

China-EU Energy and Environmental Cooperation

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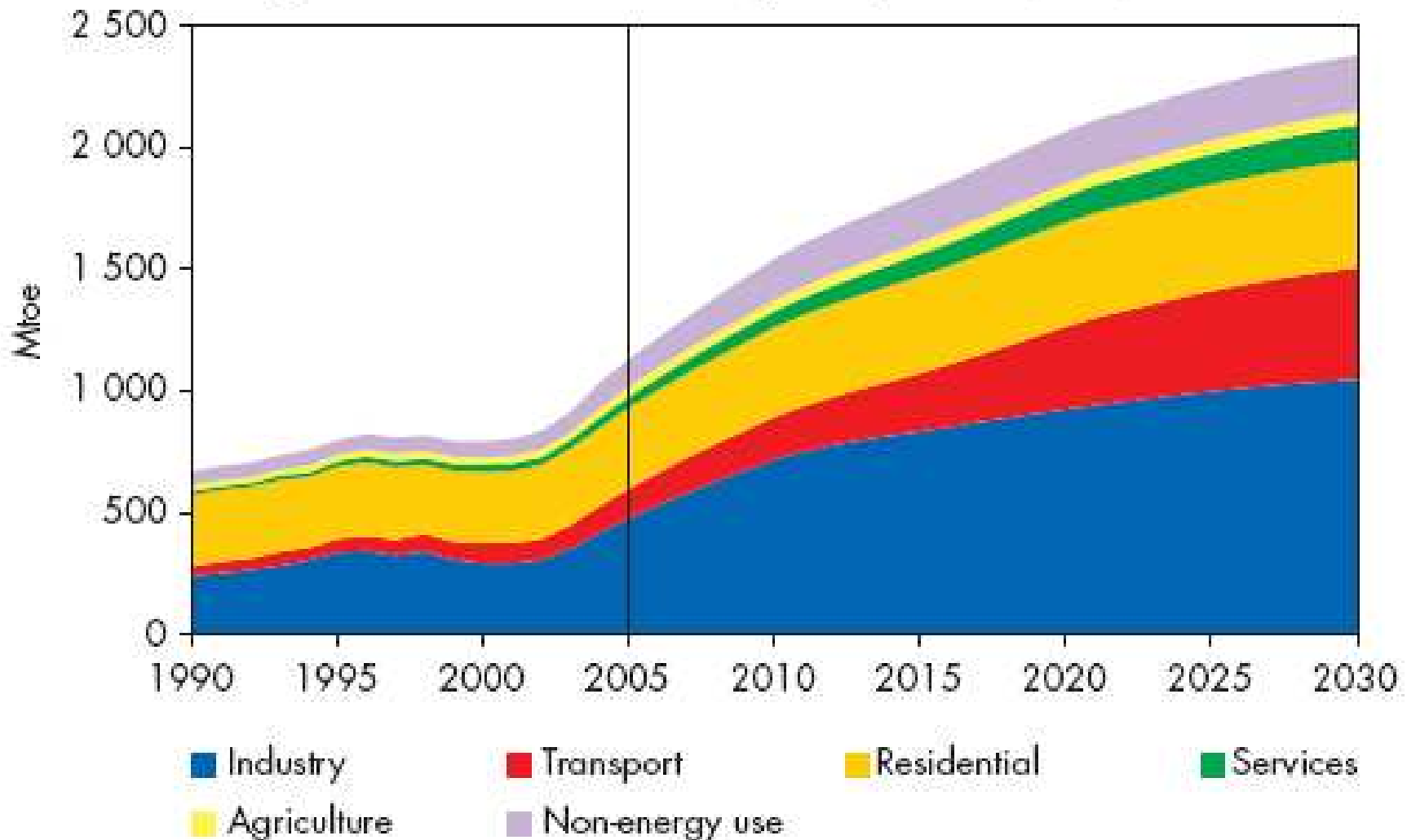
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I. Energy and environmental challenges are closely linked with the pace and level of economic development.

