

## **Key Points of the Pearl River Delta Regional Air Quality Management Plan**

On 29 December 2003, the Hong Kong-Guangdong Joint Working Group on Sustainable Development and Environmental Protection (the JWGSDEP) approved the Pearl River Delta Regional Air Quality Management Plan (the Management Plan).

### **Framework of the Management Plan**

The Management Plan sets out the following major tasks:

- Implement a set of measures to enhance the potential of the air pollution control measures;
- Set up a reliable monitoring system for providing quick and accurate regional air quality data;
- Compile a regional atmospheric emissions inventory for the two governments to evaluate the progress and effectiveness of the air pollution control measures;
- Strengthen technical exchange and training to officers of the region with a view to enhancing their knowledge on regional air quality issues and to upgrade their scientific and technological capabilities for more effective management and monitoring work;
- Collect local and overseas information on new technologies and management practices of air pollution control and to study the feasibility of introducing them into the region.

### **Air Pollution Control Measures of the two Governments**

The enhanced control measures of the HKSAR Government include:

- To encourage the replacement of diesel light buses with clean-fuel ones: from 2002, the government offers incentives to public light bus owners to encourage early replacement of diesel light buses with LPG or electric ones;
- To retrofit particulate removal devices in pre-Euro diesel vehicles: from 2002, the government sponsors owners of pre-Euro heavy diesel vehicles to retrofit their vehicles with particulate removal devices;
- To enhance vapour recovery systems in filling stations: to introduce legislation in 2003/04 to recover VOC vapour emitted from filling stations during re-fuelling;

- To tighten fuel quality standards: motor fuel quality to comply with Euro IV standards by 2005 (diesel fuel has already complied with Euro IV standards in 2002);
- To tighten tailpipe emissions standards: to be in line with EU in adopting Euro IV standards from 2006;
- To reduce VOC emissions from printing, paint and consumer products: to introduce legislation in 2004 or 2005 to require VOC-containing products to have VOC content labels; to introduce legislation in phases to reduce the use of products with high VOC contents and to impose emission standards for printing process;
- To reduce emissions from power plants: to set the total emissions amount of SO<sub>2</sub>, NO<sub>x</sub>, and RSP from power plants before 2010. To adopt effective and flexible mechanisms (including emissions trading) to control emissions of these three pollutants from the power plants.

The enhanced control measures of the Guangdong Provincial Government include:

- To greatly reduce energy consumption per GDP and to have a safe, stable, economical, highly effective, and clean diversified energy production and supply mechanism by 2010;
- To construct LNG trunk pipeline and related facilities: to complete the first phase in 2005 to support an annual capacity of 3 million tonnes and to complete the second phase in 2009 to support a total annual capacity of 6 million tonnes and a number of LNG power plants;
- To improve 500KV dual circuit annular core transmission grid to ensure transmission of western electricity;
- To control the use of high sulphur fuel (sulphur content of coal and fuel oil should be below 0.8% in the acid rain control zone by 2005);
- To plan installation of flue gas desulphurization (FGD) system for power plants such as those in Shajiao, Huangpu, Taishan and Zhuhai; all generation units with capacity above 125MW are required to install FGD systems. To develop flexible and effective policy guidelines to encourage all thermal power generating plants to use clean and low sulphur fuel and to install desulphurization units;

- To phase out energy consuming and highly polluting coal-fired boilers and industrial furnaces, to use clean fuel, clean combustion technology or to install FGD for remaining facilities to reduce emissions;
- To phase out various industrial processes and facilities with high SO<sub>2</sub> and dust emissions;
- To ban the use of xylene as principal solvent in coatings by 2003;
- To develop fast inter-city transportation system and establish a high-speed transport system in the PRD region. To develop regional fast light-rail transportation system, proceed with the development of the Metro projects in Guangzhou and Shenzhen and build expressways in major cities, such as the district expressway in Southern Guangzhou and Shenzhen-Changping Express Trunk Road;
- To develop green transportation: major cities in the PRD region will develop clean motor vehicle action plans to develop electric vehicles, actively promote use of advance clean energy vehicles and encourage the use of clean fuels;
- To control tailpipe emissions: to fully comply with the emission standards for all new vehicles through the type approval system, strengthen annual and on-road inspections, intensify the supervision and management of vehicles to ensure that compliance rate in motor vehicle emission tests in the cities of PRD region will be over 90% by 2005, and plan more stringent tailpipe emission standards for new motor vehicles;

