Table A

Pearl River Delta Regional Air Quality Management Plan Enhanced Control Measures of the HKSAR

Measures	Implementation Programme	Progress (Up to 30.11.2007)
replacement of	Since 2002, the Government has offered incentives to diesel light bus owners to encourage replacement of diesel light buses with liquefied petroleum gas (LPG) or electric ones.	The incentive scheme was introduced in August 2002 and completed by 31 December 2005. Up to the end of October 2007, there were a total of 2,474 public LPG light buses, accounting for 56.9% of the entire public light bus fleet.
Require the retrofitting of particulate removal devices on pre-Euro diesel vehicles (already commenced)	assistance has been provided for retrofitting pre-Euro heavy diesel	Financial assistance was provided in phases from December 2002 to December 2005 to retrofit pre-Euro heavy diesel vehicles with catalytic converters. All together, about 36 500 eligible vehicles were installed with catalytic converters. Since April 2006, all pre-Euro heavy diesel vehicles (including franchised buses), except long-idling ones were required to be installed with approved emission reduction devices. With effect from April 2007, emission reduction devices were also required to be installed on pre-Euro heavy diesel vehicles under long idling situations (including lorries with cranes mounted, concrete mixers, pressure tankers and gully emptiers).
Encourage vehicle owners to replace pre-Euro and Euro I commercial diesel vehicles with Euro IV models	(New item included in December 2006) A financial incentive scheme was introduced in the second quarter of 2007.	With effect from 1 April 2007, the Government offers a time-limited one-off grant to vehicle owners to encourage the early replacement of pre-Euro and Euro I diesel commercial vehicles with new ones complying with the statutory emission standard for newly registered vehicles (the prevailing standard is Euro IV). As at the end of October 2007, a total of 2,258 applications were approved.
Encourage	(New item included in	With effect from 1 April 2007, a reduction in

Measures	Implementation Programme	Progress (Up to 30.11.2007)
members of the public to use environmentally friendly petrol private vehicles	December 2006) With effect from 1 April 2007, a 30% reduction in the First Registration Tax was offered, subject to a cap of \$50,000 per vehicle.	the First Registration Tax is being offered to buyers of newly registered environment-friendly private petrol vehicles. As at the end of October 2007, a total of 2,509 environment-friendly private petrol vehicles were benefited under the scheme.
Require drivers to switch off idling vehicles with running engines	(New item included in December 2007) A public consultation on the proposal to introduce legislation requiring drivers to switch off idling vehicles with running engines is being conducted.	
Strengthen the control of emissions from petrol and LPG vehicles	(New item included in December 2007) To consult the stakeholders on the proposal to strengthen the control of emissions by using roadside remote sensing device and chassis dynamometer for emission testing.	
Enhance the vapour recovery systems in petrol filling stations	The Air Pollution Control (Petrol Filling Stations) (Vapour Recovery) Regulation was amended in 2004 to require the recovery of petrol vapour emitted during vehicle refuelling at petrol filling stations, with effect from 31 March 2005.	With effect from 31 March 2005, all new petrol filling stations must have vapour recovery systems built in. Also, all existing stations must be retrofitted with the system by 31 March 2008.
Tighten motor	Motor fuel standard would	Euro IV petrol standard came into effect on 1

Measures	Implementation Programme	Progress (Up to 30.11.2007)
fuel standard	be tightened to Euro IV standard by 2005 (motor diesel standard has already been tightened to Euro IV standard since 2002).	January 2005.
	(New item included in December 2007) To introduce motor vehicle fuels complying with Euro V standard.	The duty rate for Euro V motor vehicle diesel was reduced to \$0.56 per litre for a period of two years so as to encourage the early supply of this more environment-friendly fuel on the local market.
Tighten the emission standard for newly registered	Euro IV emission standard was adopted since 2006.	Euro IV emission standard was introduced on 1 January 2007 for all newly registered vehicles.
vehicles	(New item included in December 2005) To be in line with EU in adopting Euro V motor vehicles standard for tailpipe emissions.	Planned to adopt Euro V standard for tailpipe emissions from heavy-duty vehicles exceeding 3.5 tonnes on 1 October 2009, in tandem with EU.
Reduce VOC emissions from the printing process, paints	To introduce legislation in 2004 or 2005 to require the labeling of VOC content on VOC products.	enforced the new Regulation in phases to restrict the VOC content of architectural paints/coatings, printing inks and six major
and consumer products	Legislation will then be introduced in phases to reduce the use of products with high VOC contents and to impose emission standards for the printing process.	types of selected consumer products (i.e. air fresheners, hairsprays, multi-purpose lubricants, floor wax strippers, insecticides and insect repellents). Lithographic heatset printing machines are also required to be installed with emission control devices from 1 January 2009.
Reduce emissions	Effective and flexible	The Government approved the emission