- 1. China undergoes rapid industrialisation and urbanisation.
- 2. From 1978-2007 its energy consumption quadrupled.
- 3. Coal constitutes roughly 70% of China's energy sources. Half of its consumed oil is imported.
- 4. China confront serious environmental degradation.

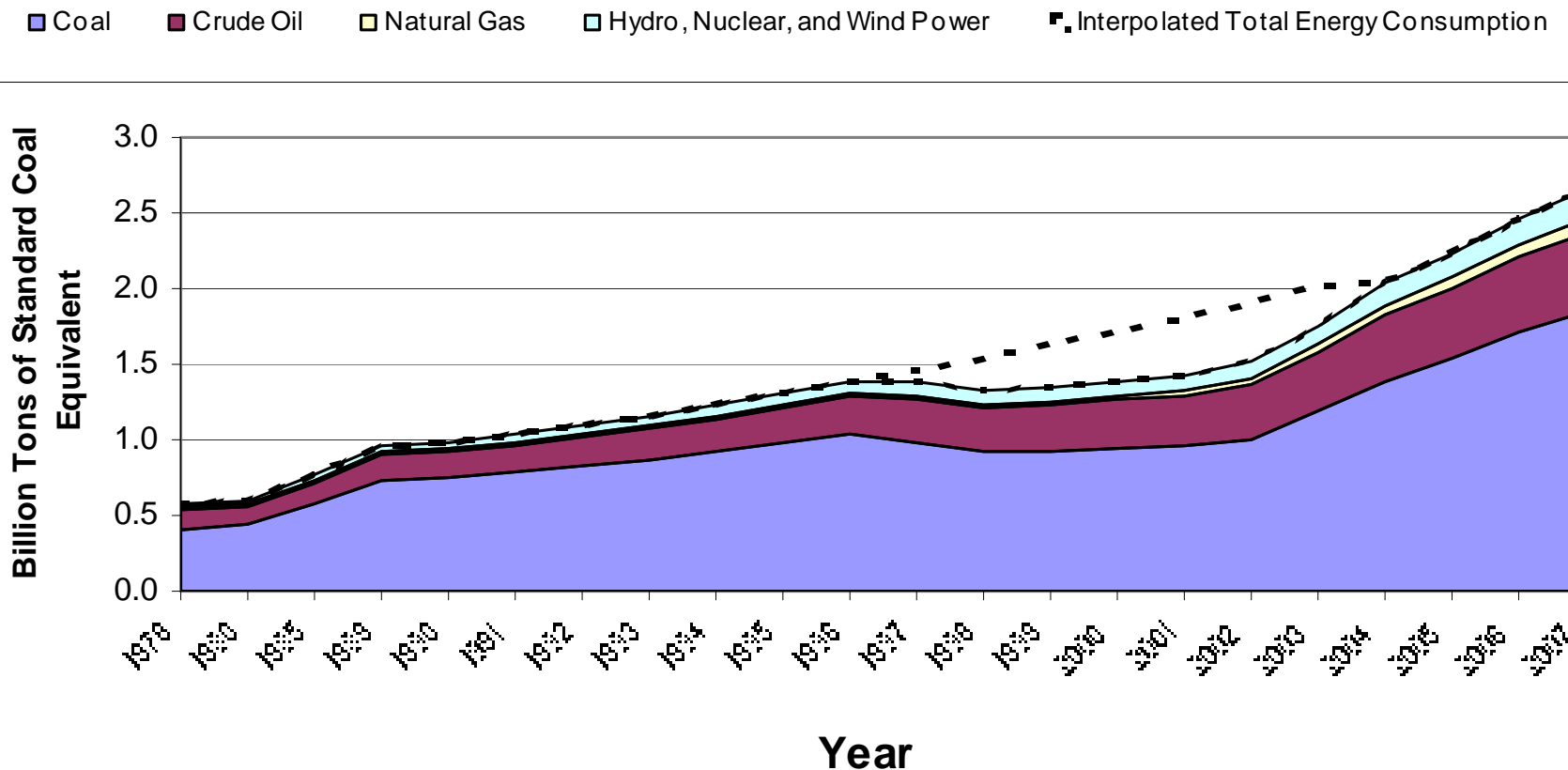
China's Energy Profile

Figure 9.2: Total Final Consumption by Sector (Mtoe)



China's Energy Profile (2)

China's Total Energy Consumption and Composition, 1978-2007



From 1978-2007 energy consumption quadrupled. Official data from 1997 to 2001 seem questionable.

