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# Energy Issues from the East Asian Perspective

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# 1. Beyond DCs vs. LDCs: presenting an Asian model

- Debate on the responsibility of worsening environment between DCs and LDCs is not productive.
- Strategy
  - It is inevitable to enhance CO<sub>2</sub> emission with economic growth in the short run.
  - However, we should go back to a sustainable path in the long run.
- Tactics
  - Energy saving (industry, transport, household, ...)
  - Diversification and enhancing efficiency of energy supplies
  - Technological progress
- East Asia, in which a variety of countries share the dynamism of economic development, should present a new model on energy with economic growth.

## 2. Research activities in ERIA

- ERIA is newly established international organization that works for economic integration in ASEAN and East Asia
- 3 pillars on policy research
  - Deepening economic integration
  - Narrowing development gaps
  - Sustainable development
- 20+ economic research projects each year with 150 researchers and research institutes network

- A number of important task-outs from ASEAN and East Asia Summit
  - AEC scorecard, AEC mid-term review [ASEAN]
  - Data support for ASEAN++ FTA or RCEP [ASEAN]
  - Jakarta Framework, beyond 2015 [ASEAN]
  - The Comprehensive Asia Development Plan (CADP) [EAS], Master Plan on ASEAN Connectivity (MPAC) [ASEAN], The ASEAN Strategic Transport Plan (ASTP) 2011-2015 [ASEAN]
  - ASEAN SME Policy Index [ASEAN]
  - Energy related projects (energy saving, bio energy, energy market integration, ...) [EAS]

# History of East Asian Economic Integration

1967 Establishment of ASEAN

1977 1<sup>st</sup> Japan-ASEAN Summit

1989 Establishment of APEC

Financial Crisis in Asia (1997)

1997 1<sup>st</sup> ASEAN+3 Summit

**Korean** President Kim Dae Jun led the East Asian Vision Group, submitted a report and proposed the establishment of "East Asia Summit".

2001 5<sup>th</sup> ASEAN+3 Summit

Dec.2005 9<sup>th</sup> ASEAN+3 Summit

Based on **China's** proposal, members agreed to start Expert Study on EAFTA (ASEAN + 3 FTA)

