

**For discussion on
23 March 2015**

**LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS**

Progress of Setting up of Low Emission Zones

PURPOSE

This paper reports on the progress of setting up low emission zones (LEZs) in Causeway Bay, Central and Mong Kok.

BACKGROUND

2. Franchised buses are one of the major sources of air pollution at busy corridors in Causeway Bay, Central and Mong Kok. At these corridors, franchised buses can account for up to 40% of the traffic, thereby contributing 80% and 40% of vehicular nitrogen oxides (NO_x) and particulate emissions respectively. Setting up LEZs through the deployment of low emission franchised buses (i.e. those meeting the emission level of Euro IV or above) could bring significant improvement to roadside air quality within the zones as well as those districts where the low emission buses will ply.

3. To improve roadside air quality and protect public health, the 2010 Policy Address announced the plan of setting up of LEZs in Causeway Bay, Central and Mong Kok with the target of having only low emission franchised buses travelling in these zones by 2015. The three LEZs are located at Yee Wo Street in Causeway Bay; the junction of Des Voeux Road Central / Pedder Street in Central and the junction of Nathan Road / Lai Chi Kok Road in Mong Kok respectively. Their relevant location maps are shown at **Annex**.

4. About 130 bus routes are running through the three LEZs, 44 of which are cross-harbour routes. These bus routes are operated by The Kowloon Motor Bus Company (1933) Limited (KMB), Citybus Limited (CTB) and New World First Bus Services Limited (NWFB).

LOW EMISSION BUSES

5. To fulfill the target for setting up LEZs, the franchised bus companies are replacing old buses by new ones through the established bus replacement arrangement and retrofitting their Euro II and III buses with after-exhaust treatment devices so as to increase the number of low emission buses. On bus replacement, franchised bus companies will have to use buses of less than 18 years old to provide franchised bus services. Between April 2013 and March 2016, the franchised bus companies will procure about 1 830 new buses under the bus replacement programme. At present, there is no pre-Euro bus in the franchised bus fleet and all its Euro I buses will be retired by December 2015. All the replacement buses are complying with the prevailing statutory emission standard which is Euro V. Besides, the franchised bus companies are retrofitting some of their Euro II and III buses with selective catalytic reduction devices (SCRs) to upgrade their emissions performance comparable to that of Euro IV or above level. According to the established bus replacement arrangement, Euro II and Euro III buses will be retired by 2019 and 2026 respectively.

6. As at end of December 2014, the three franchised bus companies (i.e. KMB, CTB and NWFB) had a total of 5 520 buses, of which 1 881 were low emission buses, accounting for about 34% of the total. The details are as follows:

Bus company	Number of buses in the fleet	Number of low emission buses	Proportion of low emission buses in the fleet
KMB	3 852	1 063	28%
CTB	957	570	60%
NWFB	711	248	35%
Total	5 520	1 881	34%

The low emission buses include single-deck buses which mainly serve the routes outside LEZs, and low-floor buses which could facilitate the elderly and disabled passengers to board and alight the buses.

PROGRESS OF LEZs

7. Since 2011, the franchised bus companies have been increasingly deploying low emission buses to the LEZs. The numbers of low emission buses running through the LEZs increased nearly by two-fold, from 443 in end December 2011 to 1 244 in end December 2014.

Position as at	No. of low emission buses travelling in the 3 LEZs			Total
	KMB	CTB	NWFB	
31.12.2011	237	130	76	443
31.12.2012	269	237	80	586
31.12.2013	459	356	96	911
31.12.2014	572	469	203	1 244

8. We estimate that some 2 300 buses will be required by the franchised bus companies for the three LEZs by end of 2015. The respective numbers required by the three franchised bus companies are as follows:

Position as at	Estimated no. of low emission buses required in the 3 LEZs			Estimated total
	KMB	CTB	NWFB	
By end of 2015	1 100	691	506	2 297

9. KMB has confirmed that all its buses travelling in the LEZs will be low emission buses by end of 2015. CTB/NWFB cannot fully meet the target. Their initial estimate was that the shortfall could be about 13% of their required buses for the LEZs. They attribute the shortfall to the fewer than their original estimate of the number of buses to be reduced through bus route rationalization associated with the opening of West Island Line (WIL) and the deferred opening of the South Island Line (SIL). Furthermore, there have also been increased demands for low-floor buses to cater for the elderly and disabled passengers in routes outside the LEZs. As a result, the number of low emission buses that can be deployed for routes running through the LEZs slightly falls short of their original estimates. We have been working with CTB/NWFB on measures to make up the shortfall with a view to achieving the LEZ target the soonest possible.

