

Cooperative Measures Enhancing Oil Security in Northeast Asia

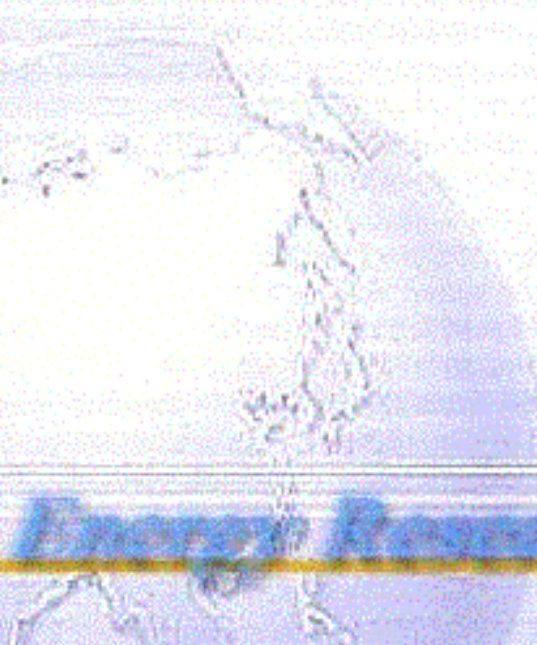
Seoul, Korea, September 6, 2003

China Petroleum Security and Regional Cooperation

LIU Xiaoli

ZHANG Yousheng

Energy Research Institute, NDRC



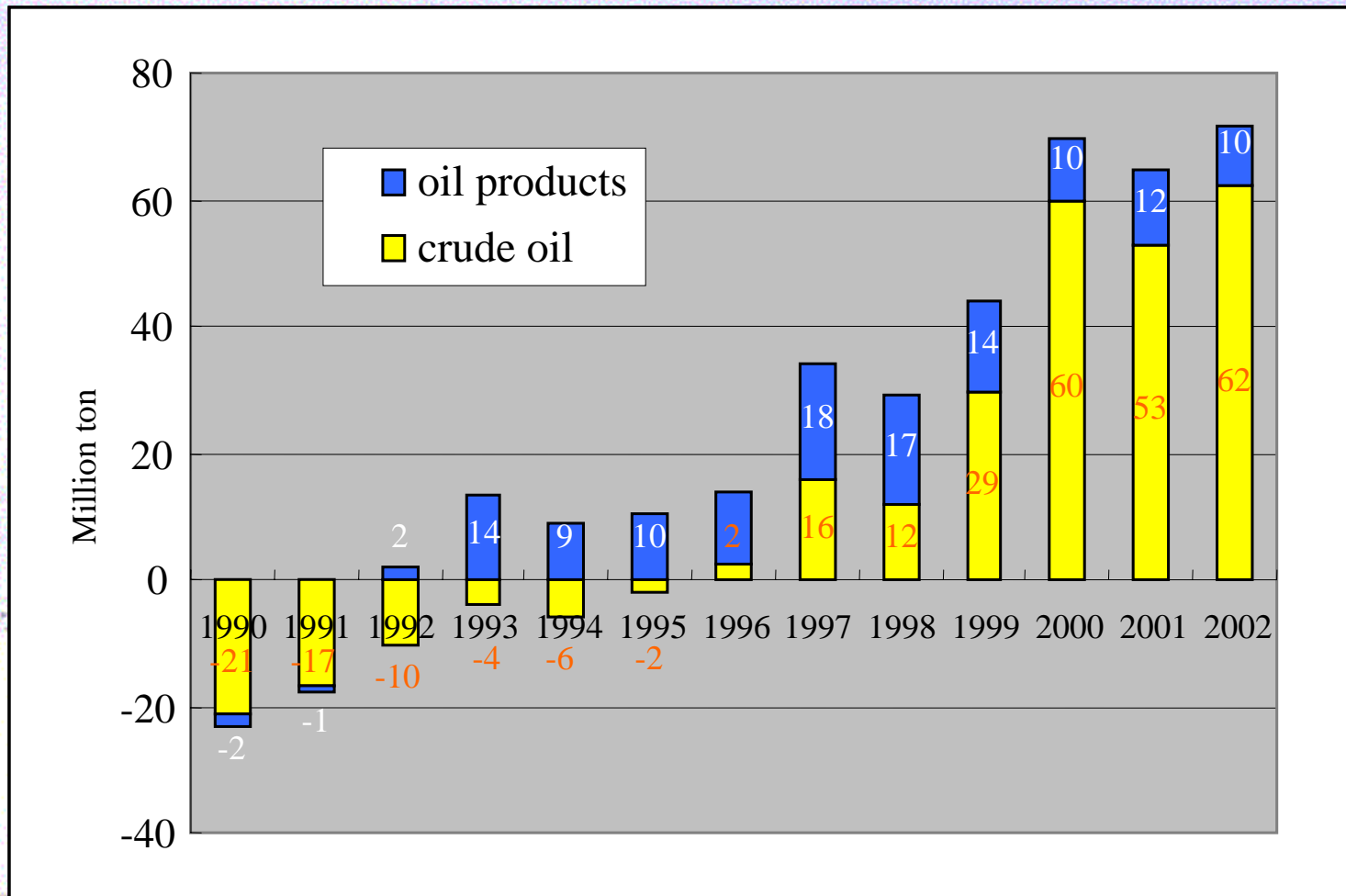
Contents

- **China Petroleum Industry**
- **China's Petroleum Demand/Supply Outlook**
- **Main Measures of Ensuring China Oil Supply Security**
- **Cooperative Measures Enhancing Oil Security in NEA Countries**

China Petroleum Industry

- 5 companies (CNPC, SINOPEC, CNOOC, Yanchang Petroleum Group of Shaanxi Province, ChinaCBM).
- Proven reserves: (by the end of year 2001)
 - oil: reached 21.76 billion tones
 - gas: reached 2.35 trillion cubic meters
- Produced 167 million tons of crude oil, 31.57 billion cubic meters • ranking the 5th and 16th in the world respectively in 2002
- oil fields: 558; gas fields: 658
- Share of oil and gas in total energy production & consumption mix
 - oil: 17.2% in total energy production; 23.4% in total energy consumption in 2002
 - gas: 3.2% in total energy production; 2.7% in total energy consumption in 2002
- Oil pipeline: 11,200 km (by the end of year 2000)
- Gas pipeline: 12,041 km (by the end of year 2000)
- Refinery capacities: 270 Mt, ranking the 3rd in the world

