

“Energy Challenge in Asia”

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METI
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1. Energy Challenge in Asia

Energy Demand/Supply Situation

- Rapid Growth of Energy Demand in Asia
- Increasing Dependence on Imported Energy (especially oil from the Middle East countries)

Challenge: Energy Security

- “Energy Security” in the broader sense:
- Secure stable supply of energy at a reasonable cost in an environmentally friendly manner



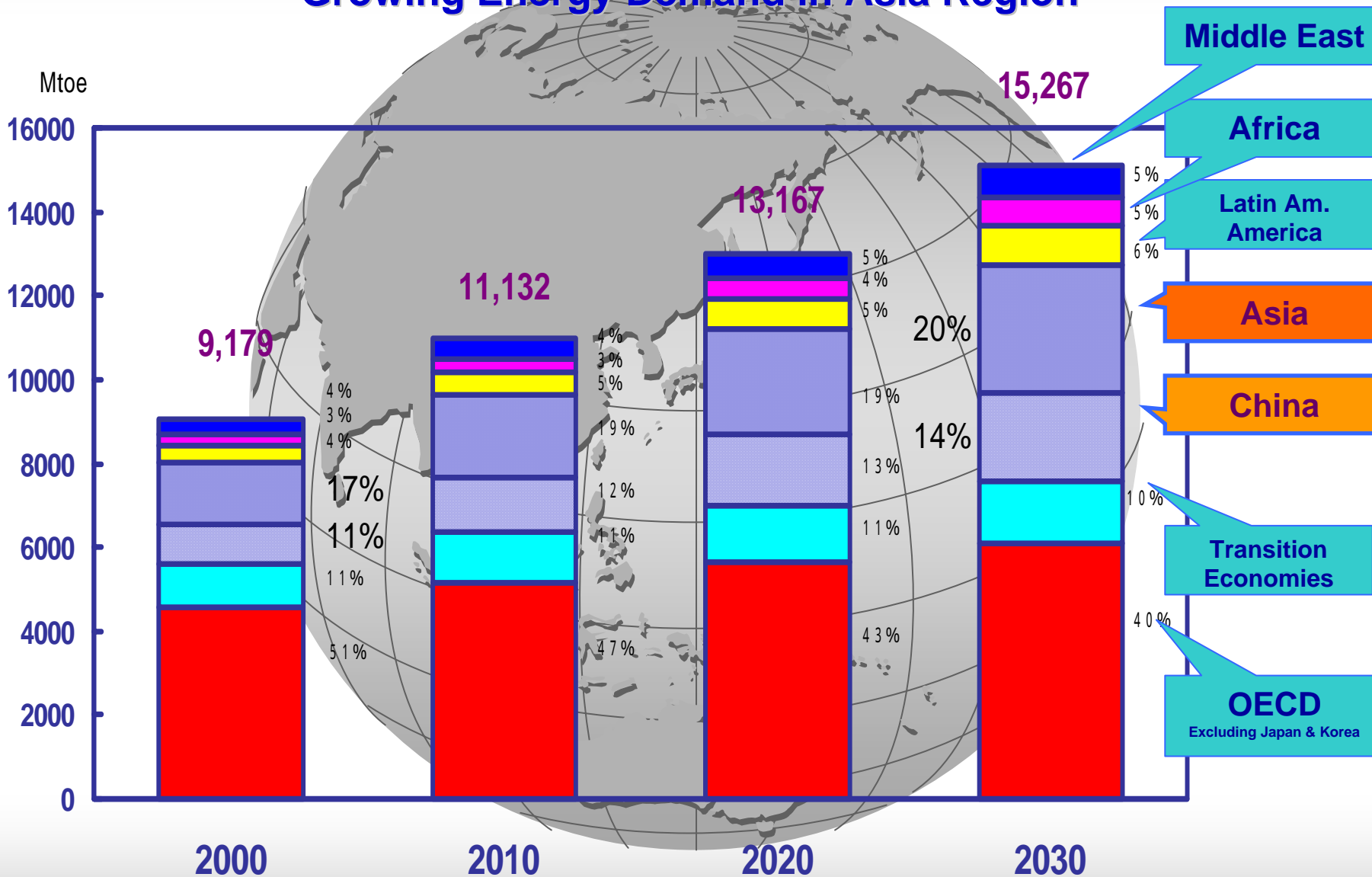
Enhancement of Asian Energy Security

2. Energy Situation in Asia

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- 1. Major Focal Point of Growing Demand in the International Energy Market**
 - 2. IEA Members (Japan and Korea) & Non-members (China, ASEAN and so on)**
 - 3. Indigenous Natural Gas & Oil Resources (China, Russia<East Siberia & Sakhalin>, and ASEAN producing countries)**