EFFORTS TO INCREASE LOW EMISSION BUSES IN LEZs

10. According to CTB/NWFB, orders for new buses for delivery in 2015 and 2016 were already made in January 2014 and January 2015 respectively because of the long lead-time for acquiring new buses. They have re-examined those Euro II buses which were previously excluded from the SCR retrofit programme. As a result, CTB/NWFB have recently included an additional 101 Euro II buses in the SCR retrofit programme. As at mid-January 2015, CTB/NWFB retrofitted 138 buses with SCRs and expected to complete the retrofit for another 200 buses before end of 2015. This will enable NWFB to fully attain the target of LEZs while CTB could have about 93% of its buses in the LEZs being low emission buses by the end of 2015. We will continue to follow up with CTB/NWFB on the progress of the SCR retrofit programme. According to CTB's latest estimate, together with deployment of new buses, it will be able to meet the LEZ target by the first quarter of 2016. The full attainment of this target will depend on the outcome of bus route rationalization upon full opening of the WIL, the timely delivery of new buses and the progress of the SCR retrofit programme. It should also be noted that in practice, unexpected service disruptions due to traffic congestion, vehicle breakdowns, traffic accidents and etc. may still result in the deployment of non-low emission buses to LEZs occasionally. The chance of deploying non-low emission buses to LEZs due to unexpected service disruption is low and will further diminish upon the delivery of more new buses.

MONITORING THE IMPLEMENTATION OF LEZS

11. The franchised bus companies are reporting to the Environmental Protection Department and the Transport Department on a quarterly basis on the deployment of low emission buses in each of the LEZs. Together with the Transport Department, we will continue to closely monitor the deployment of low emission buses to LEZs.

EMISSION CONTROL FOR OTHER VEHICLES

12. Apart from the launching of LEZs, we have adopted two key measures to reduce the emissions of other types of vehicles.

(a) Private Cars and Liquefied Petroleum Gas (LPG) Vehicles

Private cars are mainly petrol vehicles while the majority of our taxis and public light buses are LPG vehicles. The nitrogen oxides and particulate emissions of petrol and LPG vehicles are less of a concern as compared with diesel vehicles as long as they are properly maintained. To pave way for strengthening the emission control of petrol and LPG vehicles through the deployment of roadside remote sensing equipment and chassis dynamometers for emission testing, we completed a subsidy programme in March 2014 to help about 17 000 LPG taxis and public light buses to replace their catalytic converters which are a key emission control component. With a functioning catalytic converter and other combustion-related engine parts in good condition, the emissions of petrol or LPG vehicles would be under control.

We launched a strengthened emission control programme starting from 1 September 2014. As at end-February 2015, our remote sensing equipment checked the emissions of about 267 000 vehicles and issued about 1 700 Emission Test Notices to require those vehicles with excessive emissions to pass an emission test within a prescribed period to ensure that the excessive emission problem has been fixed. Failure to meet this requirement would lead to cancellation of the vehicle licence. About 130 vehicles either have been scrapped by their owners or have their vehicle licences cancelled by the Transport Department.

(b) Diesel Commercial Vehicles (DCVs)

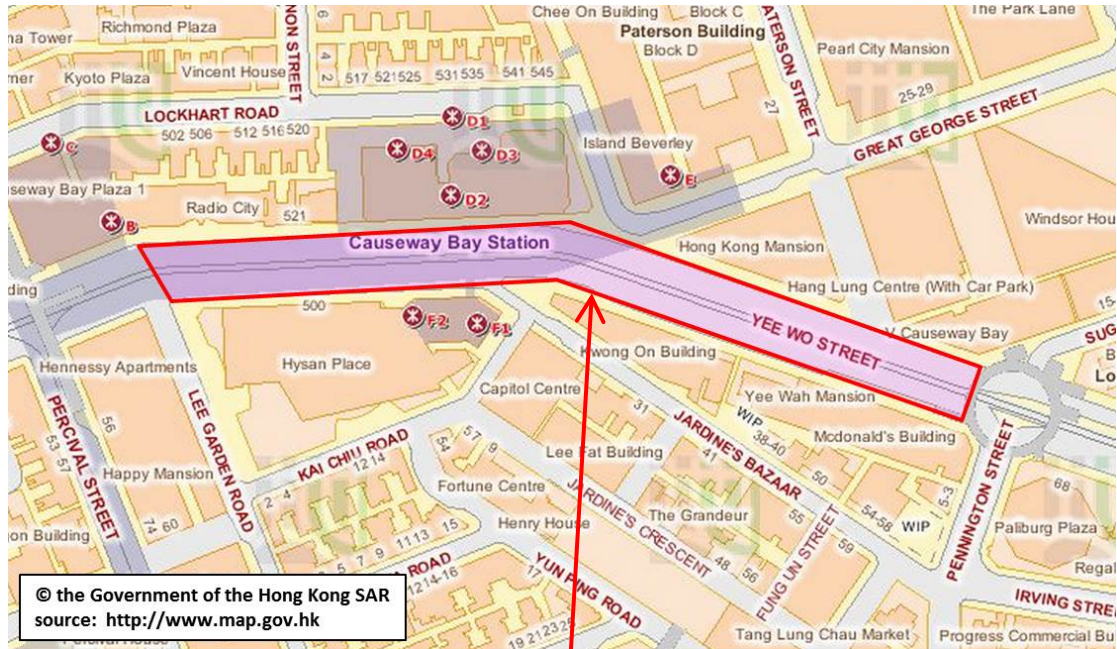
In March 2014, we launched an \$11.4 billion incentive-cum-regulatory scheme to phase out progressively some 82 000 pre-Euro IV DCVs (about 60% of the DCV fleet), including goods vehicles, light buses and non-franchised buses by end of 2019. The response has been very encouraging. About 23 600 pre-Euro IV DCVs (i.e. about 29% of the concerned vehicles) were retired under the scheme in the first 12 months (i.e. up to end February 2015) of this 70 month-long scheme. By end 2019, the whole DCV fleet will be made up of vehicles meeting emission standard of Euro IV or above.