Compared to large and developed economies, China's reliance on coal, and to a lesser extent hydropower, is heavy.

Sources of Energy Consumption of Major Economies, 2005

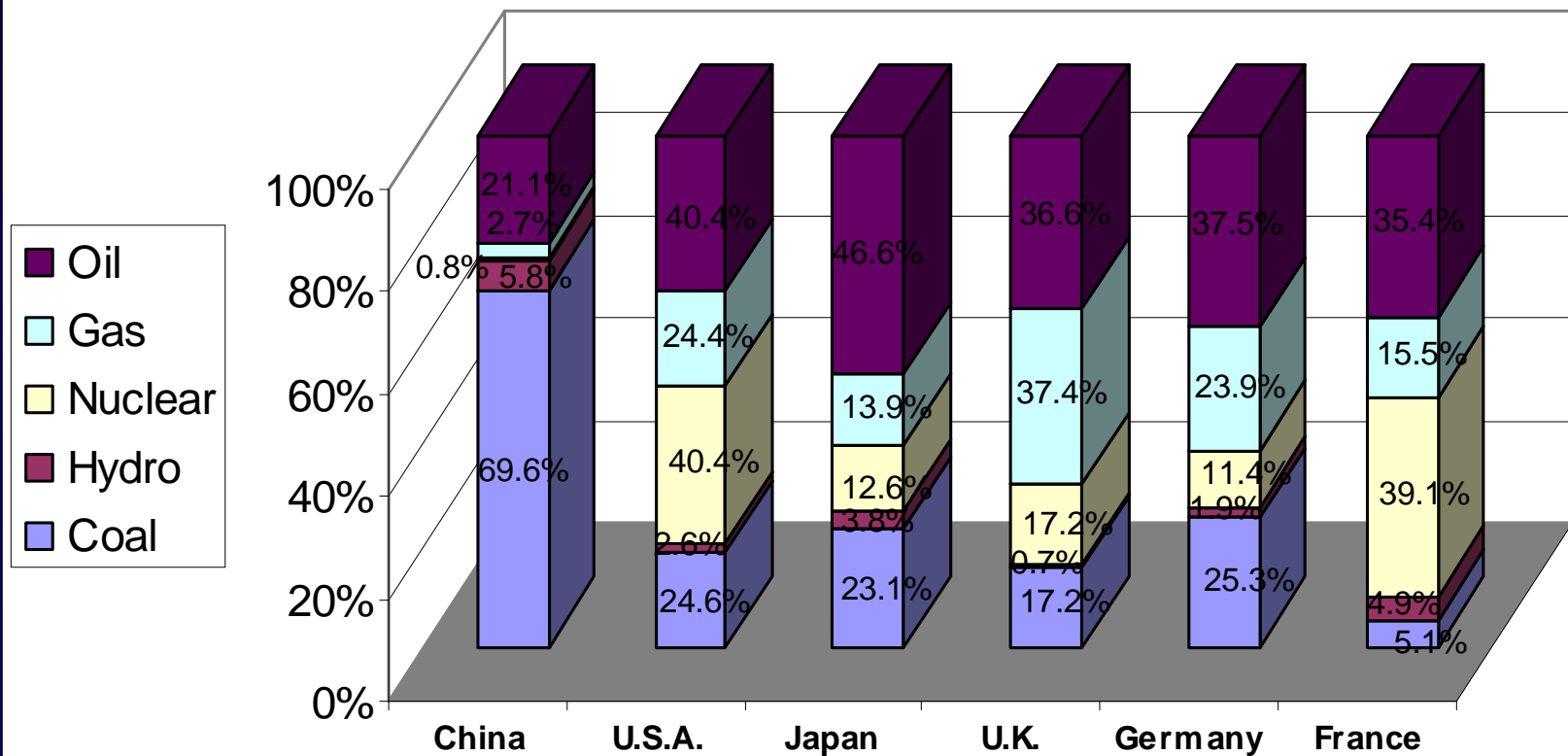
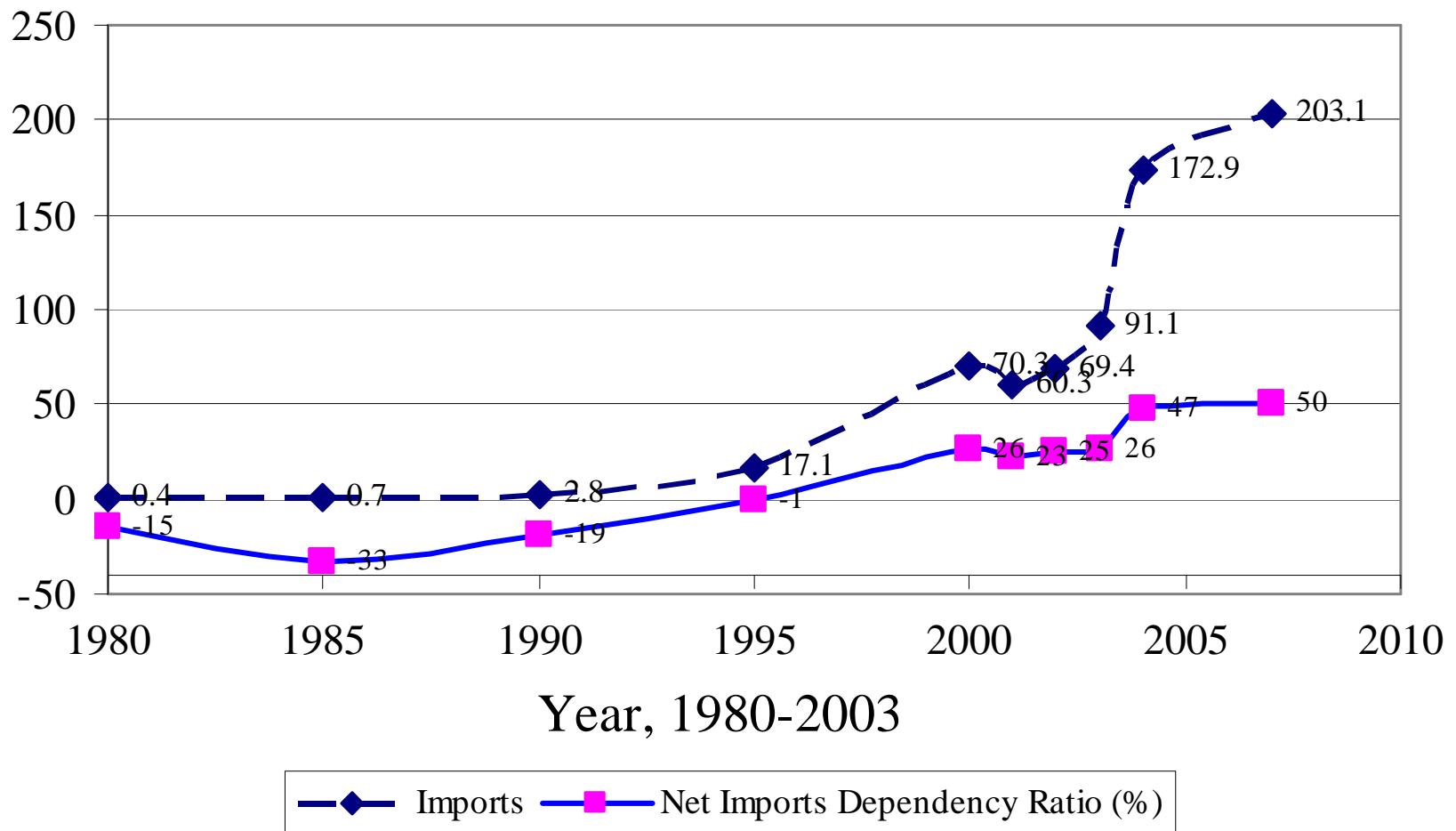


Figure 1. China's Imports of Crude Oil (million tons) and Oil Imports Dependency Ratio (%), 1980-2007



II. China and EU can cooperate over energy and environmental issues.

1. Areas for Energy Cooperation

- **Energy efficiency.**

A wide range of areas for improvement in energy efficiency (industrial processes; building; auto fuel).