World Primary Energy Supply Outlook by Region

Growing Energy Demand in Asia Region



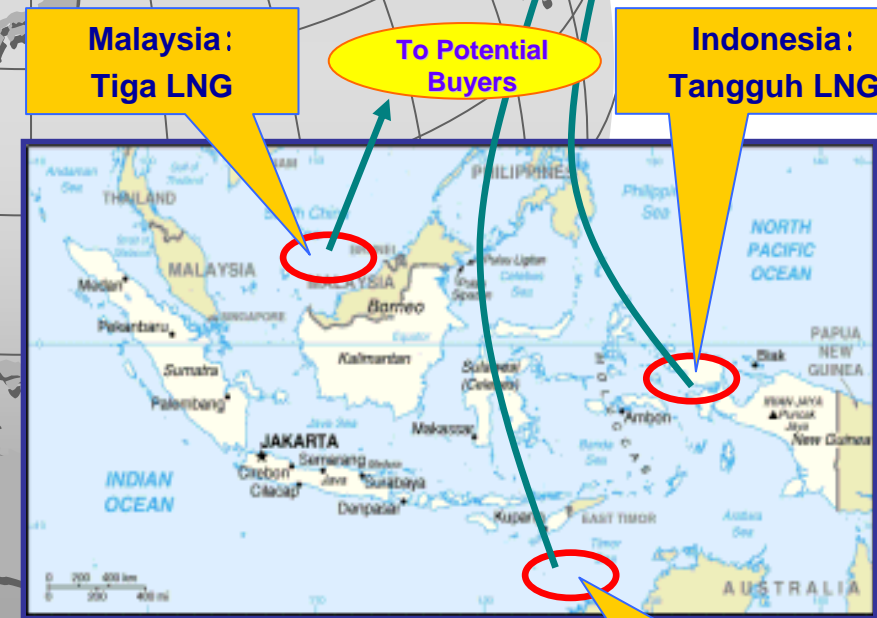
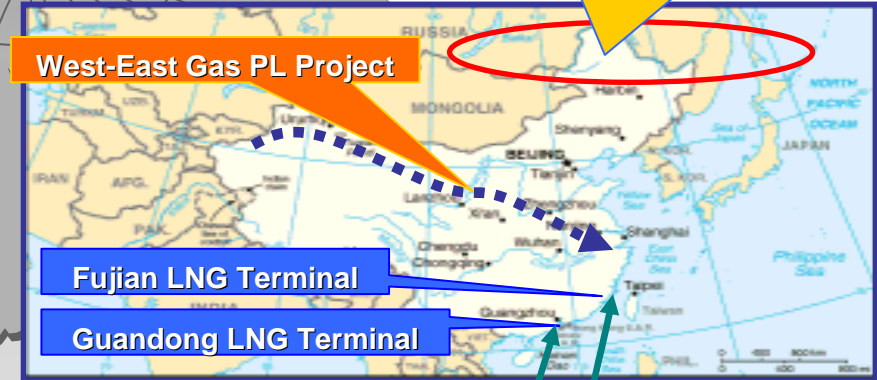
Natural Gas Reserves, Oil & Gas Projects in the Region

>Natural Gas Reserves

Gas Producing Countries	Proved Reserves (TCF)	Share of total (%)
Brunei	13.8	0.3
China	53.3	1.0
Indonesia	92.5	1.7
Malaysia	75.0	1.4
Australia	90.0	1.6
Russia (including Sakhalin)	1680.0	30.5

