

Energy Security in North East Asia

**International Workshop on
“Cooperative Measures in Northeast Asian Petroleum Sector:
Focusing on Asian Premium Issues”**

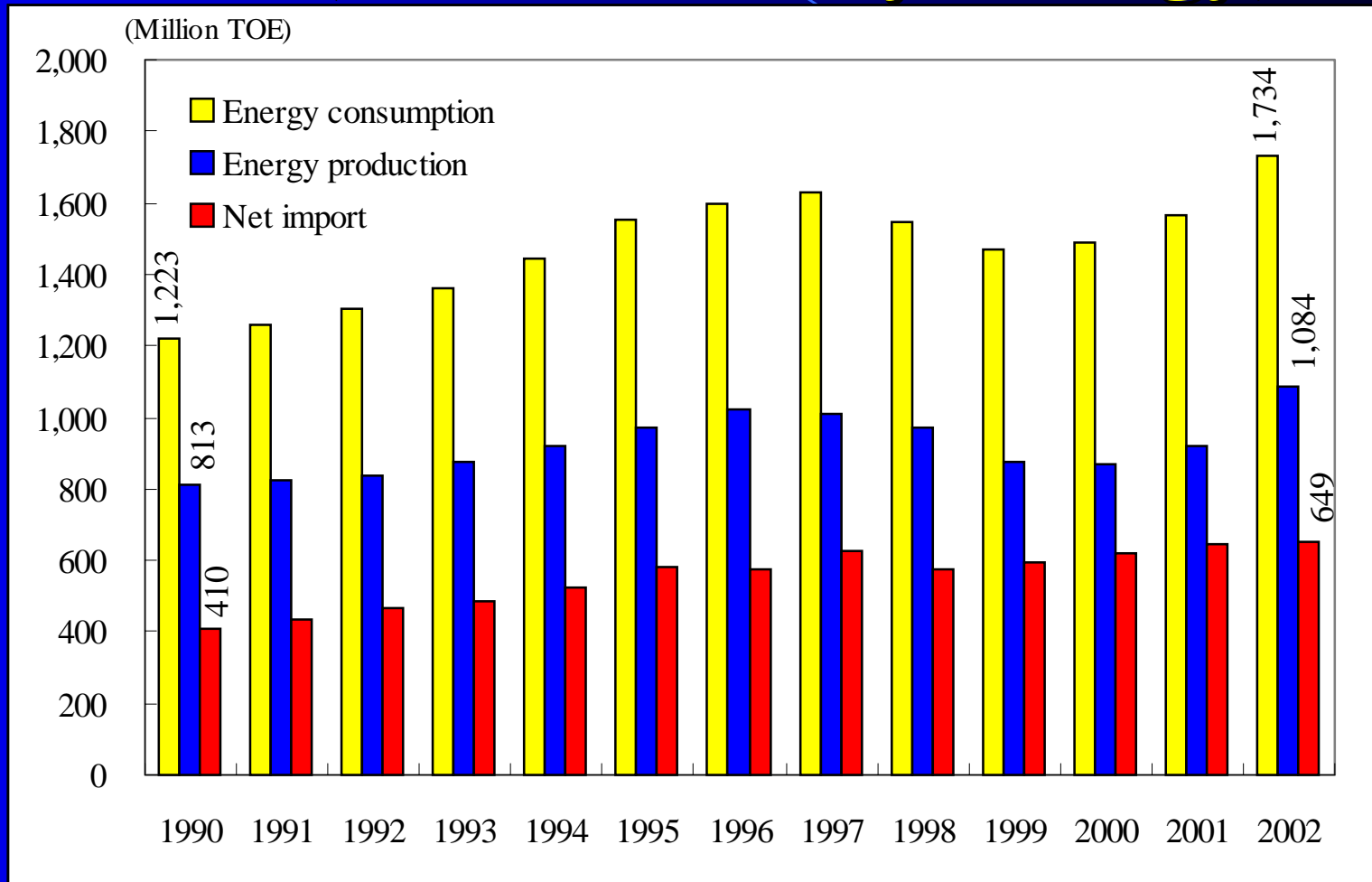
**September 6, 2003
The Palace Hotel, Seoul**

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Presentation Topic

- **Growing energy imports in North East Asia and the energy security concern**
- **Strategy development in North East Asia and its implication**
- **Importance of the regional cooperation to enhance energy security**
- **Interdependence between the East and West Asia (Middle East) and the need to pursue “common interests”**

Growing Energy Imports in North East Asia (Total Primary Energy)



Note 1: North East Asia includes China, Japan and South Korea.

