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**Panel on Environmental Affairs**

**Special meeting on 24 February 2017**

**Updated background brief on tightening of emission standards  
of newly registered motor vehicles  
prepared by the Legislative Council Secretariat**

**Purpose**

This paper provides updated background information on the tightening of the emission standards of newly registered motor vehicles. It also gives a brief account of the views and concerns expressed by Members when related issues were discussed by the relevant committees of the Legislative Council.

**Background**

Emission control on motor vehicles in Hong Kong

2. Motor vehicles are the major source of roadside air pollution. To improve roadside air quality, the Administration has been tightening motor vehicle fuel and emission standards with reference to international developments and when the relevant compliant motor fuels and vehicles can be made available to Hong Kong. Tightening of vehicle emission standards is effected by amending the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations (Cap. 311J) ("the Regulations").<sup>1</sup> The Regulations provide, among other matters, that motor vehicles in Hong Kong must be so constructed that the emissions from them conform to the emission standards specified in the various schedules to the Regulations.

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<sup>1</sup> The Regulations are made by the Secretary for the Environment under section 43(1)(rg) of the Air Pollution Control Ordinance (Cap. 311).

### Current emission standards for newly registered motor vehicles

3. In Hong Kong, the vehicle emission standards have been tightened to Euro V for newly registered motor vehicles (except diesel private cars) in phases from 2012, and Euro III for motor cycles and tricycles from January 2007. As diesel private cars generally emit more pollutants than petrol cars, the Administration has adopted a more stringent vehicle emission standard, i.e. the emission standard of California, for these vehicles since 1998, and California LEV II has been in force in Hong Kong since January 2006.

### International developments in vehicle emission standards

4. The European Union ("EU") has tightened its emission standards to Euro VI for newly registered heavy duty vehicles (i.e. vehicles with design weight over 3.5 tonnes) from December 2013, light duty vehicles (passenger cars) from September 2015, and light duty vehicles (goods vehicles) from September 2016. For motor cycles and tricycles, EU has implemented Euro IV emission standards from January 2017. California has also tightened its vehicle emission standards to LEV III since 2015.

5. According to the Administration, compared with the Euro V counterparts, Euro VI heavy duty diesel vehicles emit about 80% less nitrogen oxides ("NO<sub>x</sub>") and 50% less respirable suspended particulates, while Euro VI light duty diesel vehicles emit about 55% less NO<sub>x</sub>. The California LEV III standard for private cars increases the durability requirement for emission control systems by about 25% compared to the LEV II standard.

### Initial proposal to tighten vehicle emission standards

6. In the light of the latest international standards and vehicle supply situation, the Administration has since late 2015 consulted the relevant trades (including the transport and vehicle maintenance trades) and the Panel on Environmental Affairs ("the Panel") on its initial proposal to adopt the Euro VI emission standards for newly registered motor vehicles (except diesel private cars) in phases starting from September 2016.

7. Separately, in view of recent evidence that diesel private cars emit much more NO<sub>x</sub> than their petrol counterparts while on road when compared with laboratory tests, the Administration has undertaken a review on whether more stringent control is appropriate on new registration of diesel private cars.

### Revised proposal to tighten vehicle emission standards

8. Having regard to the feedback received during the consultation and the review findings, the Administration has proposed to revise the timetable for

tightening the emission standards for newly registered motor vehicles (except diesel private cars) to Euro VI in phases, and tighten the emission standard for newly registered diesel private cars to California LEV III, starting from 1 July 2017 ("the revised proposal").

### **Major views and concerns expressed by Members**

9. The Administration briefed the Panel on its initial and revised proposals to tighten the emission standards of newly registered motor vehicles at the meetings on 27 November 2015 and 19 December 2016 respectively. Related issues were brought up during the Panel's discussion on the interim findings of the trial of hybrid franchised buses on 30 March 2016, as well as during examination of the Estimates of Expenditure 2016-2017 and the briefing on the relevant initiatives in the 2017 Policy Address. The major views and concerns expressed by Members are summarized in the ensuing paragraphs.

#### Benefits of the revised proposal

10. Members enquired about the estimated quantifiable benefits in terms of improvement of air quality to be brought about by the revised proposal. As the increasing number of vehicles in Hong Kong might offset the gains from tightening vehicle emission standards, Members also asked about the policy and measures, if any, to contain vehicle growth.

11. The Administration advised that as a result of the overall measures in improving roadside air quality, which included the tightening of vehicle emission standards, the roadside concentration of NO<sub>x</sub> had been reduced by around 20% in the past five years. However, it was not practicable to quantify the contribution of a particular measure to roadside air quality improvement. As regards containing vehicle growth, the issue concerned transport policies under the purview of the Transport and Housing Bureau. Further, the Planning Department, in formulating the "Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030", had recognized the need to manage vehicle growth in order to achieve sustainable development.

#### Implementation schedule and supply of compliant vehicles

12. Noting that the proposed implementation dates for tightening the vehicle emission standards to Euro VI in Hong Kong lagged behind EU's corresponding schedule, some Members asked whether it was feasible to advance Hong Kong's implementation schedule with a view to improving roadside air quality more expeditiously. Some other Members, however, opined that implementation of the Euro VI emission standards should be premised on an adequate supply of compliant vehicles in the local market. In particular, the Administration should

ensure that Japanese models of compliant vehicles, which were generally cheaper, were readily available in the local market before implementing the Euro VI emission standards, so as to minimize the financial burden on small transport services operators.