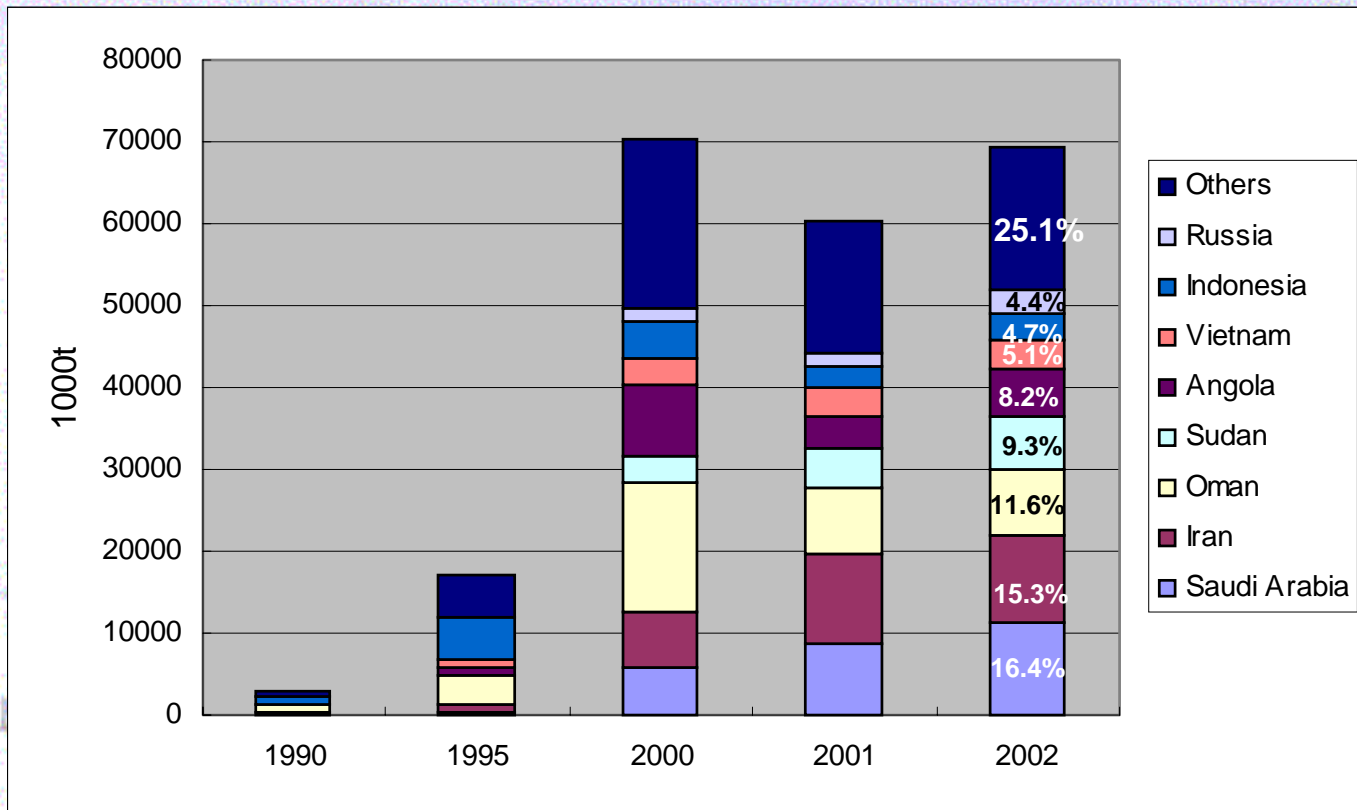
China's Net Oil Imports since 1990s



Become net oil products importing country in 1992

Become net crude oil importing country in 1996

China Crude Oil Imports by Source



Middle East:49.6%

Africa:22.8%

Asia Pacific:17.1%

Euro/W Hemisph:10.6%

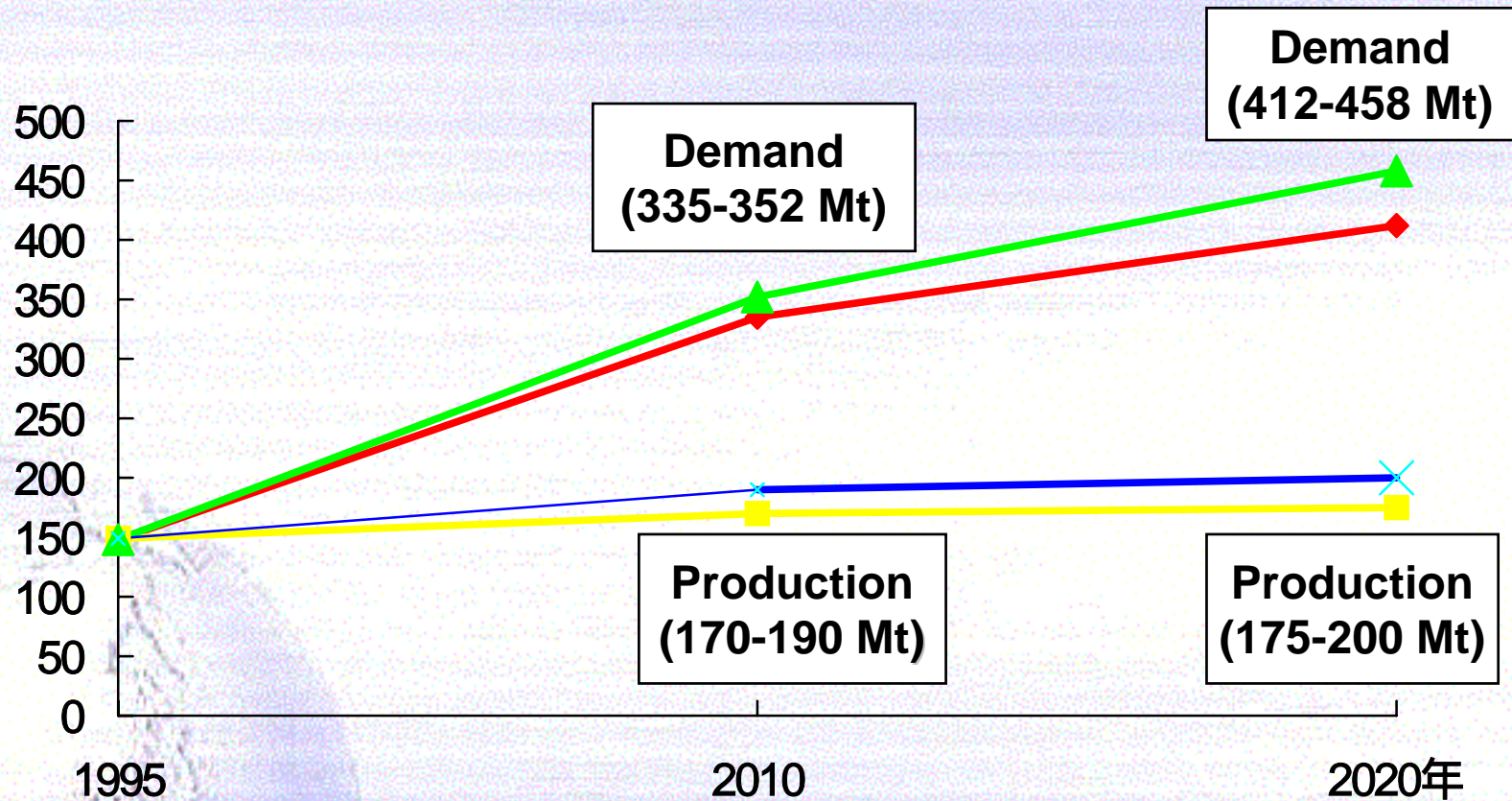
China's Petroleum Demand Outlook

