

**International Business Committee**  
**Progress of Measures to Improve Air Quality**

**Purpose**

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

**Background**

2. To improve regional air quality, the Hong Kong Special Administrative Region 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 (RSPs) and volatile organic compounds (VOCs) by 40%, 20%, 55% and 55% respectively in the region by 2010, using 1997 as the base year. Achieving these targets will not only enable Hong Kong to meet its air quality objectives (AQOs), but will also significantly improve the air quality of the Pearl River Delta (PRD) region and relieve the regional smog problem.

**Progress and Latest Measures**

*Emission Reduction*

3. We are making good progress in the implementation of local emission reduction measures. Except SO<sub>2</sub>, whose emission level has increased 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 1997-2005</b>	<b>Emission Reduction Target for 2010</b>
SO <sub>2</sub>	64 500	+31%	-40%

NO <sub>x</sub>	110 000	-15%	-20%
RSPs	11 200	-36%	-55%
VOCs	54 400	-26%	-55%

4. Roadside air quality is also improving. With the successful implementation of various vehicle emission control measures over the past years, the number of hours of low to medium air pollution (i.e. Air Pollution Index 50 or below) recorded by roadside air monitoring stations has increased from 139 in 1999 to 650 in 2006, representing a 3.7 times increase. Over the same period, RSPs, NO<sub>x</sub> and SO<sub>2</sub> concentrations at roadside have also reduced by 13%, 19% and 30% respectively.

*Latest Measures*

5. To further step up local efforts in emission reduction, the Chief Executive announced a series of new initiatives in his 2006 Policy Address. We have been implementing these initiatives progressively -

- (a) on 1 April 2007, we launched a one-off grant scheme with \$3.2 billion to encourage car owners to replace their pre-Euro and Euro I commercial diesel vehicles with Euro IV models as early as possible. If all these vehicles, which total about 74 000, are replaced, it is expected that the emissions of NO<sub>x</sub> and RSPs in Hong Kong will be reduced by 10% and 18% respectively. As at the end of July, 1 111 applications have been received under this scheme, of which 879 have been approved;
- (b) with effect from 1 April 2007, a 30% reduction in First Registration Tax, subject to a cap of \$50,000 per vehicle, will be granted to buyers of environment friendly petrol private cars so as to encourage their use. As at the end of July, the Government has received 1 623 applications, of which 1 557 of them have been approved; and
- (c) we plan to consult the public within this year on enacting legislation for switching off idling engines.

6. Apart from the above, we have extended the mandatory requirement of installing emission reduction devices to cover long idling pre-Euro diesel vehicles from 1 April 2007. Since then, all pre-Euro diesel vehicles are required to install emission reduction devices.

7. Starting from 1 April 2007, we have been enforcing the new legislation in phases to impose statutory limits on VOC contents of paints, printing inks and six broad categories of specified consumer products (namely hairspray, air freshener, insecticide, insect repellent, floor wax stripper and multi-purpose lubricant) and implementing the mandatory requirement of installing emission reduction devices for certain printing processes. Upon full implementation of the legislation, it is expected that VOC emission will reduce by 8 000 tonnes.

8. Power generation is the largest local source of SO<sub>2</sub> emission. We have therefore imposed emission caps on power plants and will tighten them progressively. In the recent renewal of the licence of the Castle Peak Power Station in July this year, we have further tightened up the emission caps on SO<sub>2</sub>, NO<sub>x</sub> and RSPs. The station's allowed emission levels by the end of 2009 will be 15% to 27% lower than those for 2005. The Chief Executive has reaffirmed in his 2006 Policy Address Government's commitment to achieving the 2010 emission reduction targets under the consensus with Guangdong. At our current negotiations with the power companies on the post-2008 Schemes of Control, we have also made clear that environmental requirements will be a major focus. The permitted rates of return of the power companies will be linked to their achievement of the emission caps.

9. Specifically, we have made the following progress in reducing emissions from power plants this year -

- (a) on retrofit projects, Environmental Permits were granted to the Hong Kong Electric Company Limited (HEC) and the China Light & Power Hong Kong Limited (CLP) for their reduction retrofit projects in April and November 2006 respectively. HEC has awarded the procurement contract and the major retrofit contract for its flue gas desulphurisation system. CLP is now vetting the detailed layout plan and has awarded some major works contracts;
- (b) on the wider use of natural gas, we granted in April 2007 the Environmental Permit to CLP's proposed liquefied natural gas (LNG) receiving terminal, with conditions including stringent environmental requirements and mitigating measures. 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 the relevant considerations are reasonable and acceptable; and

- (c) on promoting renewable energy, CLP was granted the Environmental Permit in March 2007 for launching a commercial scale wind turbine pilot project at Hei Ling Chau. According to the Environment Impact Assessment report submitted by CLP, the target commissioning date for the wind turbine unit is 2008.

10. The Environmental Protection Department has engaged an external consultant to undertake a comprehensive study to draw up a new set of AQOs and devise a relevant long-term management plan. The study will make reference to the new Air Quality Guidelines of the World Health Organization and the recent research findings in air quality in advanced countries. It will also evaluate carefully the need and justifications for revising Hong Kong's AQOs, taking into account local factors and considerations. The study will set out the required measures, the available options as well as their implications for achieving any new AQOs. The study is expected to be completed by the end of 2008. We aim to finalise the new AQOs and the required long-term strategy on air quality management within 2009. We have set up an Advisory Panel to guide the study and ensure that it is being properly conducted. It comprises members from the Advisory Council on the Environment, experts from different sectors, academics of relevant disciplines and representatives from relevant bureaux of the Government.

11. We have also commissioned the Hong Kong Productivity Council to launch a pilot scheme to promote the application of cleaner production technologies and practices amongst the Hong Kong-invested factories in the PRD region.

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

12. Maintaining a close partnership with the Mainland authorities is crucial to achieving the 2010 emission reduction targets. This year, the Guangdong Provincial Government has made considerable progress in implementing the enhanced control measures under the "Pearl River Delta Regional Air Quality Management Plan".

13. According to the information provided by the Guangdong Province, its

total installed capacity of power generation at the end of 2005 was about 48 000 MW, of which 28% and 16% were from oil-fired and small thermal power generating units respectively, while the others were from coal-fired, nuclear energy, hydro-electric and wind power generating units. In March 2007, the Guangdong Provincial Government announced its plan to phase out 133 small thermal power generating units with a total capacity of 9 660 MW by the end of 2010. Closing down these small power generating units, which are in general less efficient and more polluting than large units, would go a long way in reducing air emissions from the power generation sector.

14. On 30 January 2007, the environmental protection authorities of the Guangdong and Hong Kong governments announced the implementation framework of the “Emission Trading Pilot Scheme for Thermal Power Plants in the Pearl River Delta Region”. The Pilot Scheme provides a platform through which power plants in both places could identify emission reduction options and participate in emission trading on a voluntary basis. It helps the power companies to meet the emission caps imposed by the respective environmental protection authorities in a more cost-effective and flexible manner. On 18 May 2007, the two sides held a meeting with power companies of the PRD region in Guangzhou to explain the details of the implementation framework and promote exchange of views between the power plants and the governments of both places.

15. On 24 April 2007, the two sides announced the 2006 report on the “Monitoring Results of the Pearl River Delta Regional Air Quality Monitoring Network”. It is expected that the monitoring results for the first half of 2007 will be published this October.

**Environmental Protection Department**  
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