

1. Organizer National Institute for Environmental Studies (NIES), Japan	
2. Title "Pathways toward low carbon societies in Asia by 2050 and contribution of Japan to their realization: quantitative and qualitative assessment of LCS using the Asia-Pacific Integrated Model (AIM)"	
3. Purpose and Theme This event presented an overview of the Asia-Pacific Integrated Model (AIM) and research outcomes of low carbon society scenarios at national and city levels in Asia as analyzed using the AIM. It then provided a platform for a discussion on the contributions from Japan which are imperative towards the implementation of leapfrog development in Asia in line with the outcomes of training sessions and workshops organized in collaboration with governments and research institutes in Asia.	
4. Agenda and speakers November 13, 2013	
15:00-15:15	Methodologies to Estimate Pathways Dr. Mikiko Kainuma, National Institute for Environmental Studies (NIES), Japan
15:15-15:30	China's CO <sub>2</sub> emissions scenario towards the two degree global target Dr. Kejun Jiang, Energy Research Institute (ERI), National Development and Reform Commission, China
15:30-15:45	Sustainable Low Carbon Pathway for India Prof. P.R Shukla, Indian Institute of Management, Ahmedabad (IIMA), India
15:45-16:00	Low Carbon Scenarios in Asia Dr. Junichi Fujino, National Institute for Environmental Studies (NIES), Japan
16:00-16:15	AIM is paving the road to low carbon Asia Dr. Shuzo Nishioka, Institute for Global Environmental Strategies (IGES), Japan
16:15-16:30	Discussion
5. Overview of presentations and discussions A side event entitled "Pathways toward Low Carbon Societies in Asia by 2050 and contributions of Japan to their realization" was organized by the Asia-Pacific	

Integrated Model (AIM) Project Team to take place at the Japan pavilion as part of UNFCCC COP19/CMP9 on November 13 (Wednesday), 2013.

At the event, Dr. Mikiko Kainuma, a Fellow at the Center for Social and Environmental Systems Research at NIES, presented an overview of the AIM and the potential GHG reductions from 10 key actions toward low carbon societies in Asia, a project conducted under the Environment Research and Technology Development Fund of the Ministry of the Environment, Japan. Dr. Kainuma discussed the realities surrounding the situation for LCS, including the fact that, while global GHG emissions in 2005 were 42Gt, those by 2050 will increase by 1.5 times, and the total share of global GHG emissions from Asia will increase from 38% to 43%. Consequently, Asia will need to reduce GHG emissions by 69% by 2050 in order to achieve two degree target. She explained that, as a consequence, her research team is addressing research questions on how to realize low carbon Asia by sustainable means, and identifying the common indicators towards the realization of low carbon society to be assigned to each country in Asia. This work is being carried out while acknowledging the different cultural and economic conditions in the respective countries of Asia, and the consequent diversity in the measures necessitated in the realization of low carbon societies in each country. Based on the premises of this particular research question, she expounded on the efforts by her research team to consider low carbon scenarios tailored to each country in Asia, and the roadmaps and tangible countermeasures being put forward.

In her conclusion, Dr. Kainuma highlighted the ultimate necessity to achieve zero emissions for global climate stabilization over the long term, regardless of the continued increases in GHG emissions in the atmosphere which are the current reality. Delayed implementation of such countermeasures will result in high concentrations of GHGs, and while the amount of emissions reductions will be greater, the costs of implementation for these countermeasures would be increasingly costly. She also emphasized that while achievement of the two degree target is feasible there is no easier pathway towards this than zero emissions. The best policies to consider and implement would involve countermeasures aimed at transition towards lowered concentrations of GHG emission as part of leap-frog development.

Following Dr. Kainuma's talk, Dr. Jian Kejun reported on China's CO<sub>2</sub> emissions scenario towards the two degree global target. Dr. Kejun emphasized that now was the time to persuade the Chinese Government to develop low carbon planning in line with best available science to facilitate the following of two degree scenario pathways, such that China's CO<sub>2</sub> emissions would peak-out between 2020 and 2050. Dr. Kejun then presented the roles of analysis using modeling, and the necessity to consider policies

from modeling analyses which integrate aspects such as the optimization of economic frameworks; energy efficiency; improved contribution from renewable energy sources; capture and sequestration (CCS) of CO<sub>2</sub>; lifestyle changes; and modified land use. In addition, Dr. Kejun highlighted the necessity of analysis regarding the Chinese government's amenability to covering costs associated with the implementation of countermeasures and the diverting of funds, given that the decisive factors in China's achievement of emissions reduction targets by 2030 are mostly of an economic nature.

Prof. P.R. Shukla of the Indian Institute of Management then gave a presentation on "Sustainable Low Carbon Pathway for India, focusing on Sustainable Transport". Prof. Shukla identified the necessity of a two-stepped approach towards the achievement of Indian LCS. Firstly, he pointed out, it is necessary to visualize the development and mechanisms of social, economic, and technological transitions in Indian society relevant to the achievement of its sustainability goals and targets, and suitable actions compatible with these national goals and targets. Secondly, he highlighted the need to delineate actions which will facilitate the achievement of the global two degree climate change stabilization target, and that such actions also take into consideration and be compatible with national goals and targets. By following these steps, he explained, by comparison with the BAU scenario, India will reduce CO<sub>2</sub> emissions by 70% by 2050. In his overall conclusion, Prof. Shukla revealed that a 2 ton per person CO<sub>2</sub> emissions reduction target in India was feasible by 2050, provided that there is early action, and international financial and technological support.

Dr. Junichi Fujino, a Senior Researcher at the Center for Social and Environmental Systems Research at NIES then introduced low carbon society scenarios with an emphasis on LCS analyses on national and city levels in Asia using the AIM. These have been conducted as part of collaborative research between the AIM project team in Japan and members of national and international governments and research institutes.

Finally, Dr. Shuzo Nishioka, Secretary General of the International Research Network for Low Carbon Societies (LCS-RNet) based at the Institute for Global Environmental Strategies (IGES) reported on the lessons learned from the development process for Japan's low carbon society policies and the role of the AIM in the realization of leapfrog development towards low carbon societies in Asia, such that the same mistakes made by developed countries are not repeated when LCS policies are adopted in Asian countries and cities.

During the panel discussion, the roles of low carbon scenario analysis allowing for the characteristics of Asian countries and cities were discussed, with the above presenters and the audience taking an active part. As part of the discussions, panelists

emphasized that while not easy, the realization of the two degree target is achievable; as well as the necessity to implement actions on both sectoral and cross-sectoral levels at an early stage, and based on the best available scientific knowledge in regards to social, economic, and technical aspects.

## 6. Photograph