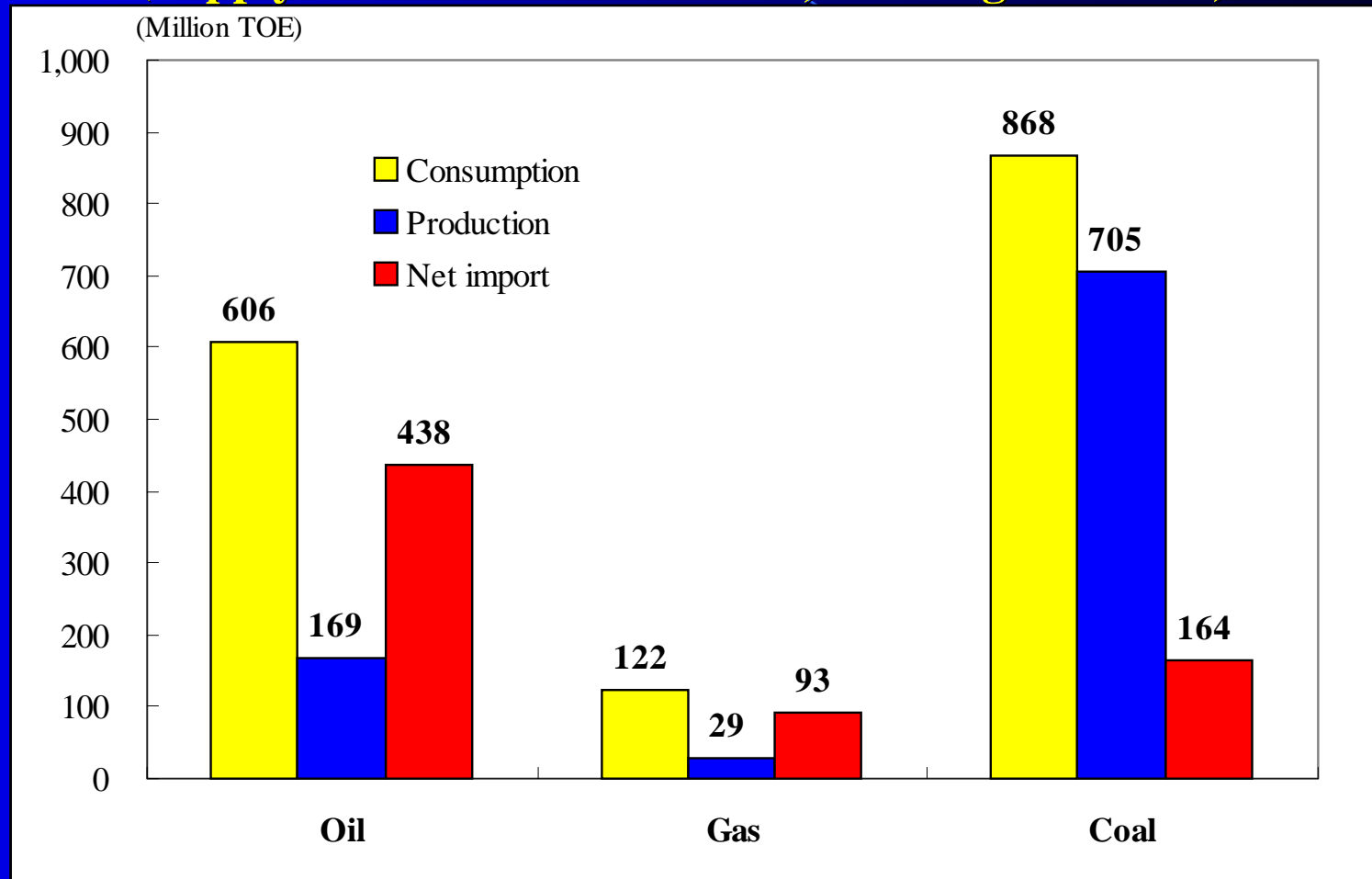
Note 2: Oil and gas production numbers account for Chinese data only.

Source: BP Statistical Review of World Energy 2003

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North East Asia, Heavily Dependent on Imports for Oil and Gas Supply

(Supply/demand balance of coal, oil and gas in 2002)

