

Draft Summary of “Asian Energy Outlook”

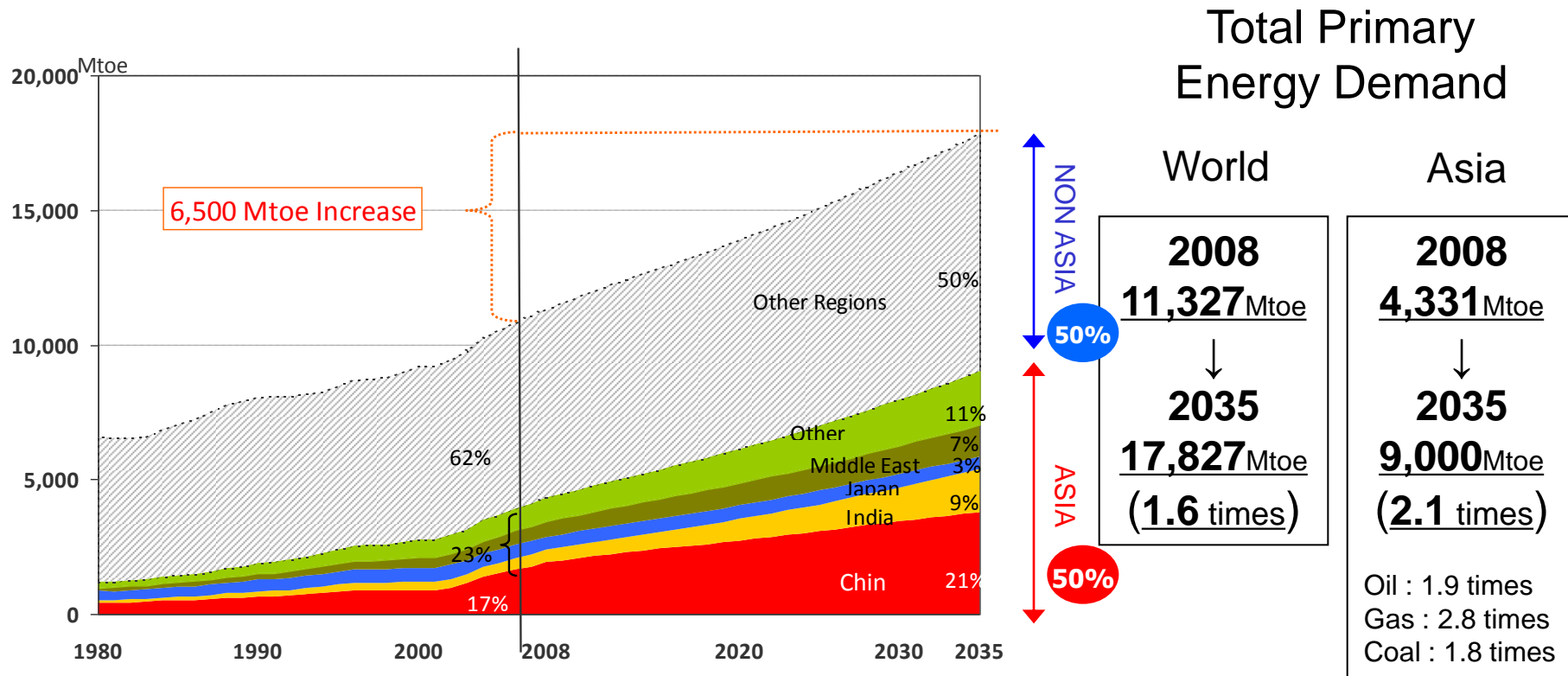
*A Joint Study to Develop the "Asian Energy Outlook"
by experts from Asian Petroleum Producing-Consuming Countries*

April 18, 2011

Background and Features of the “Outlook”