- **Full construction of well-off society, and the GDP to be expected multiplied two times at 2020 compared to 2000**
- **Improvement of living standard**
- **Regulation and optimization of energy structure**
- **Challenge of increasing national economic competence**
- **Pressure of environmental protection**

China's Petroleum Demand Outlook(cont'd)

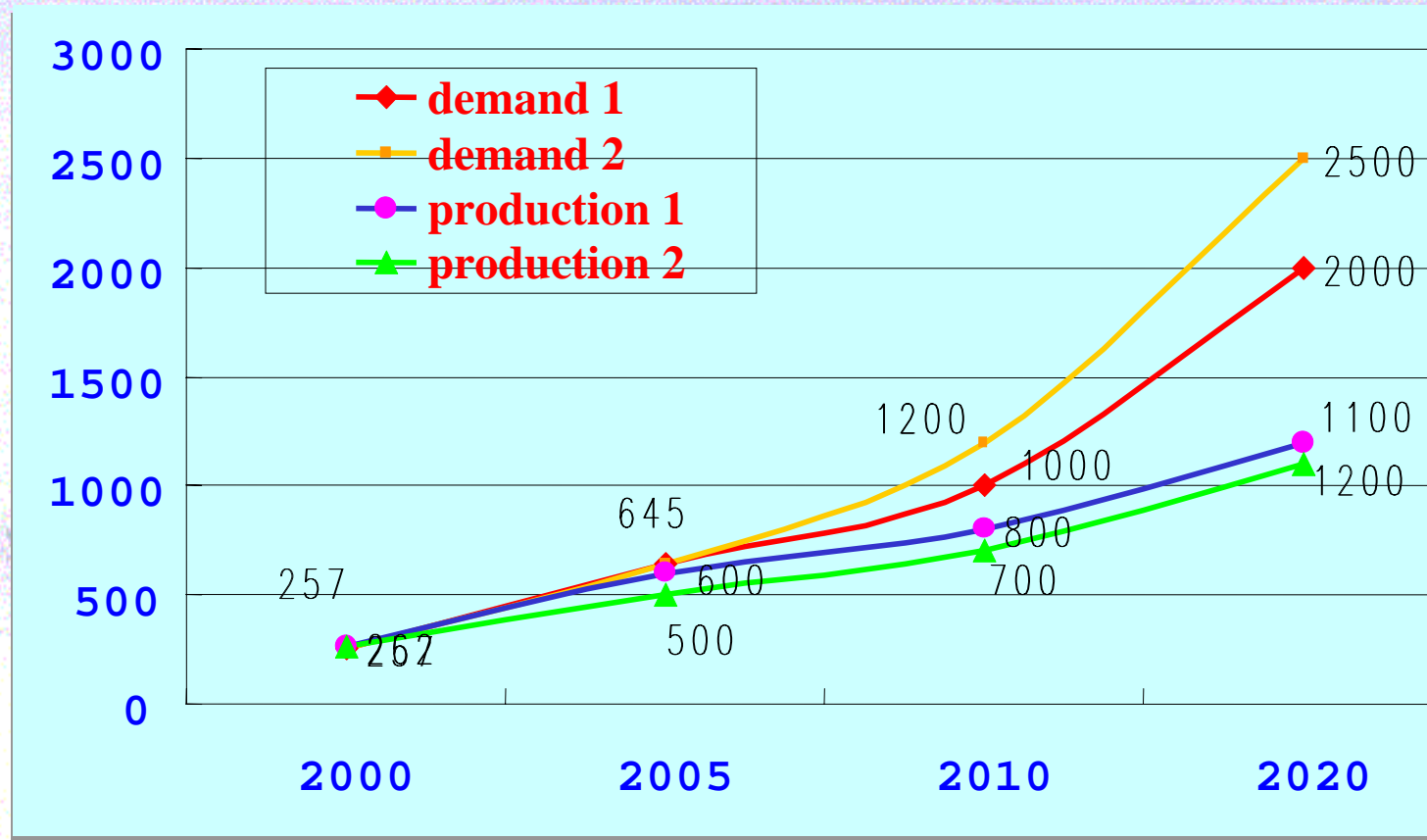
- To be a major high quality energy in the coming two decades
- Slight higher speed of oil demand increase compared to energy demand increase in the coming 20 years
- Improvement of oil proportion in primary energy consumption
- To be mainly used in transportation and industry sectors
- Improvement of oil consumption per person, increasing by about 60% at 2020 compared to 2000