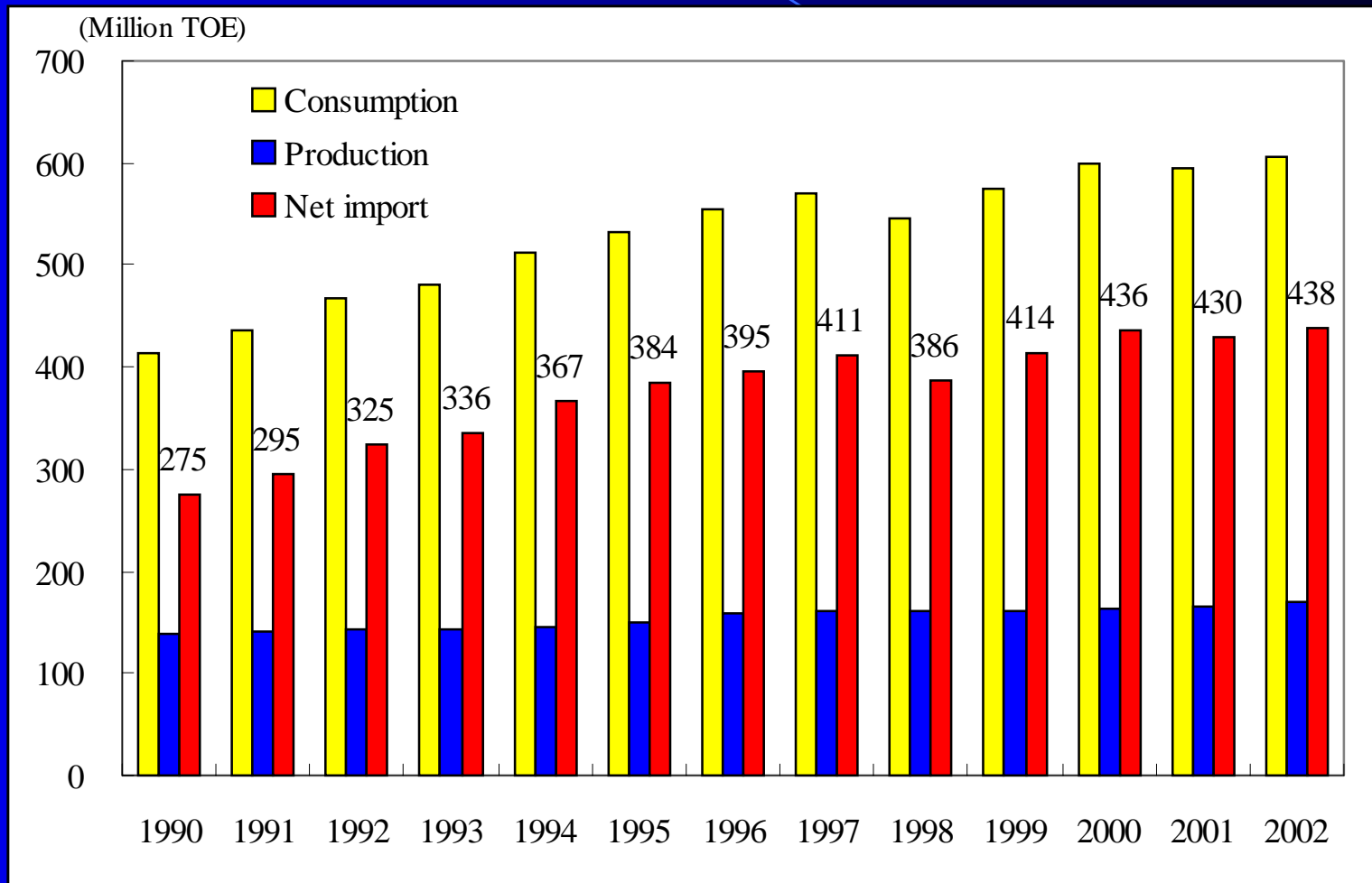


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Oil Imports Continued to Grow Rapidly in North East Asia



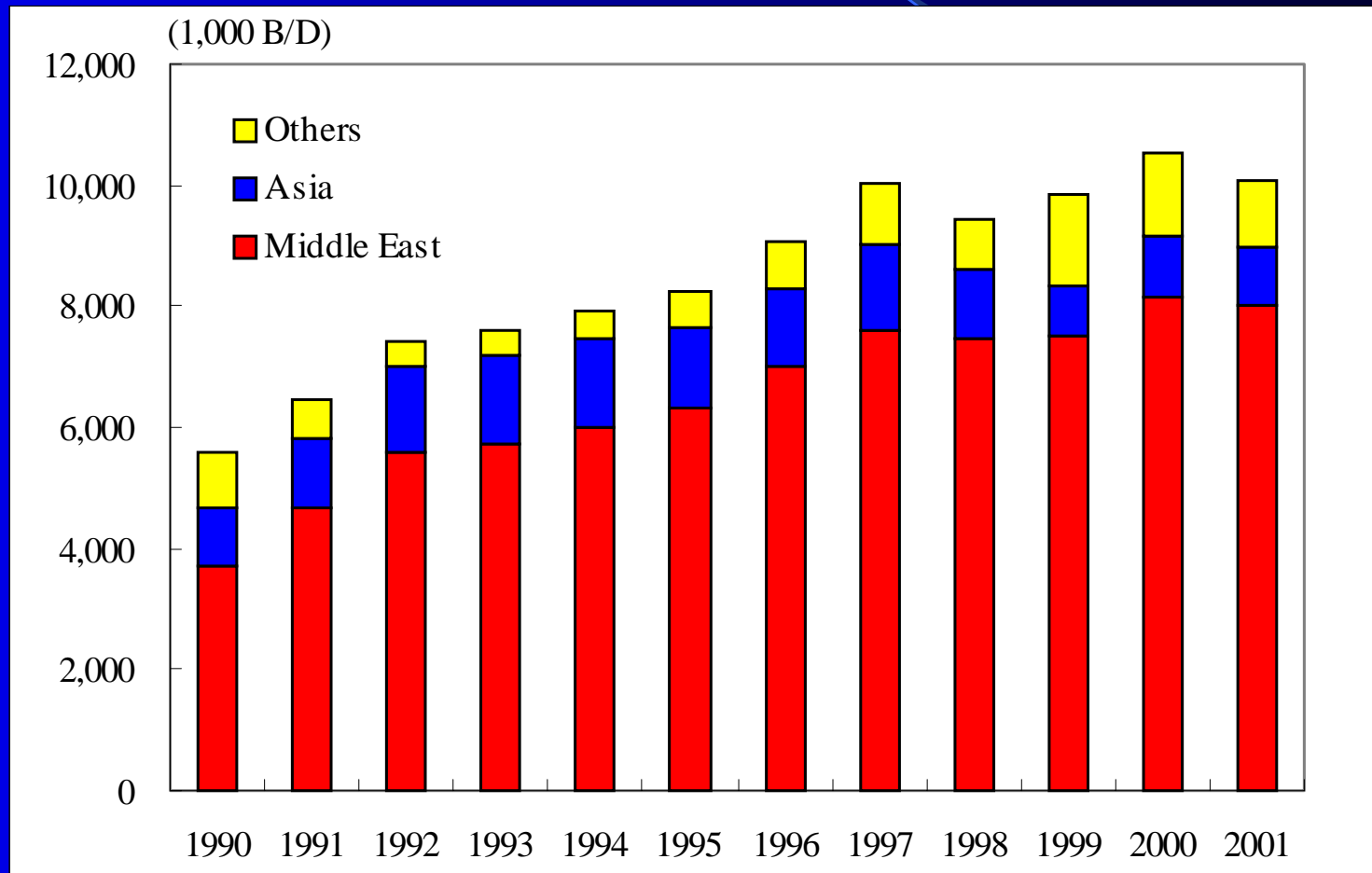
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North East Asia Depends Heavily on Middle East Crude Oil Import