Measures	Implementation Programme	Progress (Up to 30.11.2007)
from power stations	mechanisms (which may include emission trading) will be set up to control the total emissions of SO ₂ , NOx and RSP from power stations to achieve respective reduction targets by 2010.	reduction options set out in the financial plans of the two power companies in June 2005. CLP Power Hong Kong Limited will provide desulphurization and denitrification systems for four of its coal-fired generating units each of 677MW. Hong Kong Electric Co. Ltd. (HEC) will provide low-NOx burners and desulphurization systems for two of its coal-fired generating units each of 350MW. CLP has been increasing the use of ultra low sulphur coal and is seeking to increase natural gas supply through the development of liquefied natural gas reception facilities.
		HEC has formally commissioned its first natural gas generation unit of 335MW in October 2006. The first commercial scale wind turbine power generation unit of 800kW was also commissioned in Hong Kong in February 2006.
	(New item included in December 2005) Control total emissions from power plants.	Emission caps have been included in the SPLs granted to CLP's Castle Peak Power Station, Black Point Power Station and Penny's Bay Power Station as well as HEC's Lamma Power Station. Emission caps will gradually be tightened, with a view to reducing emissions to the practical minimum and achieving the 2010 reduction targets. The Air Pollution Control Ordinance is being amended to facilitate the power companies to
		conduct emission trading, and to specify the emission caps for 2010 and thereafter.
Reduce emissions from industrial and commercial processess	(New item included in December 2007) To use ultra-low sulphur diesel (ULSD) in industrial and commercial processes.	A consultation exercise is being conducted on the introduction of legislation requiring the use of ULSD in all industrial and commercial processes.
Enhance energy efficiency of	*	

Measures	Implementation Programme	Progress (Up to 30.11.2007)
buildings	To consult the public on the proposal to mandate compliance with the Building Energy Codes.	
Energy Efficiency Labelling Scheme	(New item included in December 2007) To take the Energy Efficiency (Labelling of Products) Bill through the legislative process.	The aim is to roll out the first phase of the mandatory Energy Efficiency Labelling Scheme within 2008 and to start planning for the coverage of the second phase in 2007.
Encourage to adopt cleaner production technologies and processes	The Hong Kong	

Pearl River Delta Regional Air Quality Management Plan

Enhanced Control Measures of the Guangdong Provincial Government

Measures		Implementation Programme	Progress (Up to 30.11.2007)
Use clear energy	aner	To reduce gradually the energy consumption per 10000 Yuan GDP. To establish by 2010 a diversified energy production and supply system that is safe, stable, economical, efficient and clean.	The energy consumption per 10000 Yuan GDP of Guangdong amounted to 0.771 tons of standard coal equivalent in 2006, down by 2.93% as compared with that in 2005. The energy consumption per 10000 Yuan GDP will achieve a decrease of 13% in 2010 as compared with that in 2005.
			To reduce reliance on more polluting fuel like coal and oil, Guangdong is developing two new natural gas projects apart from the Guangdong Liquefied Natural Gas (LNG) Project –
			(a) CNOOC Zhuhai Natural Gas Pipeline Project, with a capacity of about 1.19 million tonnes/year, has utilized natural gas from the South China Sea since February 2006; and
			(b) Zhuhai LNG Receiving Station Project, with a capacity of 3 million tonnes/year for Phase I, is expected to be commissioned partially by 2010.
			The power plants that have been converted to the use of natural gas as fuel include Zhongshan Hengmen Power Plant, Zhuhai Hongwan Power Plant (since February 2006) and Shenzhen Nanshan Power Plant (since April 2007).

Measures	Implementation Programme	Progress (Up to 30.11.2007)
	To construct natural gas trunk pipeline and the associated works. To complete Phase I in 2005 that will have a capacity of 3 million tonnes/year. In 2009, to complete Phase II that will increase the total capacity to 6 million tonnes/year and finish construction of a number of natural gas power plants.	The capacity of Guangdong LNG Project Phase I has been expanded from 3 million tonnes/year to 3.7 million tonnes/year and gas supply was started in mid 2006. The total capacity for Phase II will be expanded to 7 million tonnes per year. The four newly built natural gas power plants with a total of 11 generating units have all been commissioned in 2006 and 2007. Residents in Shenzhen, Guangzhou, Dongguan and Foshan can also use natural gas supplied through pipeline network.
	To improve by 2005 the 500KV dual circuit annular core transmission grid to ensure transmission of electricity from western provinces.	The 5 AC and 3 DC main transmission channels from western provinces have been completed.
	(New item included in December 2006)	Being implemented.
	To rationalize the distribution of new power stations. Apart from proper construction of generating units for combined heat and power supply and those thermal power plant projects which have been reported to the State for planning and building, no more new coal-fired and oil-fired power plants will be planned for building in the PRD region.	
	(New item included in December 2006)	Being implemented.
	To gradually enlarge the scale of electricity transmission from western provinces to Guangdong.	
Control the sulphur content of fuel		Being implemented. By 2010, enterprises which have not installed desulphurization system would have their fuel sulphur content controlled at below 0.7% for coal and below 0.8% for fuel oil. Those not meeting the limits would need to use sulphur fixing agents or