- **Clean coal technology.**

Clean coal can reduce pollution.

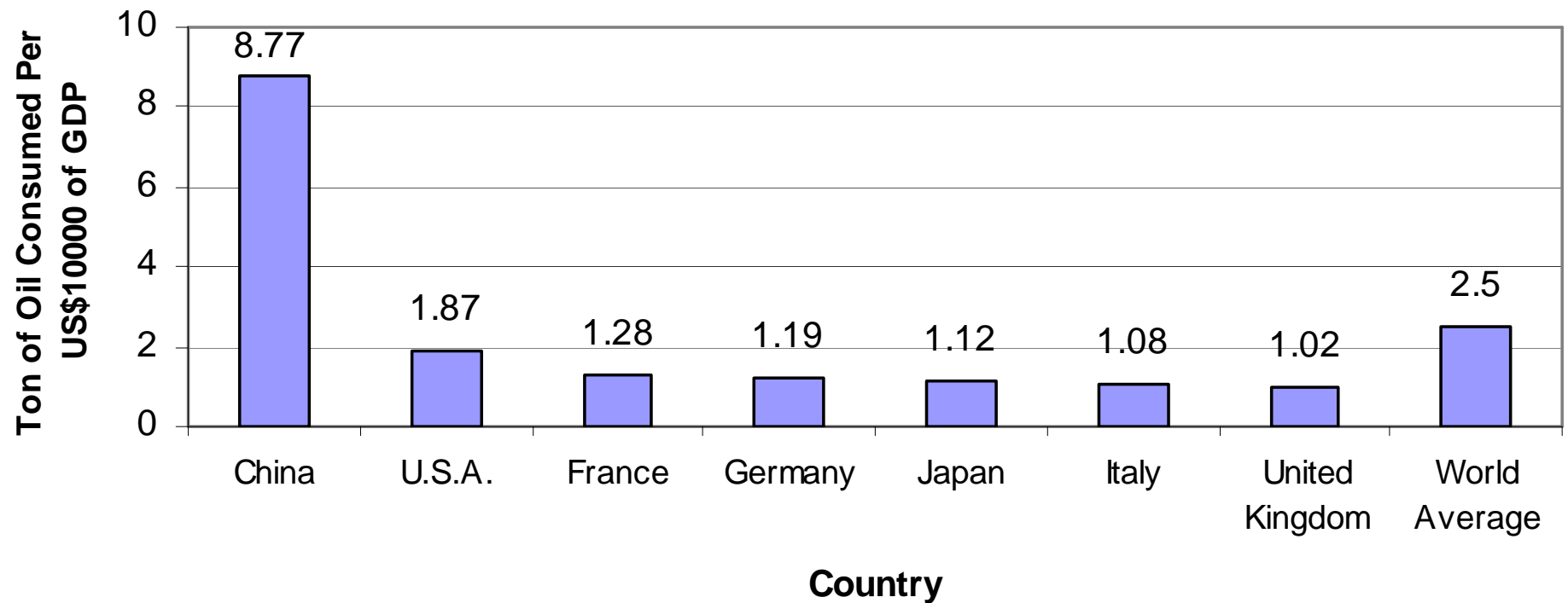
- **Nuclear power and renewable energy.**

It accounted for only 0.8% of energy consumption in 2005.
In 2008 10% of electricity power came from renewable energy sources (including hydropower).

- **Pricing and market mechanism.**

Despite China's improvement in energy efficiency, it was 3.5 times of the world average in 2005.

Energy Intensity of Major Economies



2. Energy Cooperation: External Side

- Jointly explore and process energy resources.
- Use their leverage in joint negotiation with energy exporters.
- Share and exchange information and technology concerning energy.