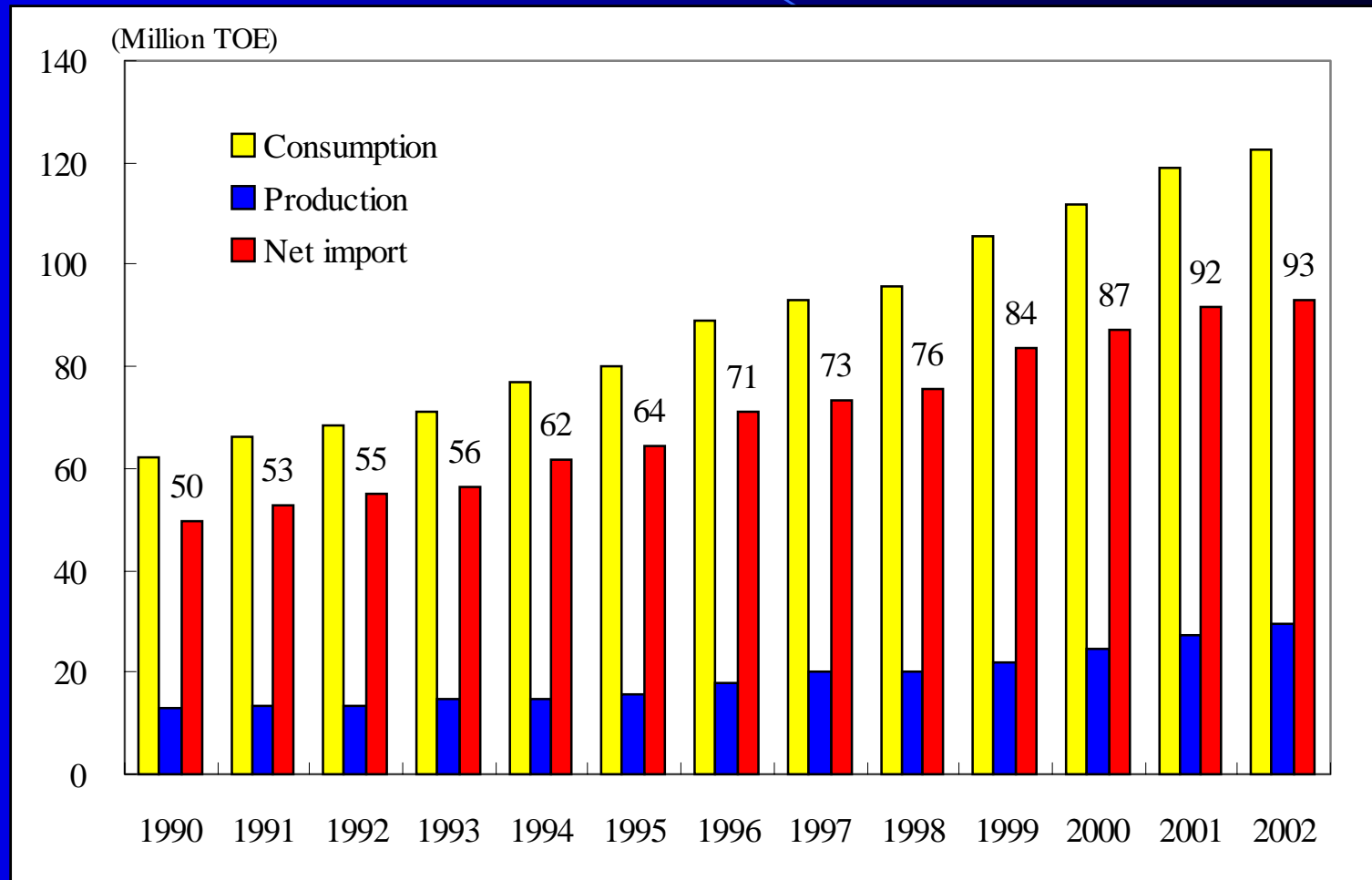
(Crude oil import source in North East Asia)



Note: North East Asia includes China, Japan and South Korea

Source: World Oil Trade, etc.