Measures	Implementation Programme	Progress (Up to 30.11.2007)
		sulphur removal agents.
Reduce emissions from coal-fired and oil-fired power stations	power generating units. Power	The Guangdong Provincial Government announced its plan in March 2007 to close down small thermal power generating units with a total capacity of 9 660MW in the Province by the end of 2010, including those with a total capacity of about 7 100 MW in the PRD Economic Zone – about 1600 MW to be closed down in 2007, 3 600 MW in 2008 and 1 900 MW in 2009. (See Table C)
	To install flue gas desulphurization systems at the power plants in Shajiao, Huangpu, Taishan and Zhuhai by 2005.	already been installed (including works pending official check and acceptance) for generating units with a capacity of around
	To require all oil-fired and coal-fired generating units of capacity above 125MW to be equipped with flue gas desulphurization systems by 2007.	14 200 MW, thereby reducing the annual SO ₂ emission by more than 300 000 tonnes. In addition, generating units of around 1 000 MW are being retrofitted with this system.
	(New item included in December 2005)	Low-NO _X combustion technologies have already been required at all units in case of
	To require all coal-fired and oil-fired power plants to adopt low-NOx combustion technologies in case of alteration or expansion.	alteration or expansion.
	(New item included in December 2007)	
	To require all coal-fired and oil-fired power plants under construction, alteration or expansion to install flue gas denitrification systems.	
	(New item included in December 2006)	Being implemented.
	To promote the installation of low-NOx combustion device at existing coal-fired and oil-fired power plants.	

Measures	Implementation Programme	Progress (Up to 30.11.2007)
	(New item included in December 2007)	
	To study the feasibility of installing flue gas denitrification systems for existing power plants.	
	(New item included in December 2006)	Being implemented.
	To require all power plants under construction, alteration or expansion to install flue gas desulphurization equipment, particulate removal devices and automatic continuous emissions monitoring system.	
	(New item included in December 2006)	Being implemented.
	To enhance technological improvements of existing power plants and to implement cleaner production. Newly built power plants have to meet the advanced standard on cleaner production in the country.	
	(New item included in December 2006) To materialize the subsidization policy for thermal power plants to desulphurize by giving concessions, support and assistance in land acquisition for desulphurization systems and import of essential equipment so as to facilitate the full implementation of desulphurization projects.	From 1 July 2006, power plants with desulphurization system receive an extra RMB 1.5 cents per unit when the electricity is sold to the power grid.
	(New item included in December 2006)	Being implemented.
	To establish a province-wide quota administration system for total emissions of sulphur dioxide and to study the emissions trading mechanism of sulphur dioxide.	

Measures	Implementation Programme	Progress (Up to 30.11.2007)
Control emissions from industrial boilers and industrial processes	capacity of less than 2 tonnes/hour in	than 2 tonnes/hour has been largely phased out in the urban areas of cities in the region. Removal devices for particulates must be installed onto all industrial boilers. Restaurants located in sensitive areas and restaurants the operation of which would seriously affect public production must be installed with devices to purify cooking fumes.
		Guangzhou In 2006, 8 532 catering business in the City had switched to clean energy; 4 371 had installed fumes regulating facilities, and the use of clean energy by stoves of catering business in the developed area had reached 94.13%.
	To continue phasing out various production technologies and installations that have caused serious pollution by emitting sulphur dioxide, smoke and particulates.	To implement on a mandatory basis a system to phase out enterprises, various production technologies and installations that have caused serious pollution. No construction of new cement plants and extension of cement plants will be planned in the PRD Region. Future development will focus on projects of new dry-type cement plant with daily production capacity of more than 4 000 tonnes. Projects of new dry-type rotary kiln cement plant with daily capacity of 2 500 tonnes and below will be prohibited. Programmes are being implemented to phase out high energy consuming and highly polluting cement plants, production lines of vertical kilns, dry hollow kilns, Lepol kilns and wet process kilns. The relocation project of Guangzhou Cement Plant, completed by end 2005, was estimated to reduce particulate emissions in the Region by approximately 3 000 tonnes/year. Sanshui Area in Foshan City will close down some cement production units by the end of 2007 and all existing vertical kiln cement production units will be closed down at the end of September 2008.