Dec.2005 1<sup>st</sup> East Asia Summit

**Japan** advocated CEPEA (ASEAN+6EPA) and ERIA initiative (Apr. 2006 'Global Economic Strategy')

Nov. 2006 14<sup>th</sup> APEC Summit

**United States** advocated FTAAP (APEC wide FTA ) initiative.

Nov. 2007 3<sup>rd</sup> East Asia Summit

16 National Leaders agreed to establishment of ERIA

June. 2008 Establishment of ERIA

## ERIA Governing Board Members

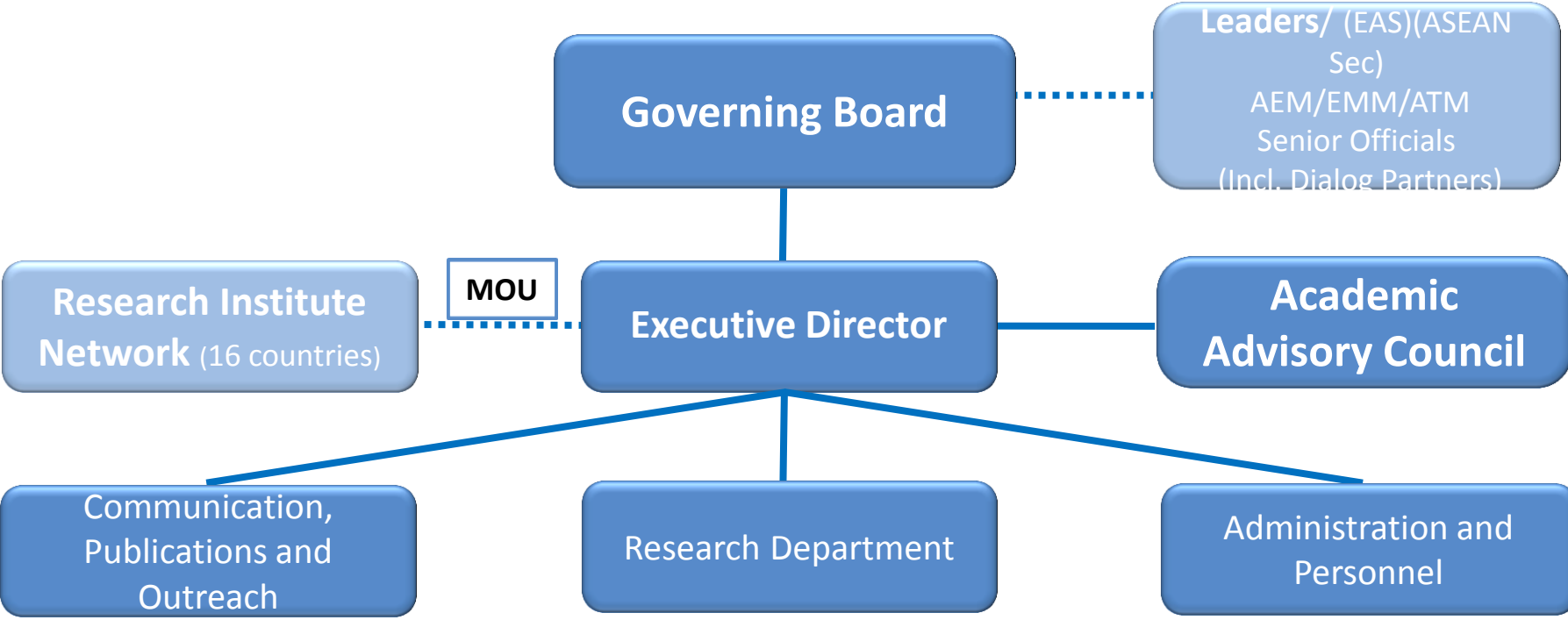


1<sup>st</sup> ERIA Governing Board Meeting, June 3<sup>rd</sup>, 2008

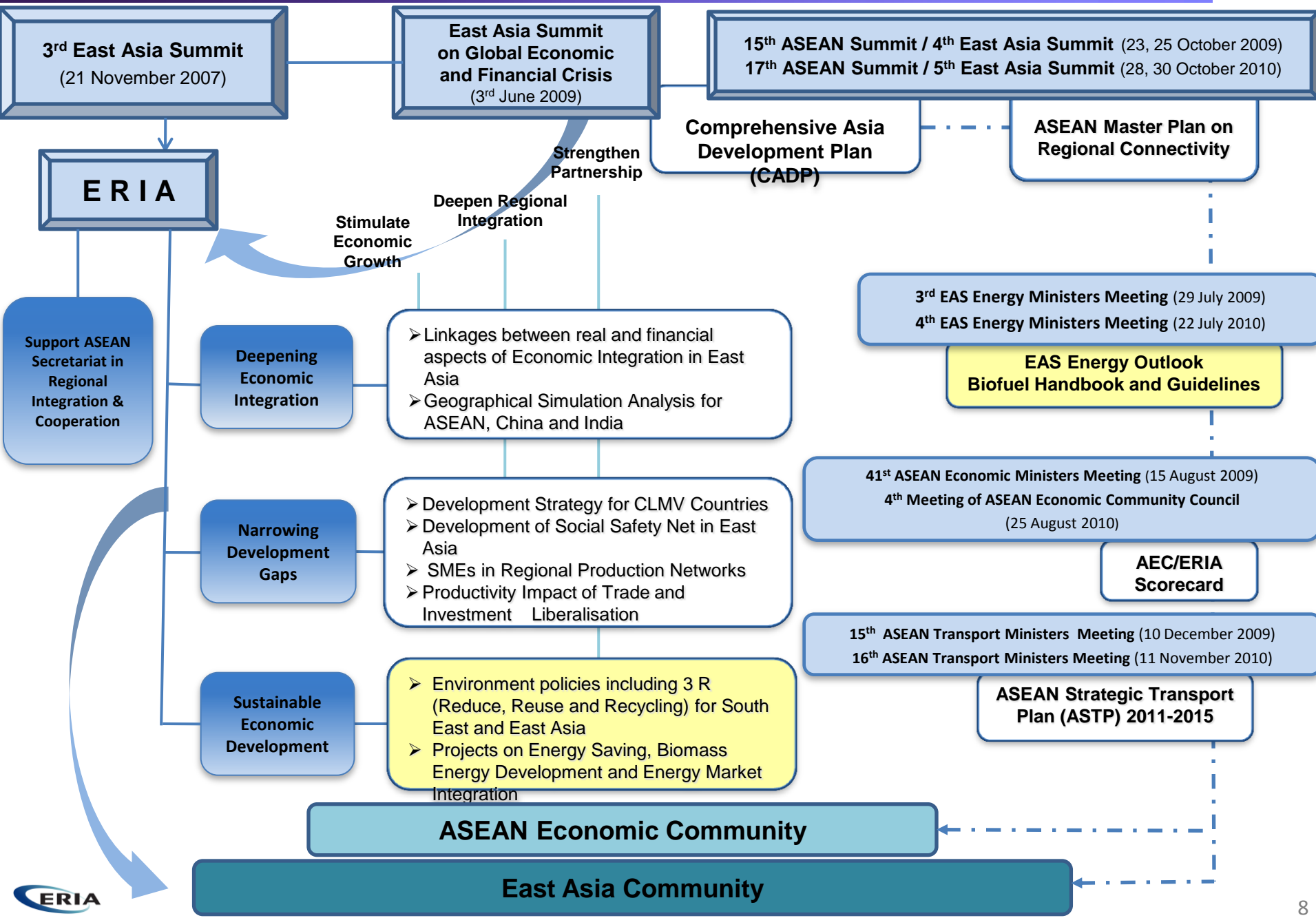
## The Statement on the Establishment of ERIA