Gas Imports Continued to Grow Rapidly in North East Asia

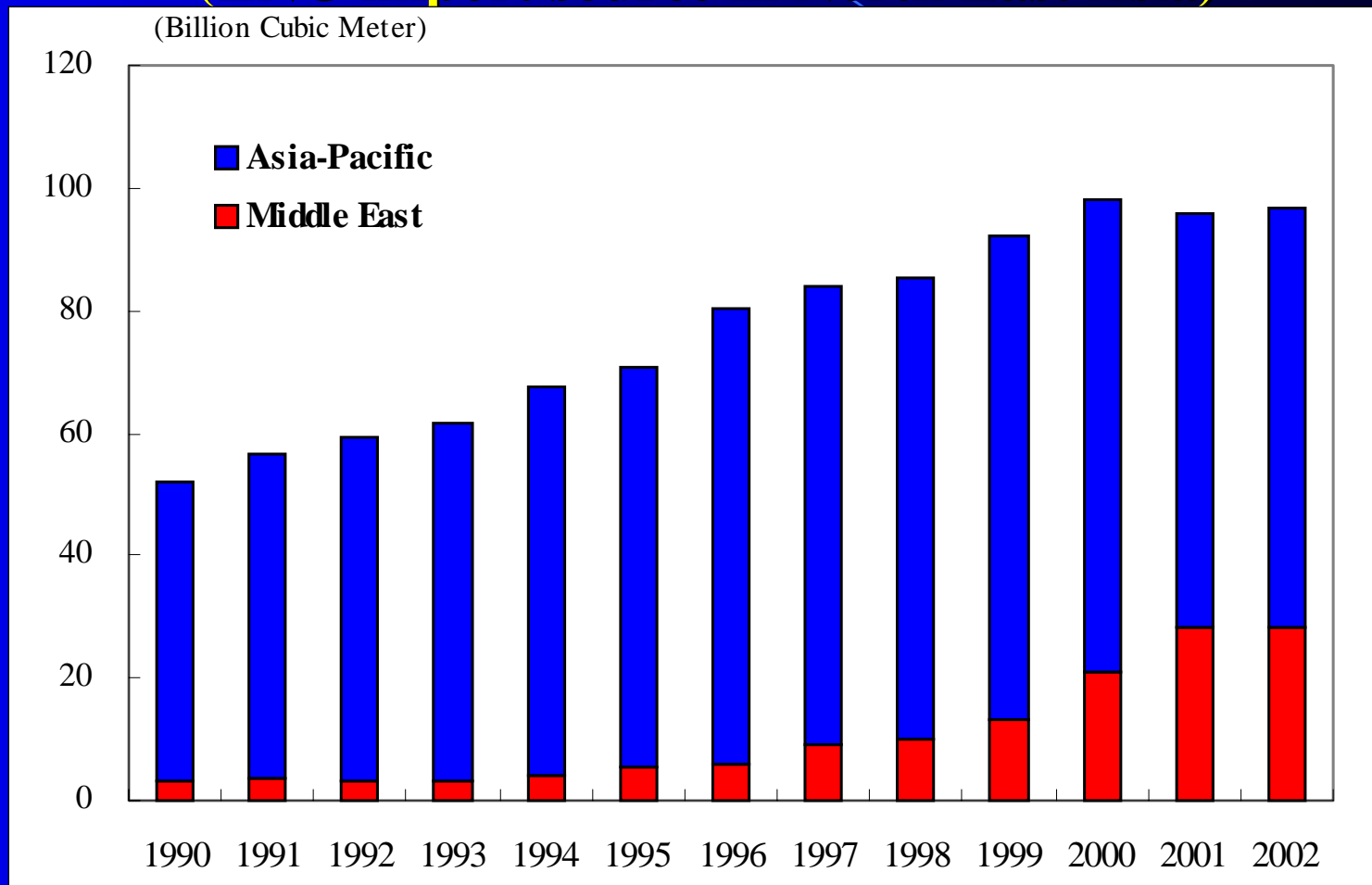


Note 1: North East Asia includes China, Japan and South Korea.

Note 2: Gas production numbers account for Chinese data only.

Source: BP Statistical Review of World Energy 2003

Asia-Pacific LNG dominates in North East Asia, but Middle East LNG increased (LNG import source in North East Asia)



Note: North East Asia includes China, Japan and South Korea

Source: BP Statistical Review of World Energy 2003

World Oil Price Increased After 1999

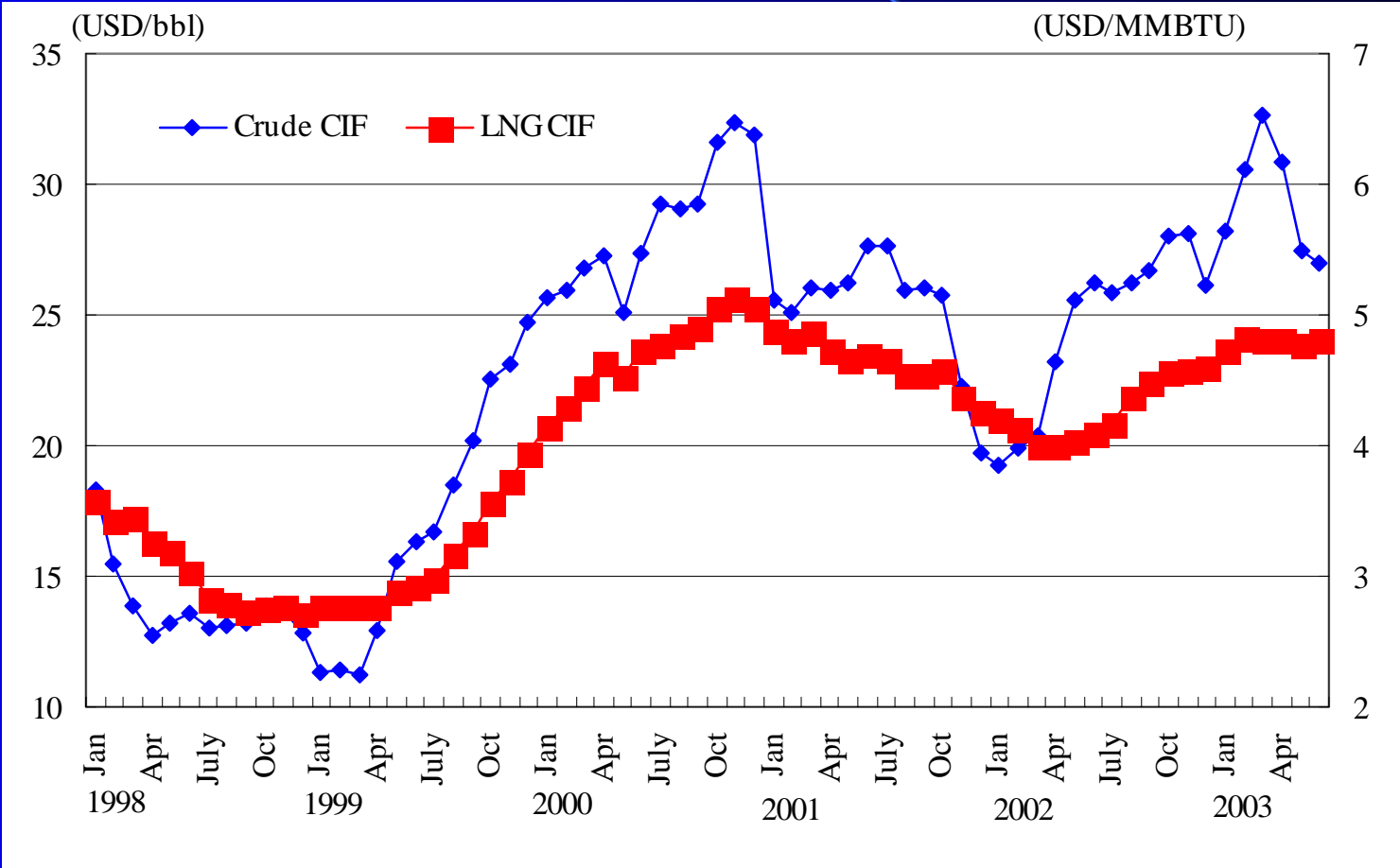
WTI Futures Price in NYMEX



Source: NYMEX data

Asian LNG Price follows Crude Oil Price

(Crude oil and LNG CIF prices in Japan)