- World energy market faces various uncertainties and challenges
- Common recognition that the improvement of transparency and enhancement of predictability for energy supply-demand is critical for market stabilization
- The 3rd Asian Ministerial Energy Roundtable in Tokyo (April 2009) welcomed Japan’s proposal to conduct a study to jointly develop “Asian Energy Outlook” as a mean of promoting better understanding of the market prospects
- The study has been conducted in collaboration with experts from Asian oil producing and consuming countries and international organization such as IEA, IEF and OPEC
- Workshops were held for five times in various Asian cities (Tokyo, Beijing, Riyadh and Delhi) to discuss, refine and finalize the Outlook, with the participation of the experts

Major findings of BAU(Business As Usual) scenario of Total Primary Energy Demand



- World's total primary energy demand will reach 17.8 Btoe in 2035 (1.6 times from 2008) and Asia's energy demand will grow more rapidly (2.1 times from 2008). It's share in world primary energy demand will be 50% in 2035.
- Asia will represent 72% of incremental growth of global energy demand toward 2035.
- The consumption of the fossil fuel will expand rapidly and it is important to ensure means toward stable energy supply.

Assumptions on the Alternative Scenario

- BAU scenario : continuation of current market situation and policies
- Alternative scenarios : implementation of the following energy efficiency and diversification policies
 - (1) Maximum impact scenario (MIS) : the maximum success of those policies
 - (2) Strong policy scenario (SPS) : more moderate success of those policies than the maximum impact scenario

Regulation, National target, SSL etc.

Carbon tax, Emissions Trading, RPS, Subsidization, FIT, Efficiency Standard, Automobile Fuel Efficiency Standard, Low Carbon Fuel Standard, Energy Efficiency Labeling, National Target etc.

Promotion of R&D, International Cooperation

Encouragement of Investment for R&D, International Cooperation on Energy Efficient Technology, Support on Establishment of Efficiency Standard

【Demand Side Technology】

■ Industry

Best available technology on industrial process such as steel making, cement, paper, oil refinery etc. become internationally penetrated

■ Transport

Clean energy vehicles (high fuel efficient vehicle, Hybrid vehicle, Plug-in hybrid vehicle, Electric vehicle, Fuel cell vehicle) globally expand.

■ Building

Efficient electric appliance (Refrigerator, TV etc.), High efficient water-heating system (heat-pump etc.), Efficient air conditioning system, Efficient lighting, Strengthening heating insulation

【Supply Side Technology】

■ Renewable

More expansion of Wind, PV, CSP, Biomass power generation, Bio-fuel

■ Nuclear

Effective use of nuclear power with the consideration of the safety

■ High Efficient Fossil-fired Power Plant

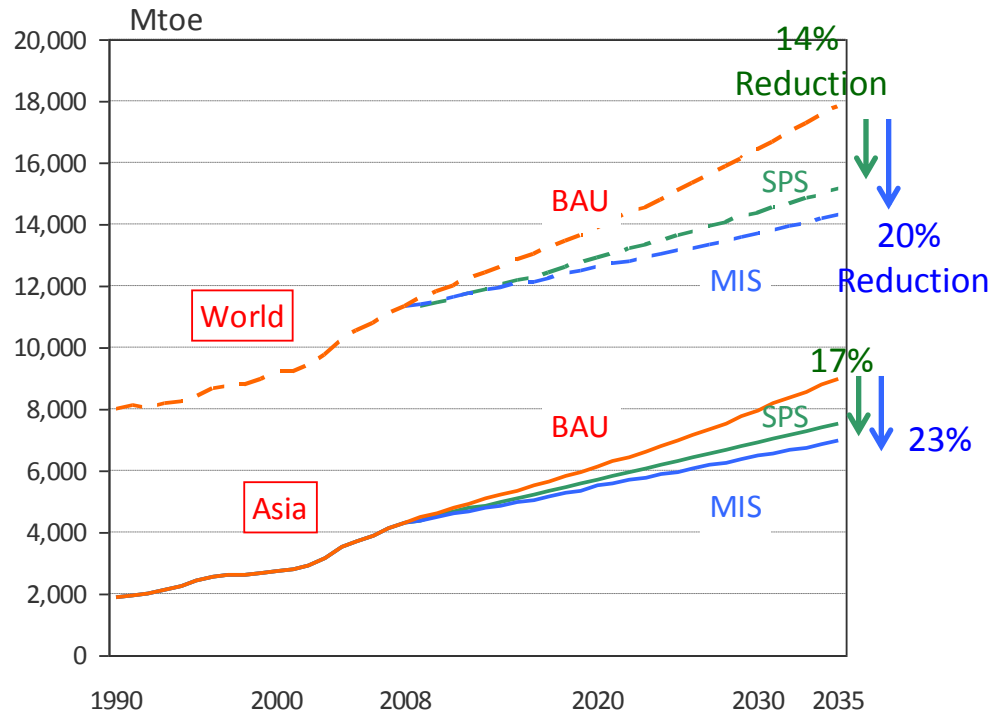
More expansion of Coal-fired power plant (USC, IGCC, IGFC), Natural gas MACC