Estimation of China's Oil Demand/Supply in the future



Over 145 Mt of oil will be imported in 2010 and over 212 Mt of oil will be imported in 2020

Projection of Gas Supply & Demand in China



➤ the share of gas in the total energy demand will be increased from 2.7% of 2002 to around 7% of 2010 and to 11-12% of 2020

➤ over 20 billion cubic meters of gas will be imported in 2010 and over 90 billion cubic meters of gas will be imported in 2020

Basic Viewpoint on the Oil Supply Security in China

- China will be one of the main oil-producing countries in the world although China will import a lot of oil in the future;
- The oil supply insufficiency will be a long-term problem due to continuously increasing demand in the future;
- Oil supply security is neither the shortage of the world oil resources nor long time supply insufficiency, nor the oil embargo due to the political or the military conflict;
- The potential emergency in the Middle East and other oil-producing countries may cause the fluctuation of the oil price and supply interruption in short time.

Therefore, China oil supply security strategy must be drawn out at once.

Major Problems Encountered of Oil Supply Security in China

- **Severer conflict between oil supply and oil demand in a new situation;**
- **Be difficulty to enhance domestic oil production**
- **Utilization of overseas oil resource;**
- **Relatively concentrated import source;**
- **Sole sea transportation channel;**
- **Low level of the oil stockpiling in enterprises;**
- **Not having state strategy oil stockpiling**

Main Measures to Ensure Oil Supply Security in China

Deal with the temporary supply interruption:

- **Establishment of strategic oil stockpiling and oil stockpiling in enterprises**

Deal with the long-term oil supply security:

- **Increasing domestic oil production**
- **Active utilization of overseas resources**
- **Equal importance on development and conservation of energy**
- **Development of alternative energy**
- **Enhancing bilateral and multilateral cooperation and establishing regional petroleum security system**

Establishment of State Oil Stockpiling

Chinese government decided to establish state strategy oil stockpiling and wrote it into the Tenth-Five Year Energy Plan in order to ensure nation's oil supply security and enhance the capacity of government control market.

The energy plan points out to strive for completing the construction of state strategy oil stockpiling in certain scale during the Tenth-Five Year Plan period and to encourage enterprises to expand the capacity of their own oil stockpiling.

Establishment of State Oil Stockpiling

Size:

800*10⁴m³ in 2005, equal to the 30 days import amount;
in 2010, equal to the 50 days import amount.

Form:

Oil resource conserving(some oil fields)

Oil stockpiling (onshore storage tank; offshore tanks; underground)

Framework:

State & Corporation stockpiling

Site:

Zhenghai and Hangzhou bay in Zhejiang province;

Dalian in Liaoning Province; Huangdao in Shandong province;

Daya bay in Guangdong province.

Management:

The scale and mobilization of the oil stockpiling will be made by the State Council; Daily maintenance and management will be relegated to these experience and qualified corporation.

