

**Panel on Environmental Affairs**  
**Subcommittee on Issues Relating to Air, Noise and Light Pollution**  
**Follow-up actions arising from the discussion**  
**At the meeting on 28 June 2013**

- **Item 2(a) – Administration’s Responses to submissions from Dr Nicky Lam and Professors Jimmy Fung and Alexis Lau**

Our responses to the submissions from the professors are given in Annexes 1 and 2, respectively.

- **Item 2(b) - Latest progress in enhancing the PATH (“Pollutants in the Atmosphere and their Transport over Hong Kong”) model and details of the enhancement to be made.**

The key enhancements being introduced by the Environmental Protection Department (EPD) to the PATH modeling system include the following –

- (i) Upgrade of its key modules

The PATH system consists of three key modules: an Emission pre-processor, a Meteorological simulation model and a Chemistry transport model. They together simulate the atmospheric physical and chemical processes from sources to receptors.

Since the setting up of the PATH modeling system in 2001, updated versions of the above key modules have been released. We have thus engaged a consultant to update these modules –

Module	<u>Existing version</u>	<u>Updated version(s)</u>
Emission Pre-processor	EMS-95	SMOKE
Meteorological Simulation Model	MM5	WRF
Chemistry Transport Model	SAQM	CMAQ / CAMx

The updating will also bring along useful tools for tracking pollutants from sources to receptors, which will help analyse the contributions from different pollution sources to the air pollution levels at air sensitive receptors. Besides, the new modules have more efficient computational structures to take advantage of advancements in computer hardware, and more refined treatment of particulate chemistry.

(ii) Enhancement of spatial resolution

The above three new modules have model grids of higher vertical and horizontal resolutions (e.g. horizontally increased from the current 1.5km x 1.5km to 1km x 1 km) to provide more detailed air quality simulation outputs.

(iii) Enhancement of computer hardware to host the modeling system

The new PATH modeling system will be hosted on a computer system equipped with multiple-core parallel processing to increase the computation speed and hence reduce the time of simulation.

We are currently validating these new modules. We will engage air modeling experts and academics in the exercise.

- **Item 2(c) -**

**How the Administration would enhance the transparency of the air quality modeling system and its applications in the environmental impact assessment process through closer communication with interested parties, the academic sector and other stakeholders.**

Over the past years, the EPD has been making exchanges with key stakeholders including local air modeling experts, academics, environmental consultants and green groups in respect of air quality modeling and its applications in the environmental impact assessment process. We will continue the exchanges and engage the experts in this highly specialized subject.

**Environmental Protection Department  
September 2013**

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**Administration's Responses to  
"Improve data transparency on air pollution modeling to gain public trust"  
submitted by Dr Nicky Lam of the City University of Hong Kong  
on 26 June 2013  
Ref: CB(1)1393/12-13(01)**

The responses of the Environmental Protection Department (EPD) to Dr. Nicky Lam's comments/suggestions are as follows.

**The PATH Model**

2. The PATH modeling system was established in 2001 by integrating scientifically robust meteorological, emission and chemistry transport simulation modules. In a meeting between EPD and local air modeling experts in June 2013, there was a general consensus among the experts that the formulation of the current PATH was scientifically robust and hence the PATH modeling system was suitable for simulating background pollutant concentrations in Hong Kong.

3. Since the setting up of the PATH modeling system in 2001, updated versions of the above key simulation modules have been released. We have engaged a consultant to update the relevant modules in the air modeling system. The updating will bring along useful tools for tracking pollutants from sources to receptors, which can help analyse the contributions from different pollution sources to the air pollution levels at air sensitive receptors. Besides, the new modules have more efficient computational structures to take advantage of advancements of the computer hardware, and also more refined treatment of particulate chemistry.

4. The new modules have model grids of higher vertical and horizontal resolutions (horizontally increased from the current 1.5km x 1.5km to 1km x 1 km) to provide air quality simulation outputs in finer resolution. We are currently validating the various new modules. We will engage air modeling experts and academics in the exercise.

## **Data Transparency**

5 Upon request, the EPD has been providing local emission data including the gridded spatial emission and meteorological data to members of the public including the air modeling experts, academics and environmental consultants for air quality modeling purposes.

6. The assumptions on air quality control policies and improvement measures for estimating emissions used in PATH for prediction of future background pollutant concentrations vary with the year of simulation and are case-specific. In the environmental impact assessment (EIA) of any designated project, the emission assumptions are worked out by the project proponent to suit the year of assessment and are required to be documented in the study report. The summary for key assessment assumptions and all related supporting documents are currently provided in the form of an Appendix to the EIA study reports. In vetting the EIA reports, the EPD will ensure that the assumptions on the air quality control policies and improvement measures used for estimating emission for future years are consistent with the Government's prevailing and committed policies.

7 We will require the project proponents to consolidate the assumptions / information related to emission estimation in a summary table in future EIA reports for easy reference.

## **Engagement with Academics on Air Modeling Development**

8. Over the past years, the EPD has been making exchanges with key stakeholders, including local air modeling experts, academics, environmental consultants and green groups in respect of air quality modeling and its applications in the EIA process. We will continue the exchanges and engage the experts in this highly specialized subject.

**Environmental Protection Department**  
**September 2013**

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**Administration's Responses to the submission from  
Professors Jimmy Fung and Alexis Lau of the  
Hong Kong University of Science and Technology  
on 27 June 2013  
Ref : CB(1)1393/12-13(02)**

The responses of the Environmental Protection Department (EPD) to Professors Jimmy Fung and Alexis Lau's submission are as follows.

**Consistency between Government Policy Commitment and Emission Assumptions in Environmental Impact Assessment (EIA)**

2. To protect public health, the Hong Kong Government has been formulating and implementing air pollution control policies and measures for achieving the air quality objectives (AQOs) as soon as practicable. At the same time, we also require major projects to undergo the EIA process to avoid causing unacceptable impacts on nearby air sensitive receptors.

3. In vetting the EIA reports, EPD will only accept assumptions on control policies and measures supported by the Government's prevailing and committed policies and measures. Initiatives that are still under deliberations, such as adopting an incentive-cum-enforcement approach to phase out pre-Euro IV diesel commercial vehicles, designating the Pearl River Delta Region as an Emission Control Area, etc. will not be accepted for estimating future emissions until they have been adopted as public policies for implementation.

## **Data Transparency**

4. Upon request, the EPD has been providing local emission data including the gridded spatial emission and meteorological data to members of the public including air modeling experts, academics and environmental consultants for air quality modeling purposes.

5. As for an EIA of a designated project, the project proponent will have to work out appropriate assumptions for estimating the emissions for the relevant study years in the EIA. When vetting the EIA report, EPD will only accept assumptions that are supported by committed policies and measures of the Government. The project proponent will have to document the relevant assumptions in the study report. A summary of key assessment assumptions and all related supporting documents are currently provided in the form of an Appendix to the EIA study report.

6. We will require the project proponents to consolidate the assumptions / information related to emission estimation in a summary table in future EIA reports for easy reference.

## **Engagement with Academics on Air Modeling Development**

7. Over the past years, the EPD has been making exchanges with key stakeholders, including local air modeling experts, academics, environmental consultants and green groups in respect of air quality modeling and its applications in the EIA process. We will continue the exchanges and engage the experts in this highly specialized subject.

**Environmental Protection Department**  
**September 2013**