Multi-Regional Enduse model in Japan

Ken Oshiro and Go Hibino
Mizuho Information & Research Institute, Japan

This study is intended to apply AIM/Enduse [Japan] to multi-regional scale modeling. In Japan, regional own specific factor, such as climate, population density, availability of renewable energy, differs greatly by region and it affects regional energy demand and supply state. By considering these regional specific factors, estimation would become more reasonable.

In addition, Japanese electricity grid is dominated by separated 10 major utility companies and they have very little interchange capacities between their service areas. Because the future of nuclear power availability is uncertain, it is supposed to be required to estimate regional electricity demand by utilizing multi-regional scale model.

The model is composed of multi-regional Enduse model and simple power generation module. Modification of models and data arrangement is under way now, so the followings are tentative results.

Figures shown below are tentative result of household energy consumption by 2050 estimated by the multi-regional Enduse model. Hokkaido area, which is located in a northern and cold region, has huge reduction potentials by installing an insulation technology and fuel change from conventional oil heater/boiler to efficient gas heater/boiler or electricity heat pump technology. In contrast, Okinawa area, which is located in a southern, hot and humid region, has relatively less reduction potential.