

## **EnviroSeries Conference**

### ***Living Under Blue Skies: Power and Transport Infrastructure in the Pearl River Delta***

**12 May 2005**

#### ***Background***

“Living under blue skies” was the theme for this EnviroSeries Conference organized by the Business Environment Council and the Chartered Institution of Water and Environmental Management on May 12, 2005, namely Hong Kong’s quest to obtain better air quality standards both locally and in the PRD region. According to 1997 figures, roughly 80-90 percent of Hong Kong’s air pollutants come from upstream activities in the PRD. More up to date figures are unavailable, but it is likely that these impacts have not abated and, if anything, have worsened.

The identified sources of air pollution are the transport and power sectors. Within Hong Kong, accurate data exists on the levels of air pollutants emitted from these sources; however equivalent information is unavailable from PRD cities. The purpose of the conference was to put Hong Kong’s position into the wider perspective of regional development and how growth in infrastructure has broad environmental implications that counter the perceived economic benefits.

#### ***Government’s Position***

Mr. Keith Kwok JP, Permanent Secretary for the Environment, opened the conference with a statement on how the Hong Kong Government was addressing this issue. His speech highlighted the difficulties associated with the dispersion of air pollutants and the high visibility of the problem. The Hong Kong Government has been working closely with the Guangdong Environmental Protection Department on setting up a regional monitoring network as part of a joint Air Quality Management Plan. Both governments

are targeting the transport and power sectors to control the quality of diesel fuel used in vehicles and to reduce reliance on coal and shift towards the use of cleaner natural gas respectively. Mr. Kwok further referred to the air emissions trading scheme being the subject of study, the results of which should emerge in mid-2006.

### ***Transport Sector***

Mr. Fred Brown from MVA Consultants provided a regional overview of the development of highways and the need for the latter to serve the coastal ports, inter-urban linkages and inland PRD locations. Growth in vehicular traffic is inevitable as private ownership will increase (estimated to be 20 percent per annum). The linkage to the western part of the PRD is a key part of the regional transport development – the proposed Hong Kong-Zhuhai-Macau bridge thus represents the final component of a circular ring road encompassing the PRD region.

On the topic of cross-boundary linkages between Hong Kong and the hinterland, Mr. SY Chan of Ove Arup and Mr. CH Lam from Highways Department both gave presentations on the Shenzhen Western Corridor and the Hong Kong-Zhuhai bridge respectively. Presenting the perspective from the shipping industry, Mr. Kenneth Ying from Hongkong International Terminals, spoke of the merits of using river barge transport as a means of alleviating road traffic. The question of encouraging more rail transport for freight was raised, however Mr. Ying pointed out that freight rail was only cost-effective beyond a 350 km radius.

Using data from the Hong Kong Government's 2030 Study, Dr. Hung Wing-tat of the Hong Kong Polytechnic University provided an account of the future for the PRD transport sector and the implications for Hong Kong's air quality. By 2030, it is anticipated that there will be 200,000 or so vehicles crossing the boundary every day, the majority of which would be commercial vehicles. Clearly with this volume of traffic, control of air emissions is critical. However as Dr. Hung explained, the cost of retrofitting particulate traps on say 20

percent of the total PRD traffic fleet could amount to up to \$70 billion. Rail as an option is feasible provided the right capital funding model could be employed, but current proposals in this area are not being widely developed.

In the questions that followed, members of the audience raised queries on the validity of the current air quality objectives being followed in planning and designing transport infrastructure, why rail transport infrastructure was not more extensively encouraged (particularly as a feature for the HK-Zhuhai bridge), the potential for more river barge transport and the possibility of setting up a fund dedicated to tackling cross-boundary air pollution issues.