3. Areas for China-EU Cooperation on Conventional Environmental Issues

- Rule Making

 - Ambiguity of Legal Measures

 - Limited Rulemaking Notice

 - Lack of Rules and Forms to Support Effective Laws.

- Sound Institutions (Avoid Overlapping Agencies)

- Infrastructural Development.

- Funding

- Public Awareness

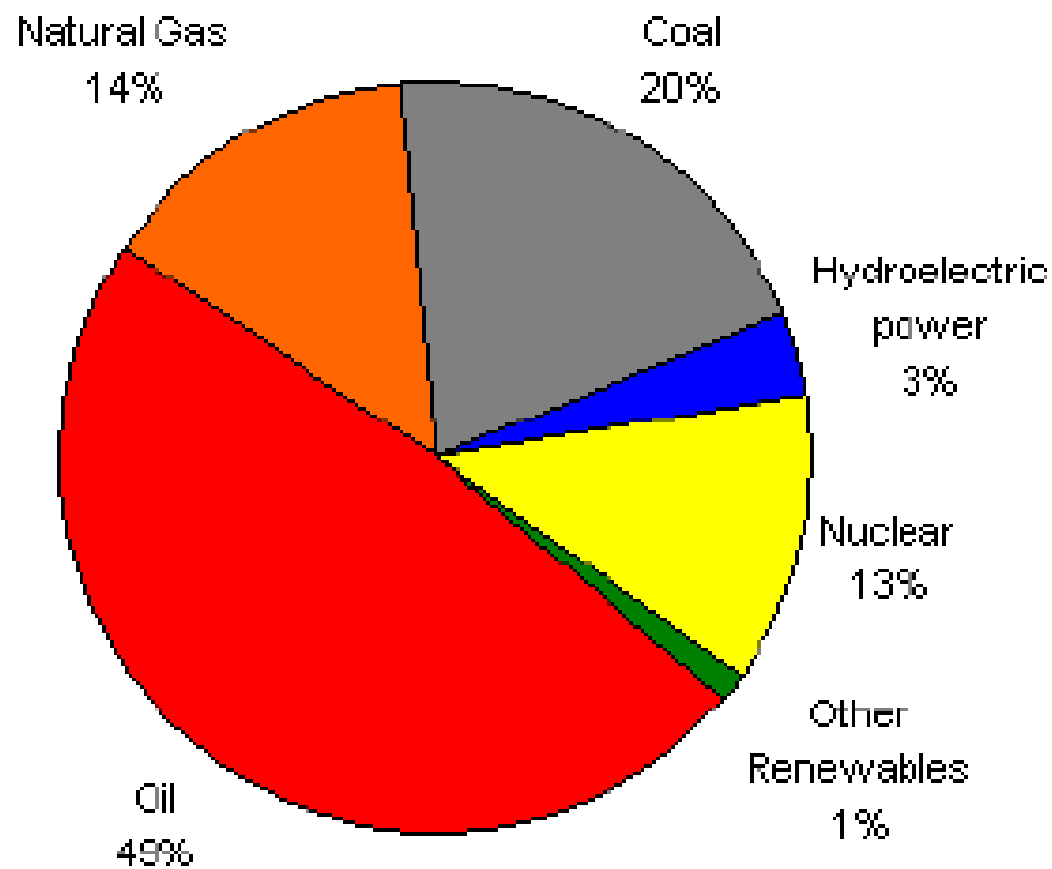
4. Cooperation on CO2 Emission

- China and EU can engage in low-carbon technology transfer and joint projects.
- EU can serve as a model for low-carbon public transport and life style.

