

For information  
15 July 2009

**LEGISLATIVE COUNCIL  
PANEL ON ECONOMIC DEVELOPMENT AND  
PANEL ON ENVIRONMENTAL AFFAIRS**

**Environmental Co-operation between  
Hong Kong and Guangdong**

**PURPOSE**

This paper gives an update on environmental co-operation between Hong Kong and Guangdong, and the key areas of co-operation that we propose to pursue with Guangdong in the context of “The Outline of the Plan for the Reform and Development of Pearl River Delta (PRD) (2008-2020)” (《珠江三角洲地區改革發展規劃綱要》) (the Plan).

**BACKGROUND**

2. The Hong Kong SAR Government has accorded top priority to environmental protection. Since pollution respects no boundary, we have been working closely with the Guangdong Provincial Government to improve the environment of the PRD region. Both governments attach great importance to the matter. Under the Hong Kong-Guangdong Joint Working Group on Sustainable Development and Environmental Protection, both sides hold regular meetings to exchange views and develop strategies to tackle various environmental issues of mutual concern. These include improving regional air quality, promoting cleaner production, strengthening cross-boundary water quality management and pollution control and enhancing ecological conservation, etc. Specific panels have been set up to examine the relevant issues in detail and carry out improvement plans.

3. To further strengthen co-operation in environmental protection, both governments agreed in August 2008 to jointly draw up strategies to transform the PRD region into a green and quality living area. This important strategic initiative has been fully embraced in the Plan.

## **LATEST PROGRESS**

### **Improving Regional Air Quality**

#### *2010 Emission Reduction Targets*

4. We reached a consensus with the Guangdong Provincial Government in April 2002 to reduce, on a best endeavour basis, the emissions 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. Both sides' resolve to achieve these reduction targets was reconfirmed at the Plenary of the Hong Kong/Guangdong Co-operation Joint Conference held in August last year.

#### *PRD Regional Air Quality Management Plan*

5. To achieve the 2010 reduction targets, the two governments jointly drew up in December 2003 the PRD Regional Air Quality Management Plan (the Management Plan), which sets out air pollution control and emission reduction measures targeting at major emission sources. Both governments are working in earnest to implement the Management Plan. To follow up on the tasks under the Management Plan, a PRD Air Quality Management and Monitoring Special Panel (the Panel) was set up under the Hong Kong/Guangdong Joint Working Group on Sustainable Development and Environmental Protection.

6. The emission reduction and control measures under the Management Plan target at the main emission sources, including power plants, vehicles and industrial processes. At home, emission caps have been imposed on all power plants and we are progressively tightening them during licence renewals. In 2008, we brought the Air Pollution Control (Amendment) Ordinance 2008 through LegCo to give statutory effects to the emission caps. Incentive schemes have also been put in place to promote a wider use of environment-friendly vehicles. Duty concession has also been introduced for Euro V diesel. We are now looking into the use of cleaner fuels by local ferries as well as stepping up control to limit the maximum VOC content in consumer products.

7. The Guangdong Provincial Government is also implementing a host of air quality improvement measures in order to deliver the 2010 emission reduction targets. These measures, which are summarized at **Annex**, focuses on improving energy supply structure, speeding up installation of flue gas desulphurization systems in thermal power plants, stepping up control of emissions from industrial sources, tightening motor vehicle emissions and fuel standards, and recovering vapour from oil depots, tanker trucks and petrol filling stations, etc. To further improve regional air quality, the Guangdong Provincial Government introduced in March 2009 the “Measures for Prevention and Control of Air Pollution in the Pearl River Delta Region of Guangdong Province (廣東省珠江三角洲大氣污染防治辦法) which set out further steps to control emissions from the power sector, road transport and industrial sources.

#### *Regional Air Quality Monitoring Network*

8. Under the Management Plan, both sides have jointly established a PRD Regional Air Quality Monitoring Network (the Monitoring Network) to provide comprehensive and accurate air quality data for the PRD region. A Regional Air Quality Index and a chart showing the pollution distribution pattern are published daily. Reports covering the regional air pollution situation between December 2005 and December 2008 are available at the websites of the environmental protection authorities of the two sides.

