

Submission by Dr Nicky LAM

Improve data transparency on air pollution modeling to gain public trust

The three tiers system proposed by EPD is an integrated science and engineering approach that supports its application on Environmental Impact Assessment (EIA). The proposed approach is promising however some components in the system should be updated to reflect the current best practices in air pollution modelling. The current PATH (i.e., 2001 version) proposed in the three tiers system is out-of-date and should be updated as soon as possible. On the other hand, the new PATH modelling system under development is a decent system, where all components are using up-to-date technology. The new system is similar to what the United States Environmental Protection Agency (USEPA) is currently using for air pollution modeling. I strongly support the new system being used in Hong Kong for EIA, but not the 2001 version. To better serve and improve the new system, a few backend supports in technical documents must be included to make the system more creditable and trustable. An example of these documents is shown in <http://www.epa.gov/cair/technical.html> for United States Clean Air Interstate Rule (CAIR) regulation.

- 1) Data transparency of the air pollution model is a vital part of gaining the public trust. By allowing the public to engage and understand the work being done by EPD, we are demonstrating that EPD has been putting forth great efforts to protect our citizens' health through an integrated science and engineering approach. Putting required and necessary information online would be the first step. Documents include 1) emission inventory preparation; and 2) comprehensive model validation on the existing model.

“Model simulation without proper verification and validation should not be used in EIA.”

- 2) The PATH model assumptions (related to future policy) should be written into summary tables and made available online, allowing information to be easily accessible to the public. This information should be separated from the lengthy modeling report. Although the public may not have the knowledge to fully understand it, they have the “right to know”. As long as they know it is out there and can be viewed anytime, we will gain the public trust on modelling.
- 3) Emission inventory/gridded spatial emission is the most uncertain part of the modeling system. Therefore, making the gridded spatial emission data publicly available is also an important step to make it more transparent. It gives the public and Non-Government Organization (NGO) a way to monitor the work being done by EPD and invite public discussion, if they so choose.

In practice, gridded spatial data from the air pollution model is usually classified as non-sensitive data by most countries. From our research experience with Chinese collaboration, the gridded spatial data is also treated as non-sensitive data since emission information has been aggregated, while point-location specific emission information is treated as sensitive data since it identifies the actual location of a facility.

- 4) For EIA, the proposed one-year simulation from the PATH model should be updated annually, reflecting actual changes being made in policy, which may affect future air pollution. I recommend that the simulation be reviewed and endorsed by local academia, where public trust can be generated and/or reinforced. I recalled EPD had done a similar endorsement process for the original PATH (2001 version) and should be repeated for the new PATH.