### ***Power Sector***

In the second session of the conference, Mr. Bill Ruccius, an independent consultant, opened with a talk on the current installed capacity of the PRD, which is about 72,000 MW. Mr. CT Wan of Hong Kong Electric followed this up with his estimates of the current shortfall in energy within the PRD, which in effect represented a capacity gap of 4,500 MW based on the 9 percent per annum growth of the region. About 90 percent of the current energy need is supplied from within the PRD, the remainder coming from the western provinces (9 percent) and Hong Kong (1 percent). Mr. Wan further pointed out that some cross-boundary supply took place from Guangdong to Hong Kong but the distance, transmission network reliability and environmental standards of generation were factors to be taken into account. The Guangdong Government is reported to be imposing a pollution tax of 60 RMB per kg of SO<sub>2</sub> emission in July 2005.

Mr. Richard Lancaster of China Light & Power explained in his talk the importance of fuel choice, choice of combustion process, air emission capture systems, energy efficiency and emissions trading in curbing air pollution from the power sector. Mr. Lancaster focused on the use of natural gas in power generation as a clean alternative to coal and used the opportunity to promote CLP's planned receiving terminal for ships bearing LNG to Hong Kong. In

addition, he stressed the importance of obtaining the right fuel mix for security of supply reasons as well.

Questions from the audience were directed towards more use of renewable energy, more initiatives on energy efficiency and whether there were genuine opportunities in China for cleaner energy generation using the know-how developed in Hong Kong.

### ***Institutional Matters***

Mr. Leo Leung of Hopewell Highways presented an interesting account of the need and the business case for more highway infrastructure in the PRD. Dr. James Wang of the Hong Kong University later provided a response that there was an argument for more rail infrastructure but due to the economic and political factors, highways tended to be favoured. As a possible alternative, Hong Kong could actually reduce the amount of container boxes going through its ports and concentrate on other higher value added services instead.

Dr. Yok-shiu Lee of Hong Kong University explained that much of the problem in resolving cross-boundary air pollution was institutional in nature and that whilst the dialogue took place at provincial level between Hong Kong and Guangdong, the actual implementation occurred at local level. Dr. Lee suggested that the Hong Kong Government was reluctant to initiate cross-boundary air quality improvement projects due to a perceived need to preserve Hong Kong's autonomy and, as a result, "non-interference leads to non-communication". Lack of information is also a problem as policy cannot be formulated without robust technical data. To address this problem, Dr. Lee proposed that there should be a local Agenda 21 programme for both sides to adopt, together with multi-layer coordination and communication and the appropriate institutional mechanisms to bring other stakeholders into the equation.

### ***Business-led Initiatives***

Dr. Thomas Tang from the Business Environment Council provided an account of the current business-led initiatives being run to tackle air pollution. These included the various initiatives led by the Chambers of Commerce, notably the Business Coalition on the Environment's Charter of self-declaration, the "1-1-1" factory initiative organized by the Hong Kong Federation of Industries, the fuel switching campaign by Civic Exchange and the Council's own stakeholder engagement initiative on promoting best practices, clean energy and use of financial instruments. Dr. Tang paid recognition to the extensive efforts by the Hong Kong Government but stressed that business together with civil society had a major role to play as well in addressing air pollution.

Mr. Otto Poon from the Council for Sustainable Development further pointed out that Hong Kong businesses should focus on the higher added value activities and encourage clean fuel usage and energy efficiency thereby setting a good example to the rest of the region. (Incidentally, Hong Kong (according to this author's rough calculations) consumed 5,000 kWh per capita in 2002, compared an average of 1,500 kWh per capita in the rest of the PRD.) Mr. Poon suggested that externalities should be factored into the calculation of operating costs whereby companies would know the true costs of business and act accordingly.

### ***Conclusions***

The conference ended on a high note with members of the audience providing interesting comments as well as questions to the different panels of speakers. The exercise demonstrated the collective wealth of knowledge of the speakers and this should be used as the basis for future work into tackling air pollution. Professor Anthony Hedley of the Community Medicine College (HKU) provided good scientific evidence that reductions in air pollutants (taking the



case of sulphur restrictions introduced in Hong Kong in the 1990s) could result in measurable benefits. Learning from this conference, participants, including Government representatives who were in attendance in the audience, can take heart in the fact that solutions can be found, provided the political will and wisdom prevail.

*Thomas Tang (BEC), 16<sup>th</sup> May 2005*