

For Information  
July 2008

**LEGISLATIVE COUNCIL  
PANEL ON ENVIRONMENTAL AFFAIRS**

**Progress of Measures to Improve Air Quality**

**Purpose**

This paper reports on the latest progress of measures to improve air quality and to meet the Government's emission reduction targets by 2010.

**Background**

2. To improve regional air quality, the Hong Kong Special Administrative Region (SAR) Government reached a consensus with the Guangdong Provincial Government in April 2002 to reduce, on a best endeavour basis, the emission of four major air pollutants, namely sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), respirable suspended particulates (RSP) and volatile organic compounds (VOC) by 40%, 20%, 55% and 55% respectively in the region by 2010, using 1997 as the base year. Achieving these targets will significantly help to improve the air quality of the Pearl River Delta (PRD) Region and relieve the regional smog problem.

3. Since September 2005, we have been providing six-monthly reports to the Panel on Environmental Affairs on the progress of meeting the 2010 emission reduction targets, including the relevant measures taken by the two power companies. We last reported to this Panel in January 2008. This is the sixth progress report.

**Progress of Emission Reduction**

4. We are making good progress in the implementation of local emission reduction measures. Except for SO<sub>2</sub> whose emission level has increased by 12% (down from the height of 46% above the 1997 figure in 2004) due to a rise in the use of coal in power generation in recent years, the emission levels of all other pollutants have dropped when compared with those in 1997. Details are as follows –

	<b>Emission Level in 1997 (Tonnes)</b>	<b>Change in Emission Level during 1997-2006</b>	<b>Emission Reduction Target for 2010</b>
SO <sub>2</sub>	65 900	+12%	-40%
NO <sub>x</sub>	123 000	-23%	-20%
RSP	11 400	-48%	-55%
VOC	68 900	-40%	-55%

### **Latest Measures**

5. To further step up the local efforts in emission reduction, the Chief Executive announced a series of new initiatives in the 2007-08 Policy Address. We have been implementing these initiatives progressively –

- (a) we commissioned a comprehensive consultancy study in June 2007 to review Hong Kong's Air Quality Objectives (AQOs) and develop a long-term air quality management strategy, taking into account the latest international developments, including the Air Quality Guidelines recently published by the World Health Organization. We will engage the public in the course of the study which is expected to be completed by the end of 2008;
- (b) we completed a public consultation on the proposal to introduce a statutory ban on idling vehicles with running engines on 31 March 2008. We are considering all the views received for working out a final proposal for submission to the Legislative Council (LegCo) by the end of 2008. Our target is to implement the ban in 2009;
- (c) we introduced a duty concession for Euro V diesel, which is a more environment-friendly fuel with 80% less sulphur content than ultra-low sulphur diesel (ULSD), with effect from 1 December 2007 for a period of two years so as to promote its supply and use. At present, all of the oil companies are supplying Euro V diesel to the market;
- (d) we are developing a proposal to strengthen the control of emissions from petrol and liquefied petroleum gas vehicles, including the use of

roadside remote sensing equipment and dynamometers for emission testing. Our plan is to consult the stakeholders later this year;

- (e) we tabled the Air Pollution Control (Fuel Restriction) (Amendment) Regulation at the LegCo on 21 May 2008 to mandate the use of ULSD in industrial and commercial processes, which will reduce about 2 480 tonnes of SO<sub>2</sub> emission per year, or about 3.4% of the total local SO<sub>2</sub> emission in 2006<sup>1</sup>. The legislative procedure has been completed and the regulation will come into effect on 1 October 2008;
- (f) we are making preparations to tighten the statutory specifications of motor vehicle diesel and unleaded petrol to the Euro V standards in 2009;
- (g) to promote the development of the biodiesel market, we are making preparations to spell out specifications for pure biodiesel and biodiesel blended with motor vehicle diesel in the Air Pollution Control (Motor Vehicle Fuel) Regulation (Chapter 311L) so as to ensure fuel quality, boost users' confidence and help control its impact on the environment. We are conducting a consultation for preparing the enabling legislation for implementation in 2009;
- (h) we have set up an inter-departmental working group to draw up a proposal for a trial on ferries using ULSD. Subject to its findings, we would draw up schemes to encourage ferry operators to switch to using ULSD;
- (i) we completed a public consultation on the proposal to introduce mandatory implementation of the Building Energy Codes ("BEC") for certain new and existing buildings on 31 March 2008. The vast majority of the views received support the proposal, which aims at improving energy efficiency of buildings, thereby combating air pollution and alleviating global warming. We are preparing the relevant legislative proposal, taking into account all the views received; and
- (j) we introduced a mandatory Energy Efficiency Labelling Scheme (EELS) through the Energy Efficiency (Labelling of Products) Ordinance, which came into effect on 9 May 2008, to encourage the use of energy-efficient products. The initial phase of this scheme covers three types

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<sup>1</sup> Based on an annual consumption of about 378 million litres of industrial diesel in Hong Kong.

of products, namely, room air conditioners, refrigerating appliances and compact fluorescent lamps. We will commence to plan for the coverage of the second phase of the mandatory EELS shortly.