13. The Administration advised that it would see it practicable to implement a more stringent emission standard for a particular class of vehicles when vehicle suppliers which in aggregate accounted for about 70% to 80% of the local market share would be able to put on the market compliant vehicles, including major brands of that class of vehicles. In this regard, the Administration had consulted the vehicle suppliers and taken into account the local supply situation of the relevant classes of Euro VI vehicles in the coming years when drawing up the implementation schedule. To address concerns expressed by the transport trades, the Administration had deferred the proposed commencement date of the Euro VI emission standards for goods vehicles and non-franchised buses by one year from 1 January 2017 to 1 January 2018. The deferred commencement timetable would make vehicle supply unlikely a problem.

#### Support for the vehicle maintenance trade

14. Members relayed the concern of the vehicle maintenance trade about the skills gap of vehicle mechanics for Euro VI vehicles. They considered that the Administration should step up its support to the trade to tie in with the tightening of statutory vehicle emission standards, and ensure sufficient local supplies of competent vehicle mechanics as well as spare parts for Euro VI vehicles.

15. The Administration explained that vehicle mechanics should be familiar with the emission control technologies to be used in Euro VI diesel vehicles (such as exhaust gas recirculation, selective catalytic reduction and diesel particulate filter) as those technologies had already been used in Euro IV and V diesel vehicles. To help vehicle mechanics keep abreast of the latest skills in maintaining diesel vehicles, the Vocational Training Council ("VTC") had been offering regular training courses since 2012 when Euro V became the statutory emission standards for vehicles newly registered in Hong Kong. The Environmental Protection Department ("EPD") had been organizing seminars in collaboration with VTC, vehicle manufacturers, industry organizations and other bodies to disseminate the latest vehicle maintenance information. Moreover, it was a requirement of Euro VI emission standards for vehicle manufacturers concerned to make available vehicle maintenance information to the public at a reasonable cost. The Administration intended to incorporate this requirement into the Regulations.

### Testing of vehicle emission performance

16. Members enquired whether the standards of emission tests for vehicles undergoing annual examination and those caught emitting excessively on road would be aligned to enhance enforcement of the statutory emission standards. They considered that the Transport Department ("TD") should incorporate NO<sub>x</sub> emission test in the annual vehicle examination.

17. The Administration responded that EPD had been following up with TD the alignment of emission test standards. To incorporate the NO<sub>x</sub> emission test in the annual vehicle examination would require more car testing centres to be set up for administering the vehicle examination. Furthermore, in the course of reviewing the Air Quality Objectives, the Administration had received views from some stakeholders that it might not be cost-effective to require all registered vehicles to undergo NO<sub>x</sub> emission test in TD's annual vehicle examination because only a small number of vehicles had excessive NO<sub>x</sub> emissions. In the meantime, the Administration would continue to implement specific measures (such as adoption of roadside remote sensors to test vehicle emissions) targeting at gross-emitting vehicles.

### **Council questions**

18. At the Council meetings of 25 March 2015, 14 October 2015 and 17 February 2016, Hon CHAN Hak-kan, Hon Frederick FUNG and Hon Frankie YICK raised questions relating to vehicle emission control. Issues covered in the questions include provision of skills training for vehicle mechanics, review of the system for regulating vehicle emissions, and supporting measures to promote adoption of environment-friendly commercial vehicles in Hong Kong. The questions and the Administration's replies are hyperlinked in the **Appendix**.

### **Relevant papers**

19. A list of relevant papers is set out in the **Appendix**.

**Tightening of emission standards of newly registered motor vehicles**

**List of relevant papers**

<b>Date</b>	<b>Event</b>	<b>Paper</b>
27 November 2015	Meeting of the Panel on Environmental Affairs	Administration's paper on "Proposals to Tighten Emission Standards of Newly Registered Vehicles" (LC Paper No. <a href="#">CB(1)180/15-16(03)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)495/15-16</a> )  Administration's follow-up paper (LC Paper No. <a href="#">CB(1)389/15-16(02)</a> )
30 March 2016	Meeting of the Panel on Environmental Affairs	Administration's paper on "Interim Findings of the Trial of Hybrid Franchised Buses" (LC Paper No. <a href="#">CB(1)705/15-16(05)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)969/15-16</a> )
6 April 2016	Special meeting of the Finance Committee for examination of Estimates of Expenditure 2016-2017	Written question raised by a Member and the Administration's reply (Reply serial number: <a href="#">ENB337</a> )
19 December 2016	Meeting of the Panel on Environmental Affairs	Administration's paper on "Proposals to Tighten Emission Standards of Newly Registered Vehicles" (LC Paper No. <a href="#">CB(1)295/16-17(06)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)504/16-17</a> ) (to be confirmed at the meeting on 27 February 2017)
23 January 2017	Meeting of the Panel on Environmental Affairs	Administration's paper on "2017 Policy Address – Policy Initiatives of Environment Bureau: Environmental Protection" (LC Paper No. <a href="#">CB(1)451/16-17(01)</a> )

**Hyperlinks to relevant Council Questions:**

<b>Date</b>	<b>Council Question</b>
25 March 2015	<a href="#">Press release</a> on Council question (written) raised by Hon CHAN Hak-kan
14 October 2015	<a href="#">Press release</a> on Council question (written) raised by Hon Frederick FUNG
17 February 2016	<a href="#">Press release</a> on Council question (written) raised by Hon Frankie YICK