Source: EDMC/IEEJ, "EDMC Energy Trend"

Growing Concerns for Energy Security in North East Asia

- **Energy import dependence expected to grow rapidly**
- **China, an emerging large-scale importer**
- **Oil price increase after 1999**
- **Impact of September 11**
- **War in Iraq and potential instability in the Middle East**
- **Growing attention to “Geopolitical aspects” of energy**

Perceived Risks for Energy Security

● Contingent risks

- * Political and military risks in main energy supply area
- * Accidents in energy supply chain
- * Consumers' panic behavior

● Structural risks

- * Supplier's embargo with political objectives
- * Market power of major suppliers
- * Supply/demand squeeze due to insufficient investment, rapid growth of demand, etc.
- * Resource constraints and chronic energy shortage
- * Side effects of market liberalization and environmental restrictions

Changes in the perception on the risks

- In the 1970s, embargo and OPEC market power tended to be regarded as the most serious risks
- In the 1980s, concerns over the above mentioned risks receded, because of the structural changes in the world oil market
- In the 1990s, contingents risks tended to be regarded as major energy security risks
- Recent price increase and events in the Middle East arouse public concern again, and energy security concern revisited

Energy Security Initiatives Taken in North East Asia

- **Energy supply diversification**
- **Oil stockpile buildup to strengthen emergency preparedness**
- **Strategy development to strengthen ties with major energy producers**
- **Promotion of regional cooperation**

Promotion of Natural Gas

- **Resource Potential in Asia**
- **Advanced Technologies (CCGT)**
- **Advantage as a “clean fuel”**
- **Constraints are: Price competitiveness, requirement for large-scale investment in infrastructure buildup. But Numbers of LNG, P/L projects being examined or implemented**

Promotion of natural gas

China. West Gas to East Project, Guangdong and Fujian LNG project, P/L project from East Siberia (Russia), etc. are now being examined/implemented.

Korea. Progress in the 3rd LNG terminal and the completion of domestic trunk P/L. LNG demand is expected to increase from 18.3 million tonnes in 2003 to over 23.2 million tonnes in 2012.

Japan : Natural gas demand is expected to increase from 75 million TOE in FY 1999 to 82-83 million TOE in FY 2010 in the latest METI outlook

Promotion of Coal

- **Abundant Resource Potential**
- **Top-class production capacity and record (China: 2nd largest producer)**
- **Availability of Australian coal (3rd largest producer) as regional resource**
- **Price competitiveness**
- **Promoted as base-load power source in many economies**
- **But environmental constraints exist (SO_x, NO_x, CO₂ emission). Importance of “Clean Technology” for further promotion on coal**

Nuclear Power Development in Asia

- **Nuclear power, stagnant in US/European market**
- **In Asia, nuclear power is promoted as:**
 - a) quasi-domestic energy
 - b) mainstream of alternative energy in power sector
 - c) important source of base-load power
- **New plants being constructed in Korea, China and Japan**

Import Source Diversification

- Reduce risks from over-dependence on a specific source (Disruption risk in the source, market power risk, etc.)
- Constraints for diversification are: export availability and import economics of crude oil for diversification purpose (Production/export capacity, physical property, transportation costs, refining configuration, etc.)
- Notable increase in crude oil imports from Africa
- Large-scale crude oil export PL projects from Russia are now being examined

However, Middle East will remain the mainstream of import source. Interdependence between Asia and Middle East will continue to grow.

Current Situation of Oil Stockpile in Asia

- Japan and Korea hold national stockpile under direct government control
- Stockpile obligation to oil company exist in Japan and Korea
- In Asian developing countries, stockpile levels are low in terms of international comparison
- Majority of stockpile is commercial inventories, not emergency stocks
- Problems in international cooperation framework

Efforts for Oil Stockpile Buildup To Enhance Emergency Preparedness

- **Korea:** National Stockpile program in progress, implemented by State KNOC. Korea joined IEA on April 2001
- **China:** Government announced a plan to establish national stockpile during the 10th 5 years plan. Inventory build-up for Iraqi crisis

Initiatives To Strengthen Ties With the Major Energy Producing Countries

- **Buildup “strategic partnership”**
 - VIP visits to and from the North East Asia/ Middle East/ Russia
 - Economic and energy cooperation agreement
- **Strengthen cross investment relation**
 - Upstream investment by the North East Asia (China, Japan, etc.)
 - Downstream investment in the North East Asia (Korea, China)

Implications of the Initiatives

- In principle, pursuit of energy security by each country can contribute to enhance regional and global energy security
- However, if initiatives to enhance energy security conducted too exclusively, tensions could be generated and escalated among Asian economies, thus damaging regional energy security
- Therefore, North East Asia has a common interest in establishing regional energy security.