1. The Economic Research Institute for ASEAN and East Asia (ERIA) will be temporarily accommodated at the ASEAN Secretariat.
2. ERIA shall function as an independent research institute but shall maintain and develop strong communication ties with policy-making process. The results of its research works shall produce concrete and tangible policy recommendations that shall meet the needs of Ministerial and National Leader's meetings.
3. ERIA shall maintain its highest academic standards in its research activities and provide a tripartite-type forum for policy dialogue and interactions among researchers, policymakers, and civil society.
4. ERIA shall provide meaningful resources for narrowing development gaps and enhancing research capabilities in countries in need for improvement of public policy-making and research abilities.
5. ERIA shall function as a common asset to the ASEAN and East Asian countries in providing a common platform for rigorous economic studies, and its activities shall be open in cooperation with various prominent economic research institutions and organizations around the world, just as the East Asian economic integration shall be wide open.

# Organizational Structure of ERIA



# ERIA's Mandate for Policy Research from East Asia Summit and ASEAN Summit





# 3. Energy related projects in ERIA

- ERIA continuously contributes to the implementation of “Cebu Declaration” adopted at the Second EAS in 2007.
- The policy recommendations from ERIA energy projects have been recognized and endorsed by the leaders and ministers in the region.

## Cebu Declaration on East Asian Energy Security

- ✓ Set individual goals and formulate action plans voluntarily for improving energy efficiency;
- ✓ Encourage collective efforts in intensifying the search for new and renewable energy resources and technologies, including research and development in biofuels;
- ✓ Encourage the use of biofuels and work towards freer trade of biofuels and a standard on biofuels used in engine and motor vehicles,  
...

## ERIA's Activities in Energy Field

WG on Analysis on Energy Saving Potential in East Asia

WG on Sustainability Assessment of Biomass Utilisation in East Asia

WG on Benchmarking of Biodiesel Fuel Standardization in East Asia

- Projects
  - Energy saving potential (2008-)[EAS]
    - East Asia Energy Outlook
  - Biofuel diesel fuel standardization (2008-)[EAS]
    - ERIA Biofuel Diesel Fuel Trade Handbook
  - Biomass utilization (2008-)[EAS]
  - Energy market integration (2010FY-)[EAS]
  - Economic impact evaluation of investments on the energy savings and low-carbon emitting technologies in East Asia (2011FY-)
  - Asian potential of biofuel markets (2011FY-)
  - Energy security index and assessment of energy security (2011FY-)
  - Energy efficiency roadmap in Laos and Thailand (2011FY-)
- ERIA will establish an energy economics unit in 2012FY.