III. Challenges Exist in Cooperation

- Different priorities (including energy and environmental problems)
- Different levels of development
- Different expectations

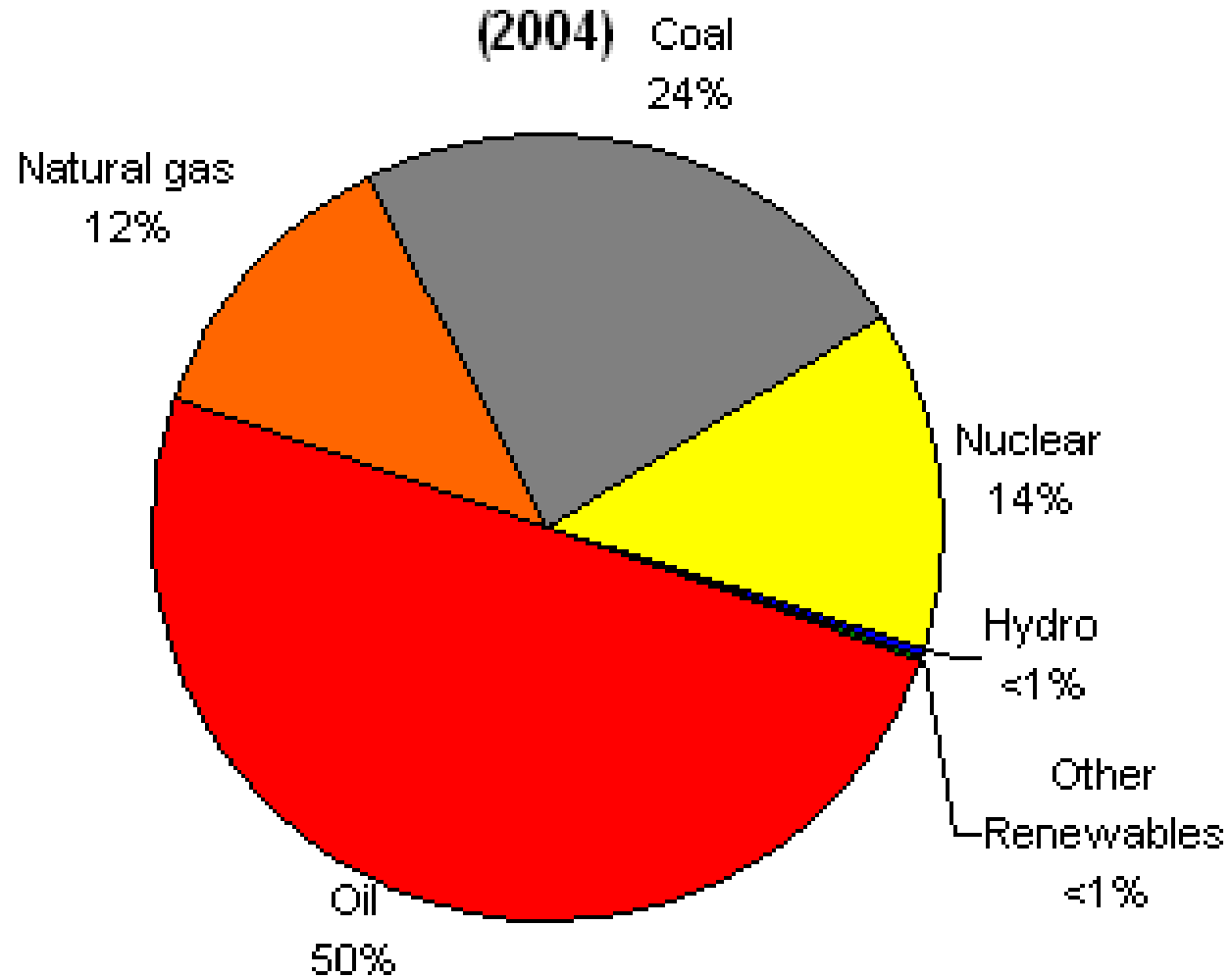
Total Energy Consumption in Japan, by Type (2005)



