

# BRINGING SLCPs AND PM<sub>2.5</sub> INTO INTEGRATED AIR POLLUTION AND CLIMATE CHANGE STRATEGIES IN ASIA: LINKING SCIENCE, MODELS, AND ACTION

## 1 Context/Rationale

Following a series of high-profile reports from the United Nations Environment Programme (UNEP) in 2011, governments and researchers have paid a growing amount of attention to air pollutant species known as short-lived climate pollutants (SLCPs). SLCPs, such as black carbon, tropospheric ozone and methane, can destabilise climate systems while degrading air quality over relatively short atmospheric lifetimes. In fact, international initiatives such as the Climate and Clean Air Coalition (CCAC) have been formed to help catalyse action on SLCPs. However, realising the benefits from mitigating SLCPs has proven challenging due to the need to strengthen the interface between science, models and actions. This session discussed pragmatic options for strengthening these linkages.

## 2 Objectives

Strengthening linkages between science, models and actions on SLCPs requires moving through at least three steps. These three steps also comprised the main objectives of this session:

- To familiarise the audience with the varying impacts of SLCPs and other atmospheric pollutants in Asia.
- To demonstrate the costs and benefits of key SLCP control technologies in Asia.
- To provide an overview of how policymaking processes at different levels are aiming to promote those technologies.



### 3 List of Speakers

#### [Moderator & Speaker]

**Eric Zusman** Leader / Principal Policy Researcher, Integrated Policies for Sustainable Societies Area, IGES

#### [Speakers]

**Hajime Akimoto** Director General, Asia Center for Air Pollution Research (ACAP)

**Toshihiko Masui** Head, Center for Social and Environmental Systems Research (Integrated Assessment Modeling Section), National Institute for Environmental Studies (NIES)

**Hiroshi Fujita** Deputy Director, Air Environment Division, Ministry of the Environment, Japan

#### [Discussants]

**Katsunori Suzuki** Director / Professor, Environment Preservation Center, Kanazawa University

**lyngararasan Mylvakanam** Regional Coordinator, United Nations Environment Programme Regional Office for Asia and the Pacific (UNEP-ROAP)

**Kevin Hicks** Senior Research Associate, Stockholm Environment Institute (SEI) / Environment Department, University of York

### 4 Key Messages

**The health, agricultural and climate benefits of mitigating SLCPs are several orders of magnitude greater in Asia than other regions. A stronger interface between science, models and policy will help realise these benefits.**

**In terms of science, there is a need to tailor work on SLCPs to the needs of stakeholders in Asia; this requires working on methane and non-methane precursors of ozone.**

**In terms of modelling, there is a need to look at the relationship between low-carbon and SLCP reduction strategies.**

**In terms of policy, new modelling and science can be used to strengthen existing regional cooperation frameworks.**

### 5 Summary of Presentation

In a framing presentation, Eric Zusman helped familiarise the audience with SLCPs and the sizable public health benefits from SLCP mitigation in Asia. He highlighted that it is critical that line agencies work together to realise these benefits. Silo-style planning can be a significant barrier to coherent action on SLCPs.

Hajime Akimoto then presented on tailoring a co-benefits approach to East Asia. He underlined that immediate reduction of air pollutants, reduction of nitrogen oxides (NO<sub>x</sub>) and non-methane volatile organic compound (NMVOC) when coupled with reductions in CO<sub>2</sub> may be a more appropriate pathway to co-benefits for Asia than focusing on methane (CH<sub>4</sub>) precursors of ozone. He cautioned against unqualified applications of approaches to co-benefits that are common to Europe.

Toshihiko Masui concentrated on quantifying the costs and benefits of chiefly low-carbon strategies and showed that air quality co-benefits from fuel switching, energy savings and other measures can significantly offset mitigation costs. He then introduced a new research project (S-12) funded by the Ministry of the Environment, Japan (MOEJ) on the promotion of climate policies by assessing impacts of SLCP and Long Lived Greenhouse Gas (LLGHG) emission pathways. More work will be needed to look at the complementarities between low-carbon and SLCP mitigation strategies.

Hiroshi Fujita explained Japan's past efforts to mitigate the impact of ozone and PM from both stationary sources and mobile sources. Japan has implemented legal regulations of ozone precursors and PM from large-scale sources as well as individual vehicles. Furthermore, the MOEJ has contributed to various air pollution research projects and the Tripartite Environmental Ministers Meeting (TEMM) among Japan, Korea, and China. Finally, he introduced future activities to address air pollution issues in Asia by highlighting the importance of a regional cooperative programme with Clean Air Asia and UNEP.

## **6 Summary of Discussion**

Moving on to the panel discussion, Katsunori Suzuki emphasised the importance of science-policy interface and need for an epistemic science community in Asia. He then explained a proposal for an Asia Science Panel for Air Quality (ASPAQ). From UNEP's point of view, Iyngarasan Mylvakanam commented on how related programmes have evolved over the years and stressed policymakers need to hear one unified voice from scientists. Kevin Hicks followed with views from a broader international perspective. He outlined the activities of CCAC, and the significant steps to international cooperation to reduce SLCPs such as the fact that particles, especially black carbon, are being considered in the revision of the Gothenburg Protocol. Lastly, during open discussion questions were raised about the reliability of health impact estimates. Responses from the panellists focused on the transferability of epidemiological studies to other regions and the need to better disseminate information on SLCPs to the general public.