and users' participation are necessary, as these are the critical factors affecting the effectiveness of the waste management system.

As the financial centre in the region of Asian Pacific region, the business sector has long tradition of incorporating environmental sustainability into strategy. HK can further extend its impact through the one belt one road initiative. Most projects in the Belt and Road initiative are for infrastructure construction, which can have

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a strong impact on the environment. In 2020, China's overseas investment on wind, solar and hydropower overtook that on coal and other fossil fuels for the first time since the launch of the Belt and Road Initiative. Hong Kong could utilize its financial role to promote green finance and investment.

Corporations have taken actions in responses to the call for reporting climate-related financial risks advised by the task forces of The Financial Stability Board, the so-call TCFD reporting. In fact, firms and financial sectors in HK have rich experience on such sustainability related disclosure. Hong Kong's Securities and Futures Commission (SFC) has issued new guidelines on enhanced disclosures required for Hong Kong-authorized funds incorporating environmental, social and governance factors as their key investment focus (ESG funds). Meanwhile, the government must improve information statistics and data disclosure across all asset classes and financial services data shall be provided to support for green financial policy evaluation publicly.

There are still plenty of room for Hong Kong to further improve its capacity in climate change mitigation. It has been hotly debated that regional collabora-

tion within the Greater Bay Area (GBA) of China is the key for Hong Kong's success in its transition towards carbon neutrality. With a population of over 67 million, GDP in the GBA region reaches 1000 billion USD, higher than that of New York metropolitan area. As the national long-term strategies, the deep integration of the Greater Bay Area Initiative and the Belt and Road Initiative will lead the GBA to be better integrated in terms of collaboration and know-how exchange, to promote the region's capacity in fighting for climate change.

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