Source: EIA International Energy Annual 2005

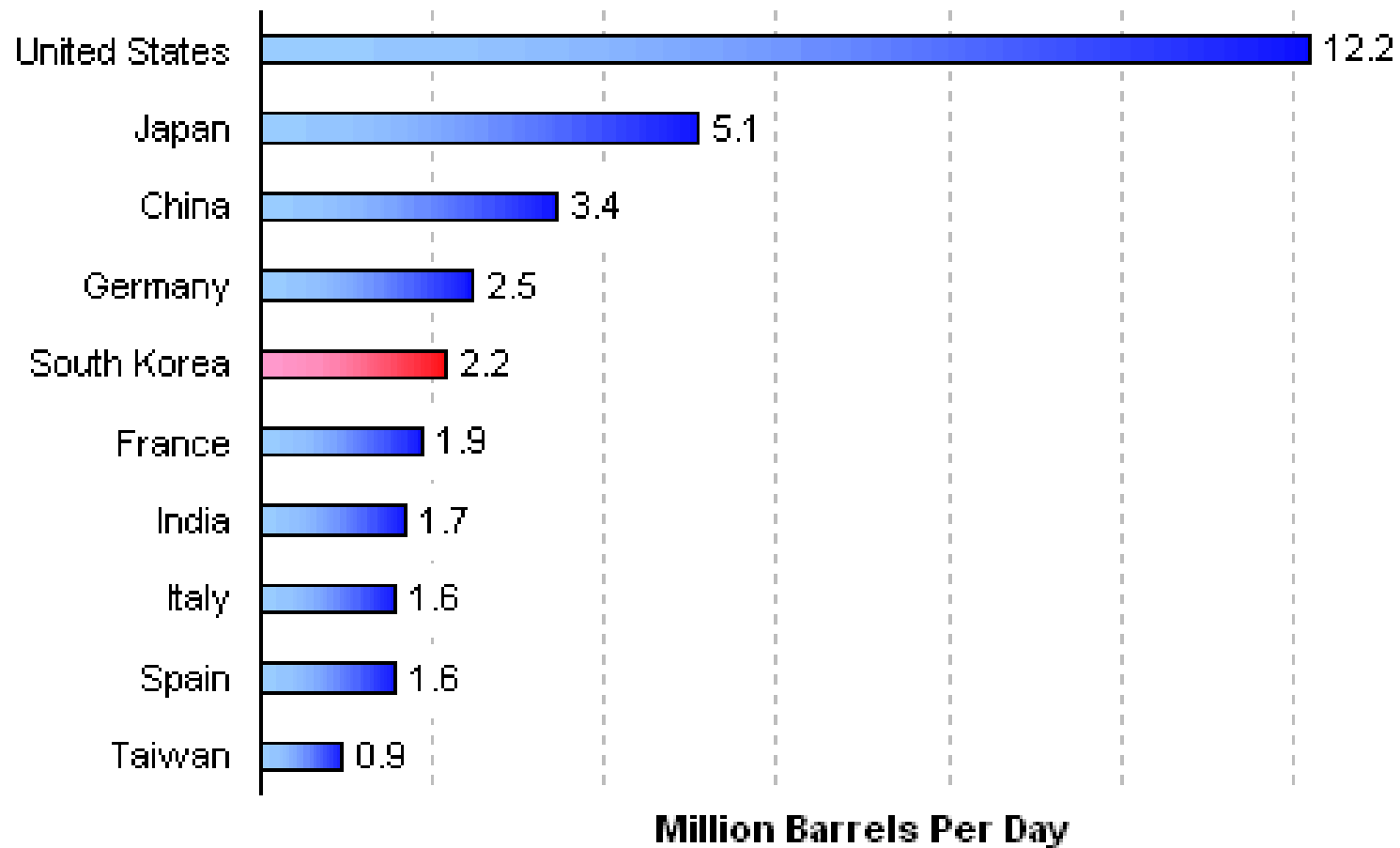
- Japan is still only 16 percent energy self-sufficient.
- Japanese companies have actively pursued upstream oil and natural gas projects overseas.
- Japan remains one of the major exporters of energy-sector capital equipment and provides engineering, construction, and project management services for energy projects.
- Japan has a strong energy research and development program supported by the government. The Japanese government actively pursues energy efficiency measures in an attempt to increase the country's energy security and reduce carbon dioxide emissions.

Total Energy Consumption in Korea, South, by Type (2004)



Source: EIA International Energy Annual 2004

Top Ten Net Oil Importers, 2006*



Source: EIA Short-Term Energy Outlook (May 2007)

*estimate