Source: BP Statistics 2003

>Recent Projects



Australia: NWS LNG

3. Issues to be addressed



3-1. Oil Market

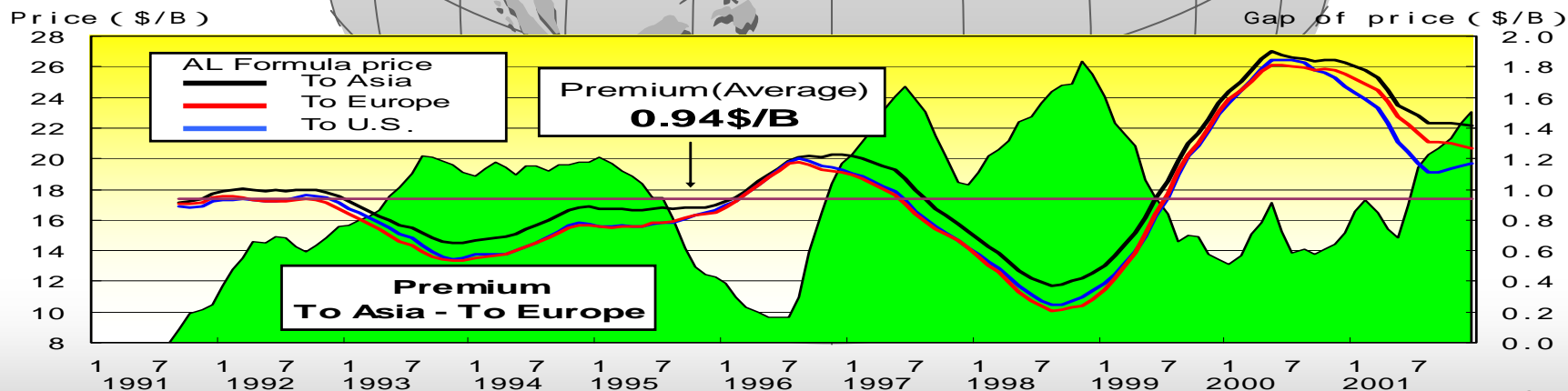
- Collective Asian demand should have market power vis-à-vis suppliers

➤ Establishing Oil Market in Asia

- Establishment of more open and transparent Asian Oil Market will create better price mechanism and supply-demand balance.

“Asian premium” is...

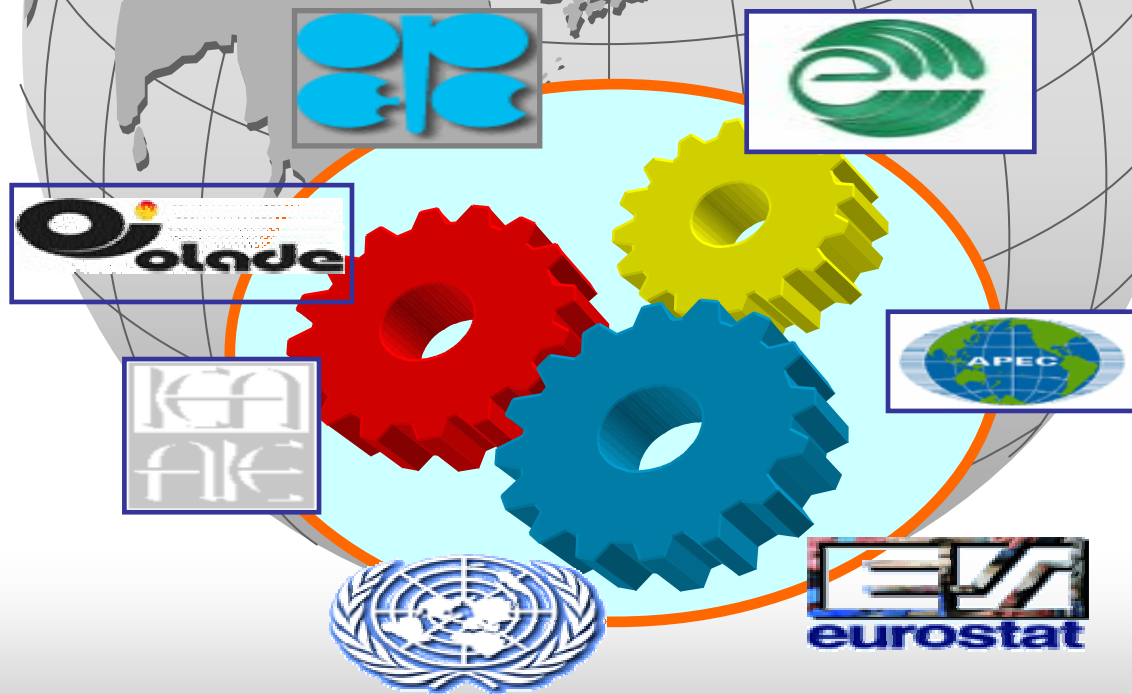
the situation that the price of oil which the Middle East exports to Asia is higher by \$1 ~ \$1.5 than that to Europe and U.S.A.



