EXECUTIVE SUMMARY

Responding to the Cebu Declaration of the leaders of the East Asia Summit (EAS) countries, Japan proposed to undertake a study of the energy savings and CO_2 emission reduction potential in the EAS region. The study provides an insight to national energy ministers for establishing goals and action plans to improve energy efficiency in their respective countries. The first study was undertaken in 2007 by the Working Group (WG) for Analysis of Energy Saving Potential in East Asia and has met several times a year since then to update and incorporate more recent information such as energy saving targets and action plans reported at the EAS Energy Ministers Meetings (EMM).

The study examined two key scenarios up to 2035, a Business-As-Usual (BAU) scenario which reflected each country's current goals and action plans, and an Alternative Policy Scenario (APS), which included additional goals and action plans currently under consideration in each country. The focus of the study is on analysing the additional energy savings that might be achieved through the goals and action plans of individual countries, above and beyond BAU. The additional savings were measured as the difference between the BAU and APS scenarios.

Each scenario was modelled for each country by the members using their national models or by the Institute of Energy Economics, Japan (IEEJ) model that was used in the preparation of IEEJ's Asia/World Energy Outlook. The working group is composed of experts from each EAS country. Some of the members developed their national energy outlook and the remaining members supplied projections of key socio-economic variables, as well as energy saving plans to IEEJ for developing their energy outlook.

Modelling results show that the EAS region's final energy consumption in the BAU case is projected to increase from 2489 Mtoe in 2010 to 5439 Mtoe in 2035, an increase of 3.2 percent per year. This is in the assumption that the EAS region's total GDP will increase by 4.1 percent per year on average along with 0.6 percent annual growth in population. In the APS case, final energy consumption is projected to rise to 4677 Mtoe in 2035, 14.0 percent less than in the BAU case. CO_2 emissions in the BAU case are projected to increase from 3309 Mt-C in 2010 to 6562 Mt-C in 2035,

implying an annual growth rate of 2.8 percent. In the APS case, CO_2 emissions are projected to be 4719 Mt-C in 2035, 28.1 percent lower than in the BAU case.

While the emission reductions under the APS are significant, CO_2 emissions in the APS case in 2035 will still be above 2010 levels and far above 1990 levels. Scientific evidence suggests these reductions will not be adequate to prevent severe climate change impacts.

In order to support the analysis on energy saving potential, the following related projects were commissioned during 2012: a) best energy mix in road transport sector in Indonesia b) economic impact by energy efficiency investment in EAS region, and c) biofuel market analysis. In addition, the WG improved the quality of sample data collected through the pilot survey especially on estimation of electric consumption based on power rating.

With reference to the above findings, the following are recommended:

- Energy efficiency and conservation policies are very effective in reducing energy demand and CO_2 emissions. Therefore, energy efficiency action plans should be setup across all energy consuming sectors, especially industry and transport sectors.
- Rationalizing the prices for electricity, oil products and natural gas in the near term including the removal of subsidies, while considering support for low income groups.
- Detailed energy consumption data are indispensable in evaluating the implementation of energy saving action plans. EAS countries should prepare consumption data regularly by conducting large-scale surveys applying the experience and know-how obtained through the ERIA pilot surveys.
- The energy saving goals reported by the 16 EAS countries at EMM6 show large energy saving potential as well as CO_2 emissions reduction. However, CO_2 emission in 2035 will still double the 2010 level. Thus more aggressive energy saving goals and action plans should be implemented and more low or zero carbon energy and technologies should be utilized.
- International and regional collaboration will contribute to transfer of EEC & low carbon emissions technologies from developed countries to developing countries. The bilateral offset credit mechanism is one option to promote the transfer of energy efficient technologies from developed countries to developing countries to contribute to saving energy and mitigating CO_2 emissions.