Enhancing exploration and increasing domestic oil productions

- ❖ **Stabilization of oil production in the east area;**
- ❖ **Enhancing the oil production in the west area;**
- ❖ **Increasing the oil production from offshore;**
- ❖ **In the condition of economic feasibility, to improve utilization of low penetration oil, heavy oil and thick oil**

Actively using overseas oil and gas resources

- ❖ **To set up overseas oil and gas production bases to obtain overseas resources**
- ❖ **To share experiences and technologies with some foreign countries and to develop and utilize overseas resources together**
- ❖ **Multiple and diversified importation**
 - ✓ **Multiple import sources**
 - ✓ **Multiple trade manners**
 - ✓ **Diversified items**
 - ✓ **Multiple transportation ways**

Conservation Oil Measures

- Carrying on the comprehensive economic policy (such as investment, finance, tax) to restrain the low efficiency oil consumption;
- Regulating industrial structure, developing products with low energy consumption and high value-added while decrease production of energy-intensive and low value-added products
- Paying attention to saving in petroleum and petrochemical industry, as well as conducting low cost strategy to obtain energy saving benefit

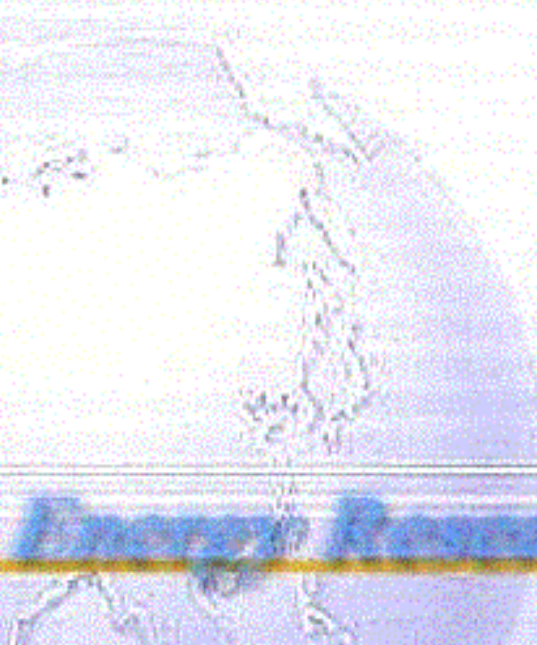
Development of Alternative Energy

- **Actively utilizing the natural gas in large scale**
- **Development and popularization of clean coal technology is a strategic choice to ensure Chinese oil security and sustainable development.**

Utilization of clean coal technologies should be sought, such as coal slurry, high efficient and clean combustion technologies of coal, integrative production of coal and chemical industry, liquefaction and gasification of coal, and underground gasification of coal, etc.

Development of Alternative Energy

- To expedite the development of the market-oriented of fuel cell motors,
- To convert bio-mass into methanol & ethanol;
- To follow up researches of other oil alternatives



Cooperative Measures Enhancing Oil Security in NEA Countries

- **Dialogues/Forums should be kicked off for regional cooperation(government to government, government and business mixture type, business to business)**
- **The commission (counsel system) of the NEA energy cooperation should be established;**
- **The rule as Energy Charter Treaty(ECT) should be set up at first;**
- **To promote the projects of crude oil or natural gas transportation pipelines among countries in NEA to be implemented;**

Cooperative Measures Enhancing Oil Security in NEA Countries (cont'd)

- **The feasible study on the common oil stockpiling of the main consumption countries in NEA should be carried out;**
- **Enhancing cooperation in the world oil and gas resources contest. The different advantages, such as Japan's financial, China's exploration experience, should be brought fully into play;**
- **We suggest that China may increase the importing amount of oil products from Japan and Korea, so the residual refining capacity of the crude oil in Japan and Korea can be effectively utilized;**

Cooperative Measures Enhancing Oil Security in NEA Countries(cont'd)

- **Active utilization of the oil and natural gas in Russian and Central Asia to ensure regional oil security, and helping to resolve the discrimination of oil price from Middle East.**
- **Commonly bear the risk or gain the profit of the oil trade by purchasing, mutual share-holding and allying among the main oil consumption countries in NEA.**
- **The feasibility and necessary research of the second oil-transportation alleyway from Middle East to NEA.**



Tank you !