## 4. Jakarta framework for 2015 and beyond

- ASEAN will form ASEAN Economic Community (AEC) by 2015 and start thinking of a strategic plan beyond 2015.
- Four pathways
  - Competitive and dynamic pathway
  - Inclusive pathway
  - Sustainable pathway
  - Dynamic equilibrium with ASEAN centrality viz ASEAN partners

# Competitive and dynamic pathway

A step from middle-income to fully developed economies

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Push the frontier of production networks forward

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Competitive industries and private dynamism is **the core** of ASEAN economic development

Industrial agglomerations for innovation and human capital development

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Achieve free flows of goods, services, people, and capital

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Further enhance institutional and physical connectivity

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# Inclusive Pathway

Balanced and  
inclusive growth  
through dynamic  
economic forces

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## **Geographical inclusiveness**

Income gaps and differences in development phases

Tiers 2 and 3 strategies utilizing the mechanics of production networks

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## **Industrial inclusiveness**

Multinationals vs. local firms; large firms vs. SMEs; manufacturing vs. agriculture; and others

SMEs in production networks and industrial agglomerations, links to regional/global economies, access to technology and finance, human resources, industrial organizations

Government's supports and regional initiatives to address problems faced by SMEs are necessary when there are evidences of market failures and must be accompanied by systematic monitoring tool such as the ASEAN SME Policy Index

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## **Societal inclusiveness**

Central vs. local; urban vs. rural; rich vs. poor; differential treatments by age, gender, ethnicity; and others

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# Sustainable Pathway

## Resiliency

### *Energy, food and resource security*

Ample room for strengthening regional and global cooperation; secure supplies with high efficiency; keep market mechanism work against speculation; develop a regional emergency inventory stock system; promote regional and global cooperation among exporting and importing countries.

### *Disaster management*

Prone to various kinds of disasters; natural and human factors; better regional organization required for quick action, insurance mechanism, and inter-disciplinary laboratory

### *Social protection*

From traditional to formal social protection for elastic, equitable and stable society; systemic reforms of existing system components (e.g. civil service pensions), common and diversified demands across countries; pensions, unemployment insurance, health insurance, poverty reduction, and others; development of an efficient social protection system.

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## Green Development

Global warming and other environmental problems

Economic growth, industrialization, and urbanization vs environment;

Take respected position in related international forums.

### *Immediate initiatives:*

Step forward to energy and resource savings in all sectors of an economy, in addition to developing and adopting carbon-reducing technologies;

Promote green industries, including renewable and recycling industries as well as greening the existing industries with better process technologies;

Promote energy efficient products;

Proceed with energy market integration;

Respond to strict environmental standards;

Develop the idea of environmentally sustainable cities.

# Dynamic equilibrium with ASEAN centrality viz ASEAN partners

Maintain open and equal relations with external partners

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Act as a central building block for other wider cooperation schemes