6. Apart from the above, we have been implementing the following incentive schemes since 1 April 2007 –

- (a) a \$3.2 billion one-off grant scheme to encourage car owners to replace their pre-Euro and Euro I commercial diesel vehicles with Euro IV models as early as possible. As at the end of May 2008, we have received about 6 300 applications and approved about 6 000 of them; and
- (b) a 30% reduction in First Registration Tax, subject to a cap of \$50,000 per vehicle, to encourage the use of more environment-friendly private vehicles. As at the end of May 2008, we have received about 4 600 applications and approved about 4 500 of them.

7. Also, since 1 April 2008, we have reduced First Registration Tax of environment-friendly commercial vehicles to encourage their use. As at the end of May 2008, we have received and approved about 40 applications.

### **Latest Measures to Control Emissions from the Power Sector**

8. Power generation is the largest local source of SO<sub>2</sub> emission. We have therefore imposed emission caps on all power plants and are progressively tightening them during licence renewals.

9. As at the end of May 2008, we have made the following progress in reducing emissions from this source –

- (a) on retrofit projects, an Environmental Permit was granted to Hongkong Electric Company Limited (HEC) for retrofitting an additional flue gas desulphurisation system for a 250 MW coal-fired generating unit. Meanwhile, both HEC and CLP Power Hong Kong Limited (CLP) are carrying on with the construction works. The projects are expected to complete in phases between 2009 and 2011;
- (b) on the wider use of natural gas, we granted an Environmental Permit to CLP for the proposed liquefied natural gas (LNG) receiving terminal in April 2007, on conditions that stringent environmental mitigation measures will be implemented. We will also consider the feasibility of obtaining gas supply from other natural gas/LNG projects in the region.

At this moment, we have not yet made any decision on CLP's natural gas supply proposal. We will carefully examine the proposal and will agree to it only if CLP can prove that all of the relevant considerations are reasonable and acceptable; and

- (c) on promotion of renewable energy, both HEC and CLP are conducting Environmental Impact Assessment studies for building off-shore commercial wind farms in Hong Kong waters.

10. To encourage HEC and CLP to take more proactive steps to reduce emissions and sustain strict compliance with the environmental requirements, we have included a number of incentive and penalty arrangements in the new Scheme of Control Agreements signed with them on 7 January 2008. These arrangements include –

- (a) linking the rates of return of the two power companies to their environmental performances. There will be financial incentives in terms of higher rates of return for rewarding better than required performance in reducing air pollutant emissions and improving air quality. Likewise, the new arrangements will provide for financial disincentive in terms of lower rates of return for emitting more pollutants than permissible; and
- (b) providing higher rates of return to the power companies for their investment in renewable energy facilities and offering them a bonus in permitted return depending on the extent of renewable energy usage in their electricity generation, so as to support them to implement more environment-friendly measures.

11. In parallel, LegCo has passed the Air Pollution Control (Amendment) Bill 2008 through the LegCo to stipulate the emission caps for the power plants in 2010 and beyond, and to allow them to use emission trading as an alternative means for achieving the emission caps. The legislative amendments will ensure a smooth, timely and transparent implementation of the emission caps for the power sector.

### **Co-operation with the Mainland**

12. Maintaining a close partnership with the Mainland authorities is crucial to achieving the 2010 emission reduction targets. In the first half of 2008, the Guangdong Provincial Government has continued its efforts to implement the enhanced control measures under the Pearl River Delta Regional Air Quality

Management Plan (Management Plan).

13. The Guangdong Provincial Government has introduced various emission reduction measures this year, which include –

- (a) requiring newly registered motor vehicles in the Guangdong Province to comply with the National III standards (which are on a par with the Euro III standards) from 1 July 2008;
- (b) progressively supplying the National III motor fuels to the PRD Region from 1 January 2008 and expanding the supply network to cover all cities in the region by the end of 2008; and
- (c) further phasing out small thermal power plants (total capacity of 9 660 MW) and other polluting industries of low production efficiency, including cement plants (total production volume of 38 million tonnes) and metal and steel plants (total production volume of 16 million tonnes), by the end of 2010.

14. To further step up the efforts to improve regional air quality, the Guangdong Provincial Government has also agreed to carry out enhanced measures recommended in the Mid-term Review Report of the Management Plan released in January 2008. Some of these additional measures include –

- (a) requiring new coal-fired power plants to install NO<sub>x</sub> removal equipment;
- (b) tightening emission standards for boilers for industrial and commercial uses;
- (c) strengthening cleaner production requirements for industrial sectors that produce VOC-containing products;
- (d) setting limits on the VOC contents of consumer products;
- (e) taking steps to enhance emission control of local vessels, etc.

15. On 30 April 2008, we released the annual report on the monitoring results of the Pearl River Delta Regional Air Quality Monitoring Network for 2007 to the public. The monitoring results for the first half of 2008 are expected to be available in October 2008.

16. At the same time, we are also closely collaborating with the Economic and Trade Commission of Guangdong Province to promote energy efficiency and cleaner production practices to the industrial enterprises in both places. In April 2008, the two sides jointly launched a five-year “Cleaner Production Partnership Programme” to encourage and facilitate Hong Kong-owned factories operating in the PRD Region to adopt cleaner production technologies and processes, which will help enhance energy efficiency and reduce pollutant emissions, thereby raising their overall environmental performance.

17. In the remaining half of 2008, both sides will continue to work towards the 2010 emission reduction targets by implementing the measures under the Management Plan, including those recommended in the Mid-term Review.

**Environment Bureau**  
**July 2008**