Measures	Implementation Programme	Progress (Up to 30.11.2007)
	(New item included in December 2005) To actively study the technologies for controlling emission of nitrogen oxides from stationary sources such as power plant boilers, industrial boilers and restaurant boiling water furnaces.	Emission of nitrogen oxides from stationary sources such as electricity station boilers, industrial boilers and restaurant boiling water furnaces will be under control in 2010.
	(New item included in December 2006) Location and planning of industries causing serious pollution will be strictly determined and administered centrally. The system of environmental assessment of construction projects will be enhanced.	Being implemented.
	(New item included in December 2006) For industrial sectors such as petrochemicals, steel, non-metallic mineral products, paper and paper products, textile and dyeing, technological improvement at existing enterprises will be enhanced and cleaner production will be implemented. New projects have to meet the advanced standard on cleaner production in the country.	Being implemented.
	(New item included in December 2006) Initiate vapour recovery at petrol filling stations, tanker trucks and oil depots. (To be amended in December 2007) To fully implement the vapour emission standard for all oil depots, tanker trucks and petrol filling stations.	Planned to implement from 1 January 2010 in the cities of the PRD Region the vapour emission standards for all oil depots, tanker trucks and petrol filling stations.

Measures	Implementation Programme	Progress (Up to 30.11.2007)
Reduce the emission of VOC from paints		Work completed. From 1 January 2006, all water-based paints and adhesives were required to comply with the technical requirement of labelling environmentally friendly products. All water-based paints and adhesives bearing an environmentally friendly label have to comply with the VOC content limit.
	(New item included in December 2007) To study the feasibility of imposing limits on the VOC content of paint products.	
Reduce tailpipe emissions from motor vehicles		Phase I of Shenzhen-Shenping Express has already been commissioned. Rail system between Guangzhou and Zhuhai started construction in December 2005. The system, 144km in length with a maximum speed of 200km/hr, is expected to be completed by 2009.
	To develop green transport by implementing clean vehicle action programmes in major cities of the region. To encourage the use of clean fuels, develop electric vehicles, actively promote the use of advanced clean fuel motor vehicles and step up the development of public transport.	- Formulated the "Medium to Long Term Planning for the Development of Clean Vehicles in Shenzhen".

Measures	Implementation Programme	Progress (Up to 30.11.2007)	
		Guangzhou	
		- Active promotion of LPG public transport vehicles. As at August 2007, there were 6 400 LPG-driven public buses in Guangzhou, accounting for 80% of all public buses in the city. The 16 000 taxis in the city have by and large completed the LPG modification.	
		- At present, there are 27 LPG refilling stations.	
		<u>Huizhou</u>	
		- From 1 August 2007, all newly added public transport vehicles are required to comply with National III emission standard.	
	To require all new motor vehicles to fully meet emission standards. To step up annual inspection and on-road spot checks of in-use vehicles. To strengthen the control of in-use vehicles to ensure that over 90% of motor vehicles in the cities within the region will meet tailpipe emission standard by 2005.	The National II emission standard has been adopted since 1 July 2005. A recommended catalogue of motor vehicles complying with the National III emission standard has been introduced on 1 July 2006 to encourage and support the sale, import, purchase and use of motor vehicles on the catalogue. An application has been filed with the State Council to advance the implementation of the National III emission standard in the PRD cities.	
		Guangzhou	
		 The requirement for all newly registered vehicles to comply with the National III emission standard has been advanced to 1 September 2006. A total of 41 470 motor vehicles were 	
		spot checked in 2006 and 9 719 motor vehicles with excessive emissions were required to carry out maintenance works in order to comply with the emission standard within the specified period.	