International Cooperation in Asia

- **NE Asia:** Bilateral dialogue and cooperation (incl. Japan-Korea FTA talk). Seminar, workshop, etc. to facilitate regional cooperation.
- **ASEAN + 3 (Japan, Korea and China):** During the 8th IEF in Osaka, energy ministers of ASEAN + 3 met for the first time to discuss agenda for future cooperation. They agreed on such issues as: creation of emergency network; initiative of oil stockpile development; joint study on the Asian oil market; etc.
- **ASEAN:** Review of ASEAN Petroleum Security Agreement (APSA), MOU for Trans ASEAN Gas Pipeline (TAGP) and Trans ASEAN Power Grid (TAPG)

Importance of Regional Cooperation

- Understanding that energy security is a common challenge for (North East) Asia
- Cooperation can be beneficial:
 - Synergies
 - Optimal use of existing resources, capital, technology, know-how, infrastructure, etc.
 - Bargaining power
 - From “national energy market” to “regional energy market”
 - Efficiency
 - New business opportunity

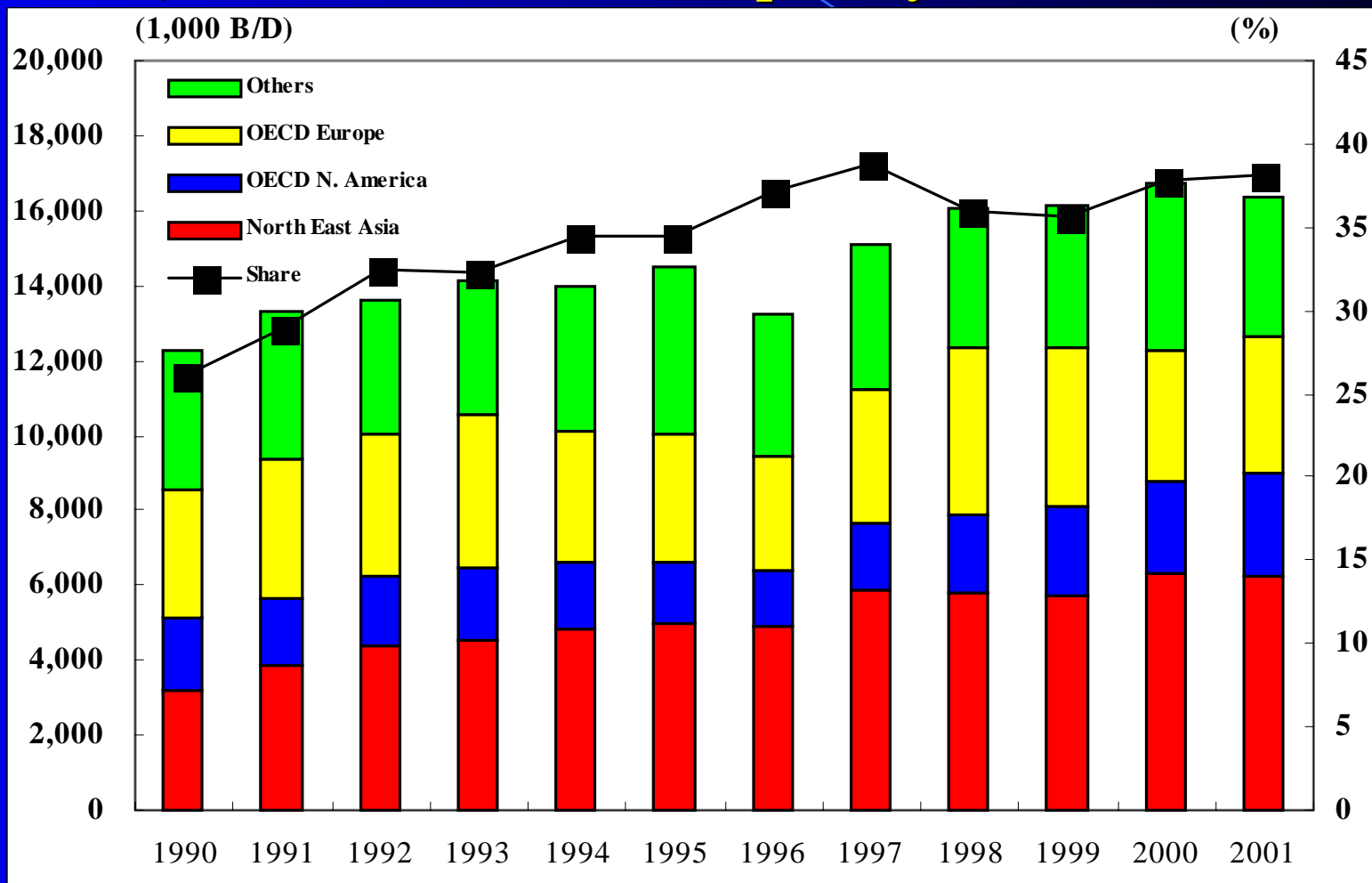
Importance of cooperation between East and West Asia (Middle East)

Middle East needs NE Asia because:

- **Growing market for their most important commodity**
- **Relative attractiveness compared to the US/European market**
- **Crucial needs for stable and sufficient revenue flows for their sustainable development**

North East Asia, an increasingly important outlet for Middle East Crude Oil

(Middle East crude oil export by destination)