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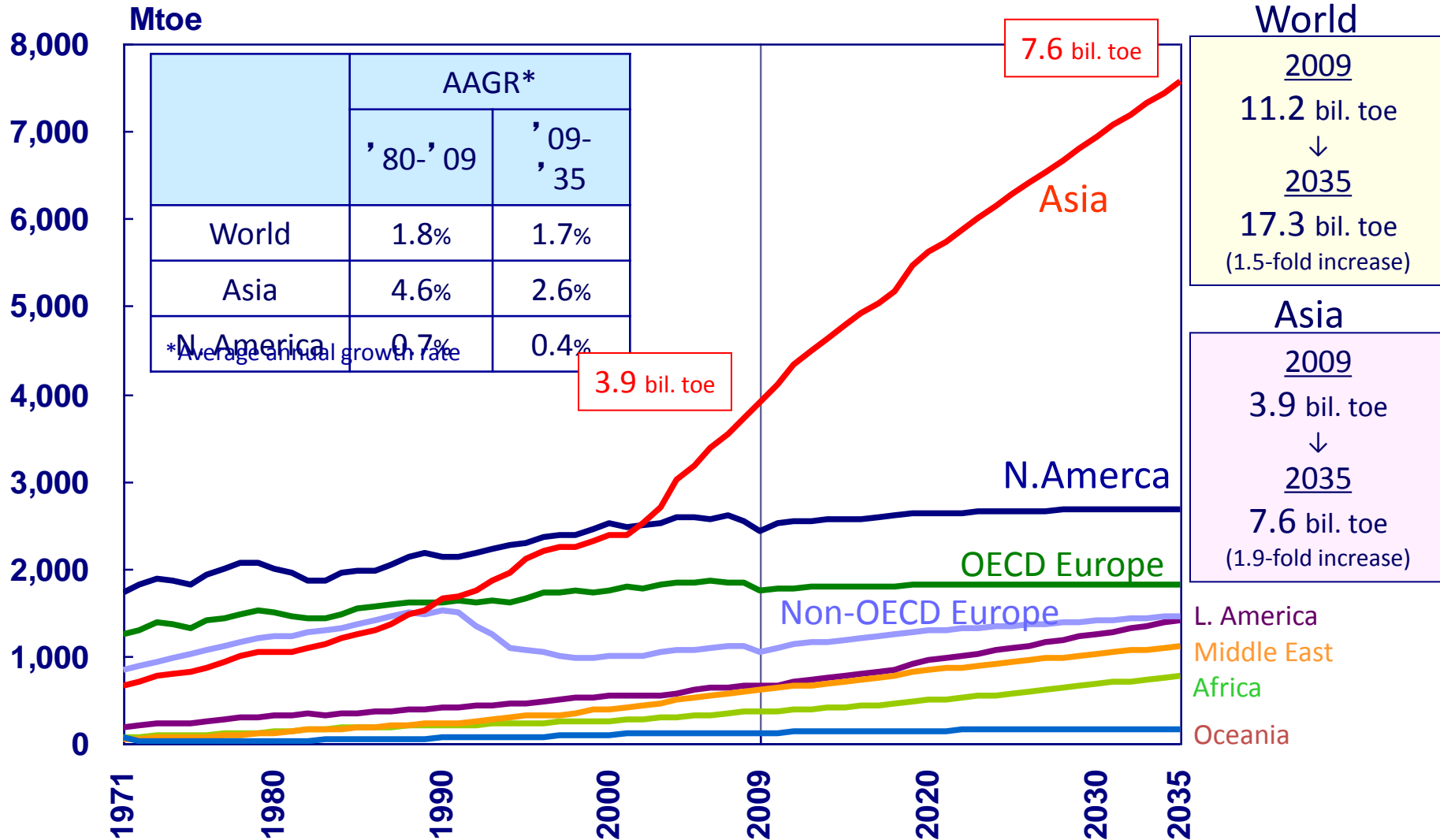
Keeping ASEAN centrality in a dynamics pro-active diplomacy

Raise voice and influence in international forum

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# Primary Energy Demand by Region (World)



■ By 2035, primary energy demand of Asia will double from the current level, reflecting high economic growth; 3.9 billion toe(2009) → 7.6 billion toe(2035).

■ Non-OECD will represent 90% of incremental growth of global energy demand toward 2035.

## Assumptions on Technologically Advanced Scenario

Countries in the world are assumed to strengthen the numerous measures that can contribute to ensure energy security and address global warming issues. Additionally, technological development and international transfer of technology will be promoted and advanced technology becomes commercially available internationally as a result.

### Regulation, National target, SSL etc.

Carbon Tax, Emissions Trading, RPS, Subsidy Provisions, FIT, Efficiency Standards, Automobile Fuel Efficiency Standard, Low Carbon Fuel Standard, Energy Efficiency Labeling, and National Target.

### 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 processes such as steel making, cement, paper, oil refinery etc. will be deployed internationally.

#### ■ Transport

Clean energy vehicles (highly fuel efficient vehicle, hybrid vehicle, plug-in hybrid vehicle, electric vehicle, fuel cell vehicle) will be globally utilized.

#### ■ Building

Efficient electric appliances (refrigerator, TV etc.), highly efficient water-heating system (heat-pump etc.), efficient air conditioning system, efficient lighting, and strengthening heating insulation

### 【Supply Side Technology】

#### ■ Renewable

More expansion of Wind, PV, CSP (Concentrated Solar Power), biomass power generation, and bio-fuel