Management	Implementation	Progress (Up to 30.11.2007)		
Measures	Programme			
		- The "blacklist" of smoky vehicles with excessive emissions was first published on the Guangzhou Environmental Protection website in August 2007.		
		Shenzhen		
		- The catalogue of motor vehicles complying with the National III emission standard has been adopted and enforced since 1 July 2007.		
		- A reporting and joint investigation system for smoky vehicles is established.		
		- A total of 41 300 motor vehicles had undergone roadside inspections or random checks on visit in 2006, of which 6 230 motor vehicles with excessive emissions were prosecuted.		
	(New item included in December 2005)	Preparatory work is being conducted.		
	To study the feasibility of advancing the implementation of National IV emission standard for light-duty vehicles by 2010.			
	To study the feasibility of advancing the implementation of National V emission standard for heavy-duty vehicles by 2010.			
	(New item included in December 2005) To strengthen management on regular inspections of in-use motor vehicles to make sure that the required environmental performance is met.	The in-use motor vehicles inspection / maintenance system is progressively implemented and improved. Non-compliance motor vehicles are prohibited from using the roads. Shenzhen The pollutant emissions inspection and mandatory maintenance system for motor vehicles is implemented since 1 December 2007.		
	(New item included in December	Shenzhen –		

Measures	Implementation Programme	Progress (Up to 30.11.2007)		
	To experiment a labelling system on the environmental categorization of in-use vehicles in key cities, and to regulate and restrict vehicles of certain categories using the road according to the ambient air quality.	A labelling system on the environmental categorization of motor vehicles is introduced.		
		<u>Guangzhou</u> –		
		Starting from 1 January 2007, motor vehicles complying with the National III emission standard will be awarded the environmental label.		
	To vigorously promote the sale of motor vehicle fuel complying with National III standard in the province.	Guangdong Province has already announced the local National III standard for motor fuel in August 2006.		
		The extension and reconstruction project of Guangzhou Sub-company, Sinopec was commissioned on 9 September 2006. The company is now capable of producing motor fuel complying with National III standard.		
		Guangzhou –		
		Up to the end of 2006, motor fuel complying with the National III standard was provided in 41 petrol filling stations within the city.		
		Shenzhen –		
		Starting from 16 April 2007, motor fuel complying with the National III standard has been made available at all petrol filling stations across the city.		
	(New item included in December 2006) To study ways to control the growth of motorcycles in key cities.	Motorcycles have been banned from travelling in the urban areas in Guangzhou and Dongguan since 1 January 2007 and 1 September 2007 respectively.		

Schedule for Closing Down Major Small-scale Thermal Power Generating Units in the Cities of PRD Economic Zone between 2006 and 2010

Table C

	Capacity	Time and Capacity (MW)			
Cities	to be Closed Down (MW)	2007	2008	2009	2010
Guangzhou	2336	570	500	1265	-
Shenzhen	765	682	83	-	-
Zhuhai	229	-	229	-	-
Huizhou	250	-	250	-	-
Dongguan	350	-	-	350	-
Zhongshan	519	-	519	-	-
Foshan	2043	-	2009	34	-
Jiangmen	549	399	-	150	-
Zhaoqing	147	-	-	147	-
Total	7187	1650	3591	1946	-

Pearl River Delta Air Quality Management and Monitoring Special Panel Summary of 2008 Action Plan

Assess the Progress of the Management Plan

- Conduct at least 2 site inspections to assess the progress of implementing various measures in the Management Plan
- Consider the inclusion of the recommendations made in the mid-term review of the Management Plan
- Review the progress and effectiveness of the Management Plan and recommend new items to be included

Regional Air Quality Monitoring Network

- Publish on a daily basis the Regional Air Quality Index to the public
- Submit the Monitoring Report on the Guangdong-Hong Kong PRD Regional Air Quality Monitoring Network and the Report on the Operation of the Regional Air Quality Monitoring Network in April and October 2008
- Carry out thematic studies by making use of the data collected by the Regional Air Quality Monitoring Network, where necessary
- Recommend and commence thematic research projects

Regional Emissions Inventory

 Exchange information on emissions in the PRD Region in 2007 and keep informed of the distribution of different pollution sources and the effectiveness of emission reduction measures

Enhance Technical Exchanges and Training of Personnel

- The scope of technical exchanges includes:
 - Operation of the regional air quality monitoring network and compilation of emissions inventories
 - Studying the feasibility of early adoption of National IV/V motor vehicle emission standard in the PRD Economic Zone
 - In-use vehicles emissions inspection technologies and management
 - Setting of the air quality objectives
 - Continuous emissions monitoring systems for stationary pollution sources
 - Flue gas de-NO_X technology for thermal power plants
 - Emissions reduction technology for industrial pollution sources

Emissions Trading Pilot Scheme for Thermal Power Plants in the PRD Region (the "Pilot Scheme")

A newly formed Emissions Trading Management Group will assist the two
governments in the implementation of the Pilot Scheme and report on its
operation. The special panel will report to the expert group and the joint
working group on the relevant details if and when necessary.

Follow-up on the mid-term review of the Management Plan

 Follow up the recommendations made in the mid-term review of the Management Plan and consider incorporating the enhanced measures into the Management Plan and carry out follow-up work