■ CCS

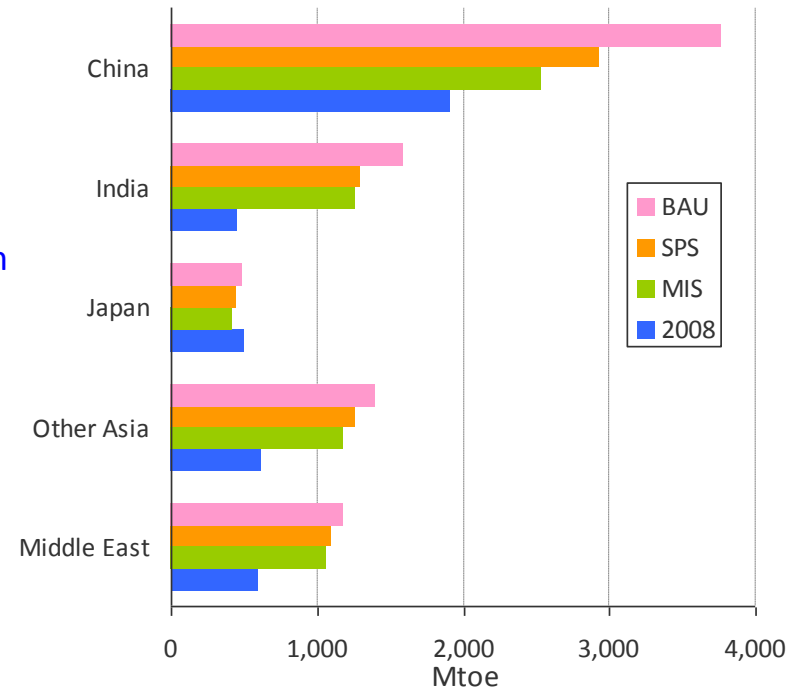
Introduction in power generation (coal-fired, gas-fired) and industrial sector

Major findings of alternative scenarios of Total Primary Energy Demand

TPED (World, Asia)



TPED in 2035



- World's total primary energy demand in 2035 will be reduced by 14% in SPS and 20% in MIS. Energy saving in Asia accounts for 59%(SPS) and 59%(MIS) of the world's energy saving potentials.
- Although Oil demand and Gas demand in 2035 will be lower than that in the BAU Scenario, in both alternative Scenarios, they will be higher than the current level. Oil demand will show 1.5-fold growth and Gas demand will show 2.0-fold growth in MIS to 2035.
- Therefore, it's important to ensure the energy supply security to meet growing energy demand.

Recommendations

- Enhance cooperation and dialogue between energy producing and consuming countries in Asia and take a concerted approach to world economic growth and market stability.
- Make investment plans by Asian producing countries for expanding their production capacity to meet growing demand in the future.
- Refine the outlook on energy demand and supply with the corporation of Asian countries, and share a common understanding among policy makers and the market players.
- Implement strong policy to promote energy conservation and introduce renewable energy in the view of meeting increasing demand and using fossil fuel effectively.
- Proceed the Roundtable as a platform to further enhance cooperation and dialogue in Asian region.

Thank you for your attention.

*For more detail about the outlook,
please visit following web site;
<http://XXX.XXX.XXX>