

AIM (Asia-Pacific Integrated Model) and its Contribution to Assessment of LTSs and NDCs in Asian Countries

MASUI Toshihiko¹, HIBINO Go¹, ISHIKAWA Tomoko², TAKE Kyoko², FUJINO Junichi²,
HIRAYAMA Tomoki³, OTA Takaharu³, GOTOH Yurie³, OCHI Yuki⁴

*1: National Institute for Environmental Studies (NIES), Japan, 2: Institute for Global Environmental Strategies (IGES), Japan, 3: Mizuho Research & Technologies, Ltd., Japan
4: E-Konzal Co., Ltd., Japan*

Abstract

AIM (Asia-Pacific Integrated Model) is an integrated assessment model initially developed in 1990 by the National Institute for Environmental Studies (NIES), Kyoto University and the Mizuho Research & Technologies in collaboration with Asian researchers. The various models since then have been developed from global to sub-national scales to analyse the impacts and implications of future climate change and other environmental issues, and many of their results have been cited in the IPCC Assessment Reports. In particular, the models have been used to assess climate change mitigation measures at the national level, for example in Japan, Thailand, Indonesia and Viet Nam, where the analytical results have also contributed to national climate policies. More recently, the Institute for Global Environmental Strategies (IGES) has been supporting facilitating the discussions between researchers and policymakers by using AIM through the Low Carbon Asia Research Network (LoCARNet), for which IGES serves as the secretariat.

For autonomous climate policy development in each country, it is important for various stakeholders to discuss their own vision of the future, including climate change measures, and to reflect this vision in their own plans. In addition, when Asian countries quantify their long-term strategies and update their NDCs, they also reflect diverse perspectives, such as how to overcome various challenges each country faces, including achieving the SDGs. In this context, integrated assessment models are powerful tools as a basis for planning, and Japan has been supporting Asian countries through the development and use of the AIM.

For long-term strategies and NDC updates, the AIM team uses three models:

1. ExSS (Extended SnapShot tool): A tool for discussing the goals of decarbonised societies with stakeholders
2. End-use model: A model to assess the combination of technologies for achieving the target from the current situation and their direct costs
3. CGE (computable general equilibrium) model: A model to quantify the macroeconomic impact of introducing countermeasures

By combining the results of the above three models, quantitative future scenarios can be calculated that are consistent in terms of technology, economics and policy. The scenarios will be updated through discussions with stakeholders, and this process will also help to build consensus for climate policy proposals that reflect future societal goals.

In addition, it is crucial to foster the necessary capacity in each country. A proper understanding of models and scenarios by stakeholders will also help maintain a good relationship between stakeholders and researchers, leading to constructive discussions on future scenarios. Thus the AIM team also focuses on building such capacity in each country.

Access to relevant information

Dr. MASUI Toshihiko and Ms. ISHIKAWA Tomoko