3-2. Energy Data

- To make the energy market function appropriately and to make a right energy policy
- Energy data / Statistics fundamental
- Harmonization, level up quality
(accuracy, timeliness, coverage)
- Capacity building

<Example: Joint Oil Data Initiative (JODI) >



3-3. Oil Stockpile

Japan & Korea

Keeping national oil stockpiling = IEA members

China

Decided to establish national oil stockpiling

ASEAN

Decided to revise "ASEAN Petroleum Security Agreement" (1986)

Planning to enhance regional emergency preparedness capability (2003).

Considering the continuous increase of Energy demand in Asia, as an Emergency Response Measure, Establishment of Oil Stockpiling and regional cooperation in Asia is important.

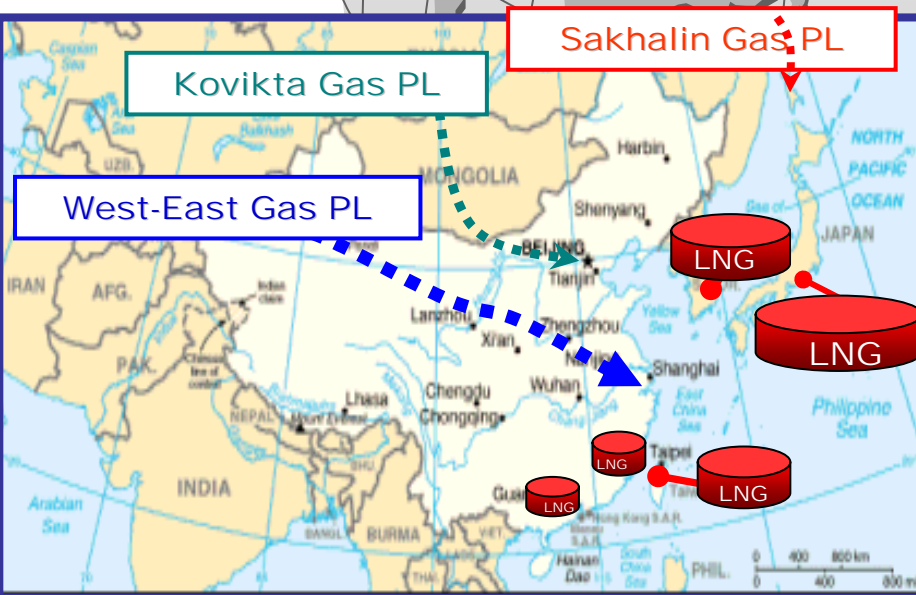
3-4. Natural Gas

>Recent Features in LNG Trade

Diversification of LNG market

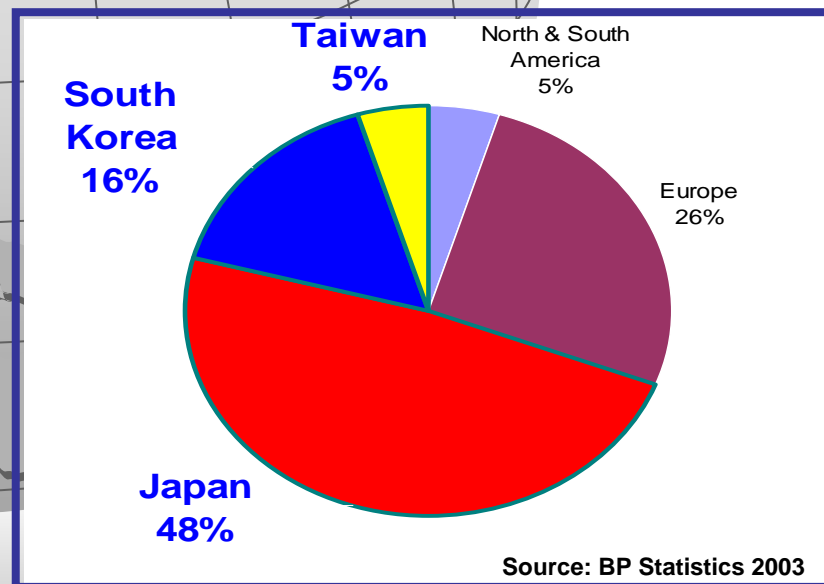
- Increase of LNG suppliers and consumers (China, etc)
- Increase of flexible contracts, spot transaction, swaps between seasons, etc.