#### ■ Nuclear

Acceleration of more nuclear power plants, and enhancement of operating ratio

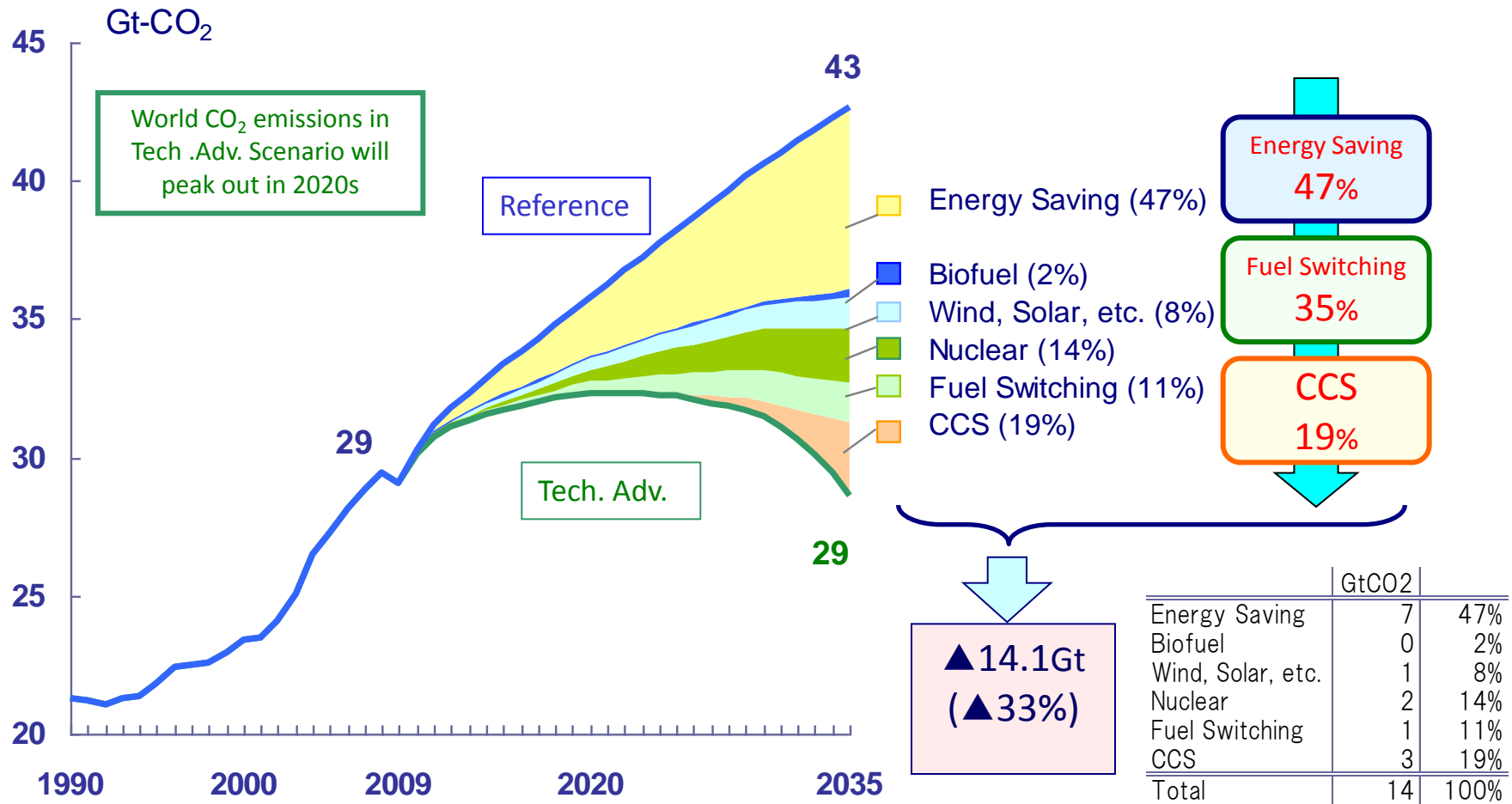
#### ■ High Efficient Fossil-fired Power Plant

More expansion of coal-fired power plant (USC, IGCC, IGFC), natural gas MACC (More Advanced Combined Cycle)

■ CCS introduction in the power (coal-fired, gas-fired) and industrial sectors

# CO<sub>2</sub> Emissions Reduction by Technology (World)

Tech. Adv.



■ In the Tech. Adv. Scenario, between 2005 and 2020 the world CO<sub>2</sub> emissions will increase by 5.1 Gt-CO<sub>2</sub> (or 19% up from the 2005 level), while the CO<sub>2</sub> emissions will reach its peak during 2020s with the introduction of advanced energy and environmental technologies.

■ Various technological options, including energy saving, enhancement of power generation efficiency, renewables, nuclear, and CCS altogether contribute to massive CO<sub>2</sub> emissions reduction. 19

## 4. Why is international cooperation needed?

- Asian energy issue is the world concern.
- Various players (exp./imp., large vs. small, development stages) should show large potential for international cooperation.
- East Asia is presenting a new development model; also do it for energy!