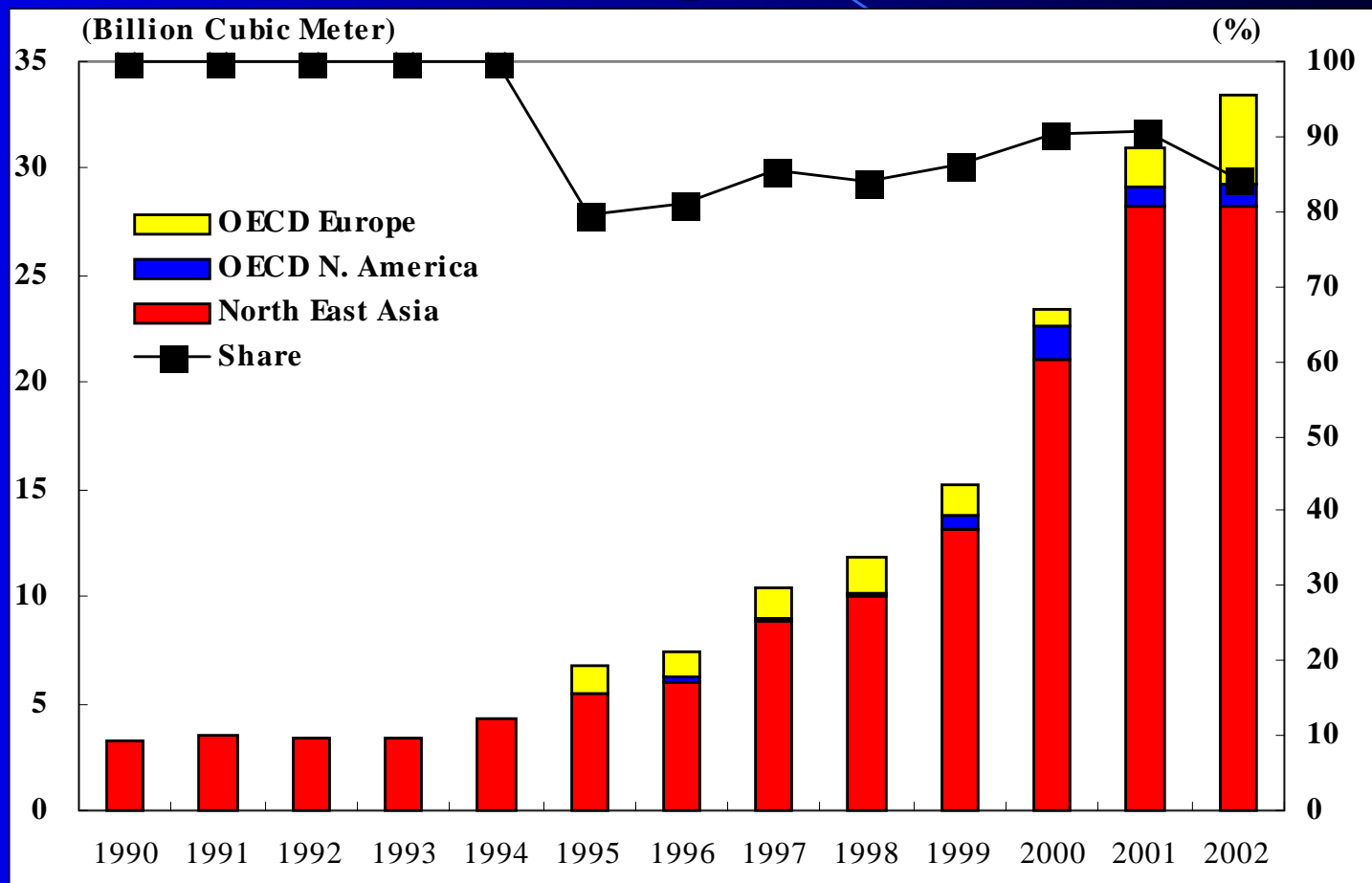


Note: North East Asia includes China, Japan and South Korea

Source: World Oil Trade, etc.

Most of Middle East LNG Heads for North East Asia

(Middle East LNG exports by destination)



Note: North East Asia includes China, Japan and South Korea

Source: BP Statistical Review of World Energy 2003

Middle East Needs Stable Energy Export Earnings

- **Energy revenue dependent economy**
- **Growing financial requirement for domestic economic development**
(Growing population, infrastructure buildup for higher living standard, etc.)
- **Needs for re-investment in their energy sector**
(to maintain and expand energy exports)
- **Importance of economic diversification as a long-term target**

Common Interests for North East Asia and the Middle East

- North East Asia needs sufficient energy supply at reasonable prices to meet their growing energy requirement (**Energy Supply Security**)
- Middle East needs markets for their energy commodity to secure stable and sufficient revenue flows (**Energy Demand Security**)
- To achieve sustainable development, it is essential for the two region to have a better understanding of the interdependency and pursue the common interests

To Strengthen the Interdependence,

- **Traditional approach (economic cooperation and promotion of investment and trade relation) is still important**
- **“Dialogue” to address an issue of common interests and seek better solution for the addressed issue can also be an important option**

The Issue of Oil Price Determination: A Case for the “Dialogue”

- **Oil market is globalized, and the NYMEX futures price is a world reference**
- **NYMEX WTI is influenced not only by global fundamentals, but by US (local) fundamentals and “market psychology”**
- **Increased price volatility and possibility of “overreaction”**
- **This volatile price is the world benchmark**
- **The issue of benchmark crude oil. In particular, it is essential to establish reliable benchmark for the Asian oil market**
- **Existence of the “Asian premium” (around 1\$/bbl average in the 1990s for Asian bound crude oil)**

Why It Matters?

- **The volatility and large swing in energy prices matter because:**
 - Economic dislocation due to excessively high or low energy prices
 - Difficulty in long-term economic and energy policy planning
 - An obstacle to energy investment?
- **The premium matters for Asian buyers because:**
 - Income transfer (Primary impacts)
 - International competitiveness of the economy and the industry
 - Impacts on growth in energy demand and industry

Conclusion

- **Pressed by the growing energy import dependence, North East Asia is now embarking on strategy development to enhance energy supply security**
- **Pursuit of energy security by individual countries is expected to contribute to enhance regional and global energy security.**
- **Differences in resources, technology, human capital, etc. will lead to difference in priority in each country**
- **Intra/Inter regional cooperation should be promoted for the benefit of regional and global economic development and prosperity**