>Natural Gas Development in Northeast Asia



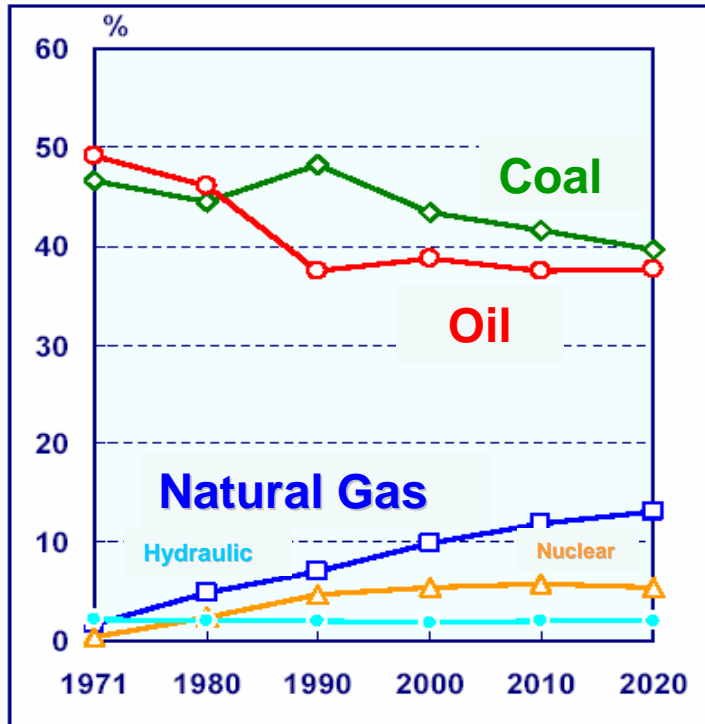
>World LNG Trade

Asia's Total Share: 69%



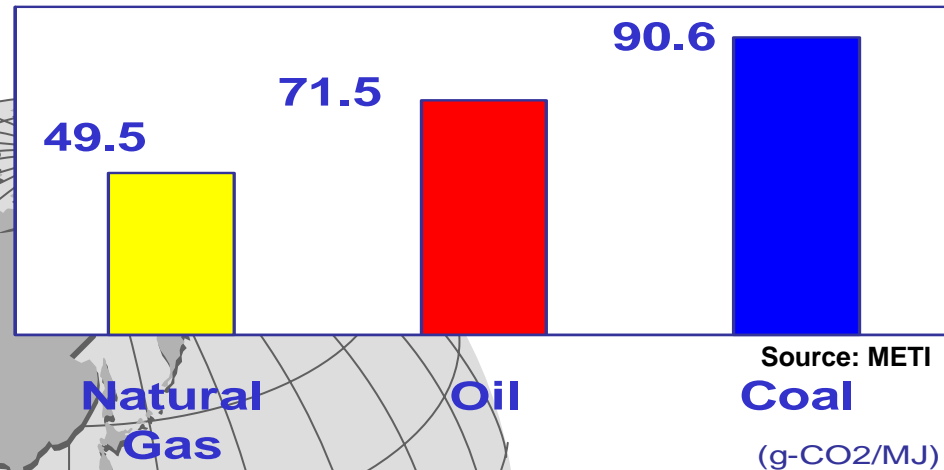
3-5. Coal

Primary Energy Consumption in Asia



Source: Institute of Energy Economics, Japan

Comparison of CO2 Emission per Calorie



>Coal will remain as major energy source in Asia till 2020.

>Emission of CO2 by consumption of Coal is almost double of Natural Gas

“Clean Coal Technology (CCT)” will contribute to...

- Reduction of Environmental Load.
- Effective Usage for other fossil fuels using coal as relatively rich resource.