### **Regional Air Quality Monitoring Network**

Data provided by the Network will facilitate the monitoring of the long-term changes of air quality in the region and help to understand the effects of the various control measures on the overall air quality.

The environmental monitoring departments of the two governments have plans to set up a regional monitoring network covering the entire PRD region and with 16 monitoring stations (see the attached map) in order to regularly and continuously monitor the concentrations of air pollutants like SO<sub>2</sub>, NO<sub>x</sub>, NO<sub>2</sub>, O<sub>3</sub>, RSP, and CO. 13 monitoring stations will be converted from feasible monitoring stations according to the requirement of the regional network and 3 new monitoring stations will be

established at suitable locations. At the same time, a joint data centre will be set up by both sides to exchange real time data collected from various stations and validated data for network management, analysis and study of PRD regional air quality.

### **Regional Emissions Inventory**

Apart from closely monitoring the long-term changes of the regional air quality, it is also necessary to regularly compile emission inventories in order to collect updated information on the locations, emissions, contents and control levels of various polluting sources for assessing the effectiveness and progress of the air quality control measures.

The two governments will jointly prepare a "Handbook on Preparation of Air Emissions Inventory in the Pearl River Delta Region" (Preparation Handbook) and develop a set of standard preparation and calculation methods. This is to ensure that the environmental protection departments of the two governments will compile and update the PRD Regional Emissions Inventory (Emissions Inventory) on the same basis, which can further enhance the comparability of the emission estimations of the two sides. This will also help to accurately understand the characteristics of the emissions in the region for the analysis and assessment of the effectiveness of various pollution control measures.

The Preparation Handbook will make reference to current international standards. It will set out in detail the sources of the major air pollutants in the PRD region and their leading reactants (e.g. SO<sub>2</sub>, NO<sub>x</sub>, RSP and VOC). It will also provide the methods for emission estimations, emission factor selection, and the collection, collation and validation of emission information of various emission sources, their emission characteristics and types of control measures. Besides, the Handbook will list in detail the specific action plan and the quality control and assurance methods for the preparation of the emissions inventory.

The two governments will commission experts on major pollution sources to prepare the annual emissions inventory in accordance with the Preparation Handbook, and to revise the Handbook once every three years to ensure that it is in line with current international standards. At the same time, studies will be conducted on a need basis

with a view to perfecting the Handbook by incorporating base data relevant to the region.

### **Strengthening Technical Exchange and Training of Officers**

The two governments will arrange for the technical exchange and training of officers to enhance their knowledge and technological capabilities in regional air quality issues. The exchange and training programmes will include workshops, seminars, visits, etc. Where necessary, academics and experts in and out of the region will be invited to participate. In the light of the technical exchange and training needs, the two governments will develop and implement the annual exchange and training programme, and revise its contents, frequency and formats on a timely basis.

### **Gathering information on new technologies and measures**

Given the continuous development of new technologies and measures for improving regional air quality, the two governments will gather and exchange local and overseas information on new technologies and measures so that the air quality management methods and standards can better meet the current needs and be more effective. Besides, relevant experts in and out of the region will be invited to exchange views with a view to enhancing our understanding of the new technologies and measures.

### **Updating of the PRD Air Quality Management Plan**

The Special Panel will constantly review the implementation progress and effectiveness of this Management Plan, and report the progress to the Expert Group with recommendation for modification where necessary, for onward transmission and consideration by the JWGSDEP.

**Location Map of the Monitoring Stations of the Regional Air Quality Monitoring Network**

