



The “Hong Kong’s Climate Action Plan 2030+” outlined the medium and long term work against climate change and carbon reduction objectives, with an aim to reduce Hong Kong’s carbon emission by 65% to 70% by 2030 using 2005 as the base. We have introduced measures to reduce energy consumption and use of fossil fuel to help achieving these targets.

Energy Saving in Public Lighting

To align with the objectives of reducing carbon intensity with the vision to further enhance the energy efficiency of public lighting in Hong Kong, we launched the Light Emitting Diode (LED) public lighting replacement programme in 2017/18 to replace the conventional road lights, gantry sign and roadside floodlights, and fluorescent tubes at footbridges and subways with LED luminaires. We aim to provide safe, high quality, reliable and sustainable public lighting services to the public.

Advantages of LED Luminaries

As compared with conventional High Pressure Sodium lights, LED lights are of more energy-saving, durable, environmentally friendly and higher colour rendering. In addition to savings in operating and maintenance costs, LED lights can improve the performance and reliability of public lighting, and provide road users with a safe and high quality lighting environment.



Public lighting for highways



A footbridge with LED lights

Target and Achievement

We target to replace 6,500 road lights and 1,500 fluorescent tubes at footbridges and subways with LED lights each year, and replace a total of 4,900 gantry sign and roadside floodlights with LED lights.

From 1 April 2022 to 31 March 2023, we replaced about 27,000 lighting points which were well above our annual target. We also accomplished the replacement target of a total of 4,900 gantry sign and roadside floodlights. Since the commencement of the programme in 2017/18, we have replaced about 120,000 various kinds of lighting points, covering about 73% of total road lights, 27% of total fluorescent tubes at footbridges and subways, and all the gantry sign and roadside floodlights in Hong Kong.

We will continue to monitor the development of LED luminaires and other lighting technologies with a view to developing a more environmentally friendly and energy-saving public lighting system.

From 1 April 2022
to 31 March 2023

27,000

lighting points replaced



Since the commencement of
the programme in 2017/18

120,000

lighting points replaced

Replacement progress:

- ✓ Road lights
 73%
- ✓ Fluorescent tubes at footbridges and subways
 27%
- ✓ Gantry sign and roadside floodlights
 100%

Replacement of LED Lights



Kiu Hing Road, Yuen Long



Footbridge at Hoi Fai Road near Nam Cheong Park



Subway at On Po Road near Tai Po Centre

Energy Saving in Office

Energy Saving Measures

We endeavour to reduce energy consumption in office and have promulgated the following measures:

 <p>Appoint Energy Wardens to monitor the usage of lighting equipment and to keep the illumination level to the minimum but acceptable level</p>	 <p>Maintain air-conditioning temperature not lower than 25.5°C in hot seasons</p>	 <p>Switch off lights during lunch or when staff are away for long periods</p>
 <p>Switch off computer equipment and electric appliances when not in use</p>	 <p>Encourage the use of staircase for inter-floor traffic</p>	 <p>Monitor the electricity consumption of offices of the Highways Department with individual electricity meters installed</p>

Since 2021, we have been exploring the feasibility of replacing lighting fittings with LED tubes at our offices to achieve a further reduction of energy consumption. The replacement of lighting fittings to LED tubes for our offices on 5/F of Ho Man Tin Government Offices and 12/F of Nan Fung Commercial Centre have been completed in 2022/23. We are seeking the Electrical and Mechanical Services Department's advice for extending the lighting fitting replacement works to our Department's other offices by phases.

Electricity consumption in 2022/23 with corresponding indirect gas emission figures:

Offices	Electricity Consumption (kWh) [Comparison with 2021/22]	Indirect Gas Emissions (kg)		
		SO ₂	NO _x	RSP
Ho Man Tin Government Offices	890,821 [-3.56%]	1,701.47	1,033.35	53.45
North Point Government Offices	169,795 [-2.30%]	324.31	196.96	10.19
Trade and Industry Tower	643,062 [4.10%]	1,228.25	745.95	38.58
Nan Fung Commercial Centre	446,554 [4.10%]	852.92	518.00	26.79
Grand City Plaza	22,934 [-1.88%]	43.80	26.60	1.38
Cheung Sha Wan Plaza	10,861 [3.36%]	20.74	12.60	0.65
The Harbourfront Tower 1	68,836 [4.97%]	131.48	79.85	4.13
The Harbourfront Tower 2	13,230 [-6.86%]	25.27	15.35	0.79
One Sky Parc ¹	315,643 [N/A]	602.88	366.15	18.94

Note ¹: Offices were progressively moving into One Sky Parc from 2020 to 2023 and so no comparison was made.

Contribution to Reducing Emission

Promoting the Use of Renewable Energy on Highway Structures

To signify the Government's commitment to carbon reduction, the 2019 Policy Address has set a Green Energy Target which aimed to achieve a reduction of 6% in the Government's total energy consumption from 2020 to 2025. The 2022 Policy Address has also announced that the Government would continue to improve the overall energy performance of government buildings and infrastructure by more than 6% by 2025 through energy saving and the use of renewable energy (RE).

Photovoltaic (PV) system, comprising solar panels and inverters to convert solar energy into electricity, is one of the common RE technologies. We have identified highway structures suitable for installation of PV systems to promote the use of RE on one hand, and to raise the public awareness of the benefits of RE on the other. We are planning to install PV panels on the roof of selected new and existing highway structures such as noise barriers/enclosures, ventilation buildings of tunnels, footbridges and subways, in order to make the best use of the open spaces to maximize the efficiency of radiation absorption for generating electricity.



PV system on the roof of the existing subway at Kwai Fuk Road

Projects Completed To-date:

Subway at Pok Fu Lam Road near Pokfield Road
(completed in 2020)



Subway at Kwai Fuk Road near Kwai Fong Station
(completed in 2021)



Subway at Cherry Street near Oak Street
(completed in 2022)



As of to-date, we have completed the installation of PV systems on the roof of three existing subways at Pok Fu Lam Road, Kwai Fuk Road and Cherry Street. The PV systems installed at these subways are connected to the power grid to enhance supply reliability. The generated electricity would be primarily used by the subway lighting facilities. On the other hand, if the generated electricity is more than the need of the concerned subway, the surplus would be exported into the power grid for utilization by other users.

In order to achieve the Green Energy Target announced in the Policy Addresses and strive towards carbon neutrality, we will continue to seek opportunities to promote the use of RE on highway structures.

Environmentally Friendly Vehicles

Five medium vans have been replaced in 2022/23 by environmentally friendly vehicle models approved by the Environmental Protection Department, which have exhaust emission standards more stringent than the prevailing statutory requirements. With less air pollutant release, the new vehicles could help contribute to better air quality which in turn protected the health and well being of the community. In view of the latest government-wide policy of setting electric vehicles as standard for small and medium private cars in the government fleet, we will progressively replace the saloon cars in our fleet by electric vehicles.



Environmentally friendly van in use