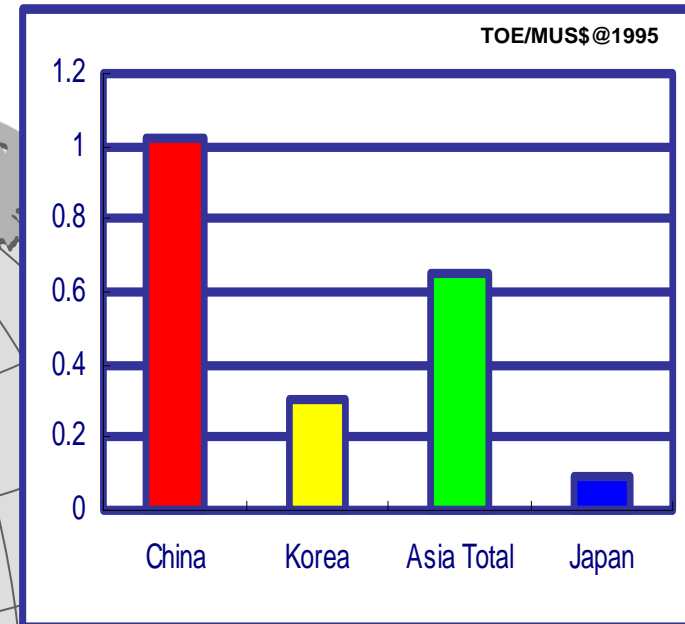
3-6. Energy Efficiency & Renewable

In Asia, each country shows different index on how much efficient in energy use.



- >Some countries have own technology and experience in efficient energy use.
- >Possibility on cooperation to share those technology and experience in Asian countries.

Total Primary Energy Supply per GDP 2001



Source: Energy Balance of OECD/Non-OECD Countries, IEA 2003

And also,

- >Renewable energy (hydro, solar, wind, geothermal, combustion, biomass, etc) to successfully deal with environment problems and energy security,
- >Further cooperation of renewable energy policy in Asian countries .

4. Russian Projects

4-1. Sakhalin Projects

	Sakhalin-1	Sakhalin-2
Recoverable Reserves	Oil: approx.2.3 Billion BBL	Oil: approx.1.1 Billion BBL
	Gas: approx. 17TCF	Gas: approx. 17TCF
Grand Project Cost	12 Billion USD	10 Billion USD
Schedule	2005: Commencement of Oil Production Max. 250,000B/D	1999: Commencement of Oil Production Max. 180,000B/D
	2008: Commencement of Natural Gas by pipeline *planning Max. 6MMt/yr Length: 1,300-1,600km	2007: Commencement of Natural Gas by LNG *planning Max. 9.6MMt/yr



- Source: Publication from Transneft



5. Forum, Dialogue & Cooperation



Bilateral Fora

between Japan & other Asia Region Countries



Republic of Korea

On 19 March 2004: The 12th Korea-Japan Energy Policy Dialogue will be held.



People's Republic of China

On 23 October 2003: The 7th China-Japan Energy Policy Dialogue.



Australia

On May 2004: The 28th Australia-Japan High Level Group on Energy and Minerals Consultations will be held.



Russian Federation

Under Planning 3rd Russia-Japan Energy Policy Dialogue



Multilateral Energy Forum



▶ ASEAN + 3 (Japan, China, and Korea) Energy Cooperation

- **Priority areas**
(from “HIRANUMA Initiative”, September 2002)
 - * Creation of an emergency network
 - * Initiative for the development of oil stockpiling
 - * Development of joint studies on the Asian oil market
 - * Initiative for the improvement of natural gas development
 - * Initiative for the improvement of energy efficiency and renewable energy
- **Natural Gas Forum, to be held in Shanghai in 29-30 March 2004**

Multilateral Energy Forum

► APEC Energy Cooperation



“Energy Security Initiative” (from 2000)

- * Monthly oil data collection
- * Energy information sharing, etc.

► IEF (The International Energy Forum)

- 8th Forum achievements (September, 2002)

- * Confirmation of collaboration between oil-producing and oil consuming countries toward stabilization of the oil market
- * Support for Joint Oil Data Initiative (JODI)
(Priority: M-1 Data on production, stocks, and demand)
- * Sharing awareness of the energy supply-demand situation in Asia
- * Confirmation of the importance of natural gas
- * Agreement to set up a permanent secretariat



- 9th Forum: Amsterdam, May 2004

6. Japan's Energy Policy Review

Japan's Energy Policy including long-term outlook is under review.

Related Points:

1. Asian Regional Approach
2. Natural Gas Shift
3. Oil Market in Asia
4. Energy / Environment Integrated Policy