#### *Emission Trading Pilot Scheme*

9. To facilitate power plants in the region to comply with the emission caps set by their respective regulatory authorities, both governments developed an implementation framework for the Emission Trading Pilot Scheme for Thermal Power Plants in the PRD Region in January 2007. We also introduced suitable amendments to the Air Pollution Control Ordinance (Cap. 311) in 2008 to put in place the necessary legal framework for local power plants to engage in emission trading with their counterparts in the PRD region as a means to meeting the emission caps.

### *Mid-term Review of the Management Plan*

10. A mid-term review of the Management Plan was completed in 2008 to assess the effectiveness of the various emission reduction measures and the emission trends in the region, as well as to formulate enhanced control measures. The review concluded that the preventive and control measures being implemented by both sides under the Management Plan had helped reduce substantially air pollutant emissions in the region. It also recommended implementation of additional control measures targeting mainly at emissions from the industrial and transport (both land-based and marine) sectors.

11. For Hong Kong, the general air quality has shown some improvements in recent years. Over the last five years from 2004 to 2008, the ambient concentration levels of RSP, NO<sub>x</sub>, SO<sub>2</sub> and ozone have been reduced by 9% to 20%. The number of hours of reduced visibility<sup>1</sup> has also dropped by 30%. According to the monitoring results of the Pearl River Delta Regional Air Quality Monitoring Network for 2008, notwithstanding the continuing economic growth in the PRD Region last year, the average annual concentration levels of SO<sub>2</sub> and RSP in the region decrease by 19% and 11% respectively as compared to the 2007 levels. These reductions were attributable to the implementation of enhanced emission reduction measures and strengthening controls on vehicle emissions in the PRD economic zone. They also underscore the importance and effectiveness of the joint efforts of the two governments in improving regional air quality.

### **Cleaner Production**

12. In August 2007, the Guangdong Provincial Government and Hong Kong SAR Government signed the “Co-operation Agreement to Promote Energy Efficiency, Cleaner Production and Comprehensive Utilisation of Resources to Enterprises in Hong Kong and Guangdong”, which lays the foundation of cooperation between the two places on promoting energy efficiency and cleaner production to industrial

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<sup>1</sup> “Reduced visibility” refers to visibility below 8 kilometres when there is no fog, mist or precipitation.

enterprises in Hong Kong and Guangdong.

13. A five-year Cleaner Production Partnership Programme (the Programme) was launched in April 2008 to encourage and facilitate Hong Kong-owned factories in the PRD region to adopt cleaner production technologies and practices, with a view to reducing emissions and enhancing energy efficiency. Under the Programme, professional advice and technical support are provided to enterprises from eight industrial sectors: textiles, printing and publishing, metals and metal products, non-metallic mineral products, chemical products, food and beverage, paper and paper product manufacturing, and furniture making.

14. The Hong Kong SAR Government has set aside more than \$93 million to provide funding support to the Programme which comprises awareness promotion, subsidising factories for on-site assessments, demonstration projects and verification of the effectiveness of improvement projects. Together with the local authorities of PRD cities, outreaching activities, seminars and exhibitions on cleaner production technologies have been organised.

15. The Hong Kong Productivity Council is helping to implement the Programme in collaboration with environmental technology service providers across the region. To share information and successful experience, we have produced cleaner production guidebooks and set up a dedicated website and an enquiry hotline.

### **Regional Water Quality Improvement and Other Areas of Co-operation**

16. The Hong Kong SAR Government and Guangdong Provincial Government have established solid co-operation in tackling water pollution problem at the Pearl River Estuary and neighbouring waters. In 2008, both sides developed an advanced computer modelling tool for water quality assessment. It is capable of simulating the complicated flow distributions and water quality processes in the Pearl River Estuary, and serves as a scientific analytical tool to facilitate the two governments to draw up water quality management and pollution abatement plans. With the aid of the model, both sides will jointly explore the next stage of Pearl River Estuary water quality management cooperation.