WAY FORWARD

13. We will continue to work with the franchised bus companies on the setting up of LEZs and to monitor the implementation of the LEZ scheme. Members are invited to note the latest progress of the LEZ scheme.

Environmental Protection Department
March 2015

Low Emission Zone in Causeway Bay



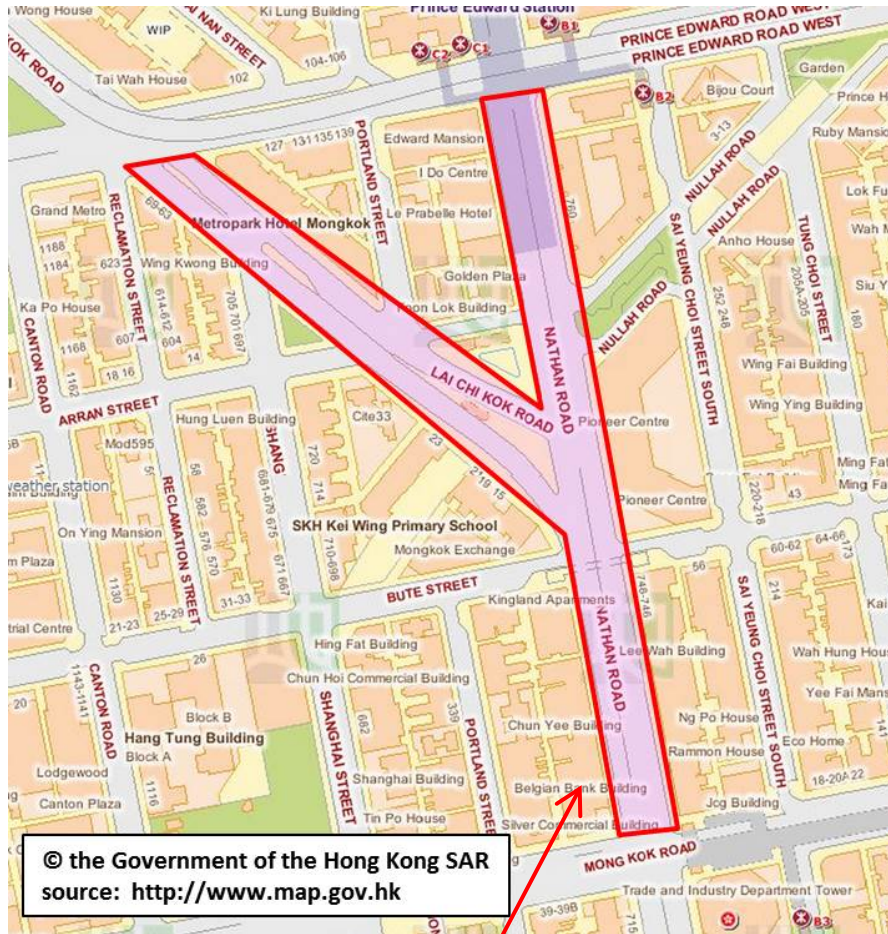
Low Emission Zone

Low Emission Zone in Central



Low Emission Zone

Low Emission Zone in Mong Kok



Low Emission Zone