17. It is the intention of both sides to progressively strengthen water pollution control in the Pearl River Estuary and neighbouring waters. The first review of the Deep Bay (Shenzhen Bay) Water Pollution Control Joint Implementation Programme has been completed. A revised Programme setting out the pollutant reduction targets for Shenzhen Bay and actions to be taken to progressively reduce the pollution loading has been drawn up. The two sides are also undertaking a review of the regional water quality control strategy for Mirs Bay.

18. In addition, both sides had conducted exchanges in a number of areas to facilitate effective marine resources management and sustainable development in Pearl River estuary. These included the establishment and management of marine protected areas and aquaculture technology. Both governments have been cooperating in conservation and research work on artificial reefs, Chinese white dolphins, coral reefs and sea turtles. There are also frequent exchanges on afforestation, urban greening, forest pest control, and protection of endangered animal and plant species.

## **GREEN PEARL RIVER DELTA REGION**

19. On the basis of the existing co-operation platform, Hong Kong and Guangdong have agreed last year to further strengthen and deepen co-operation on environmental front. Both sides would jointly draw up strategies to transform the PRD region into a green and quality living area (Green PRD Living Area) under the principle of sustainable development, and seek to develop a more comprehensive and forward looking approach in taking forward regional environmental cooperation. The objective is to develop the PRD region into a low-carbon, high-technology and low-pollution cluster of cities with quality living.

20. In January 2009, the National Development and Reform Commission released the Outline of the Plan for the Reform and Development of the Pearl River Delta (2008-2020)" (《珠江三角洲地區改革發展規劃綱要》) and the principle of Green PRD Living Area has been included in the Plan. Areas could be explored for enhanced co-operation, according to the Plan, include encouraging wider use of and

research in renewable energy; facilitating joint effort in natural conservation, promoting the development of circular economy; enhancing cleaner production in the region; and mapping out strategies to further improve the regional air quality.

21. At the 12th Working Meeting of the Hong Kong/Guangdong Co-operation Joint Conference in January 2009, the two governments agreed to promote the concept of Green PRD Living Area, and to strive for its inclusion in the National 12<sup>th</sup> Five-year Plan.

### **VIEWS SOUGHT**

22. Members are invited to note the latest position of environmental co-operation between Hong Kong and Guangdong as set out in this paper.

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**Pearl River Delta Regional Air Quality Management Plan  
Emission Reduction Measures of Guangdong Provincial Government**

Measures taken by Guangdong Province under the management Plan include the following –

1. establishing a diversified clean energy production and supply system, including terminating construction of new coal-fired or oil-fired power plants, development of gas-fired power plants and transmission of electricity from the western provinces;
2. requiring all large-scale thermal power generating units to carry out flue gas desulphurization;
3. requiring thermal power plants to install continuous emissions monitoring systems with instant on-line access by local authorities;
4. requiring all thermal power plants that are under construction, alteration or expansion to carry out flue gas denitrification (de-NO<sub>x</sub>);
5. closing down small thermal power plants and other serious polluting industries (including cement plants and iron and steel plants with low production capacity);
6. stepping up annual inspections and on-road spot checks on vehicles;
7. restricting the growth of motorcycles at key cities and banning them in the Guangzhou and Dongguan city areas;
8. implementing an environment labeling pilot system for vehicles at key cities, so that vehicles of specific categories are restricted from using the roads when the ambient air quality is bad;
9. constructing metro expressway systems, developing green transportation and strengthening vehicle emission and fuel



standards;

10. enhancing technological improvement at enterprises and promoting cleaner production (for example, requiring new projects to meet advanced cleaner production standards);
11. requiring newly registered motor vehicles in Guangdong to comply with the National III standards (which are on a par with the Euro III standards);
12. supplying National III standard motor fuels at Dongguan, Zhuhai and Zhongshan in addition to Shenzhen and Guangzhou; and
13. implementing comprehensive vapour recovery system at petrol filling stations, oil depots and tanker trucks at major PRD cities.

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