

Outlook for Northeast Asian Oil Market

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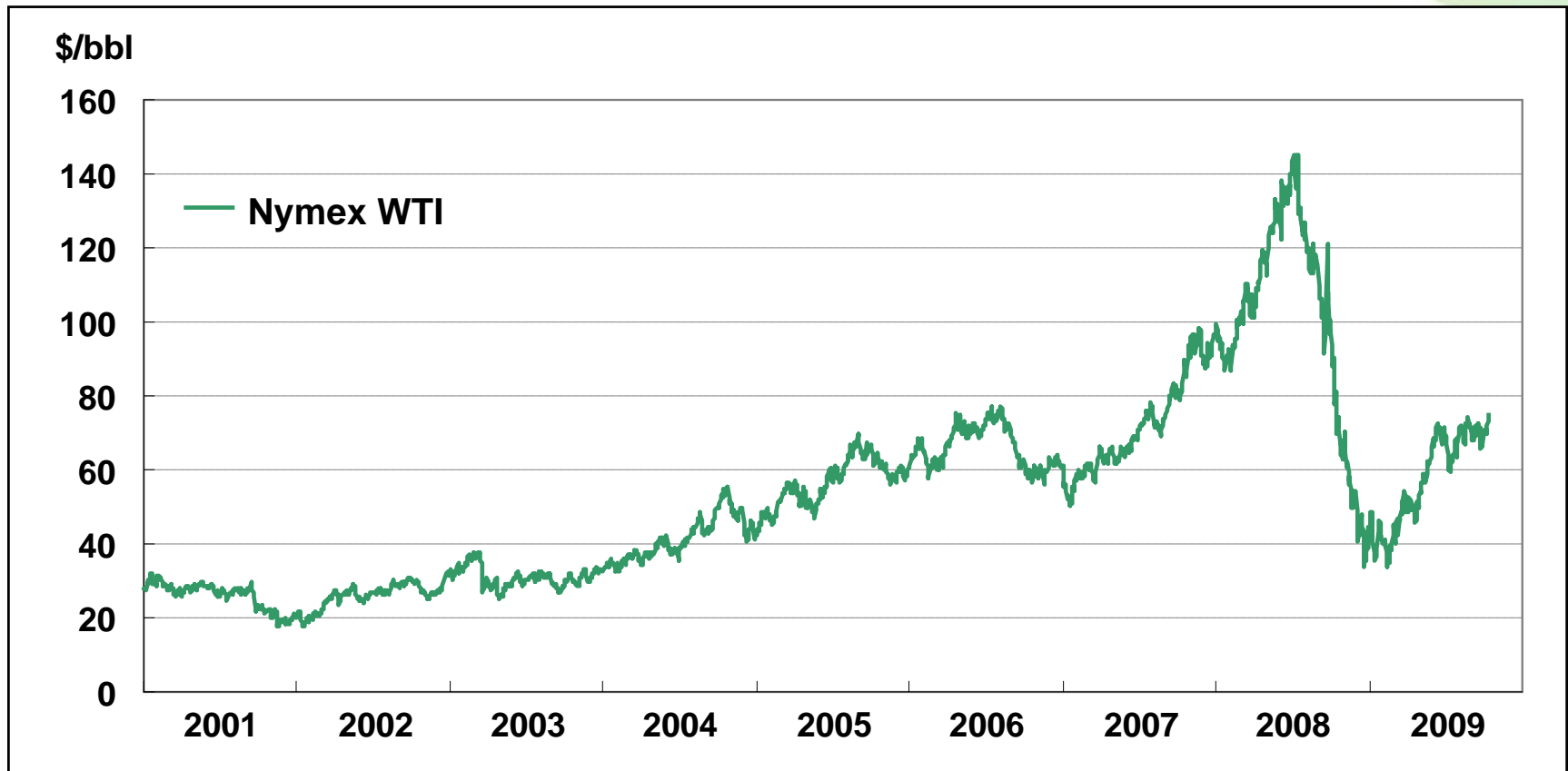
General Manager



- I. Overview of Global Oil Market**
- II. Global Energy Outlook**
- III. Outlook for Northeast Asian Oil Industry**
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I. Overview of Global Oil Market

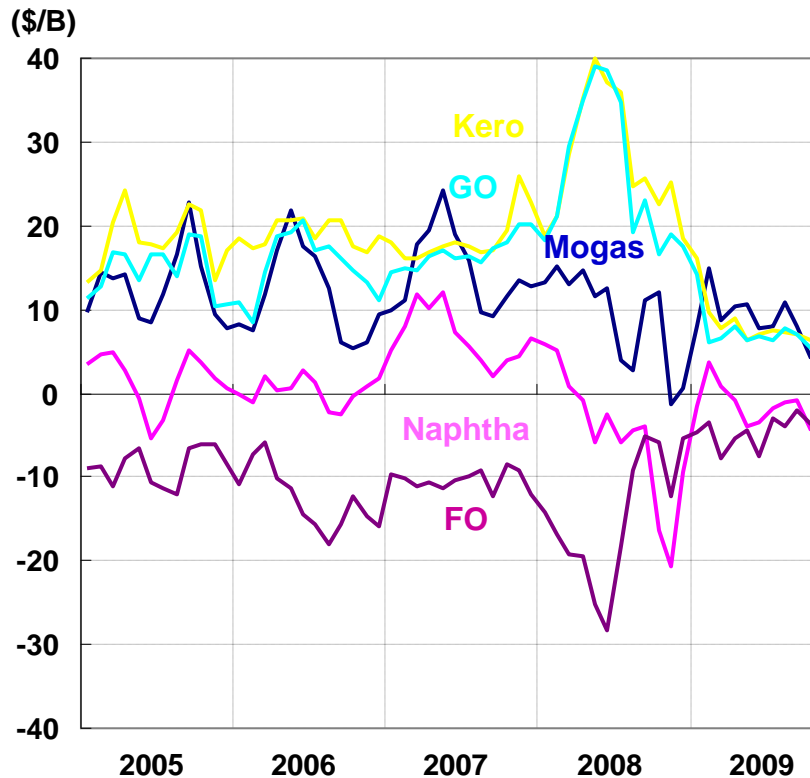
- Rising demand and constraints in supply resulted in \$140/B in 2008.
- After economic downturn led to price collapse, the oil price is balanced in \$60 ~ 80/B range.



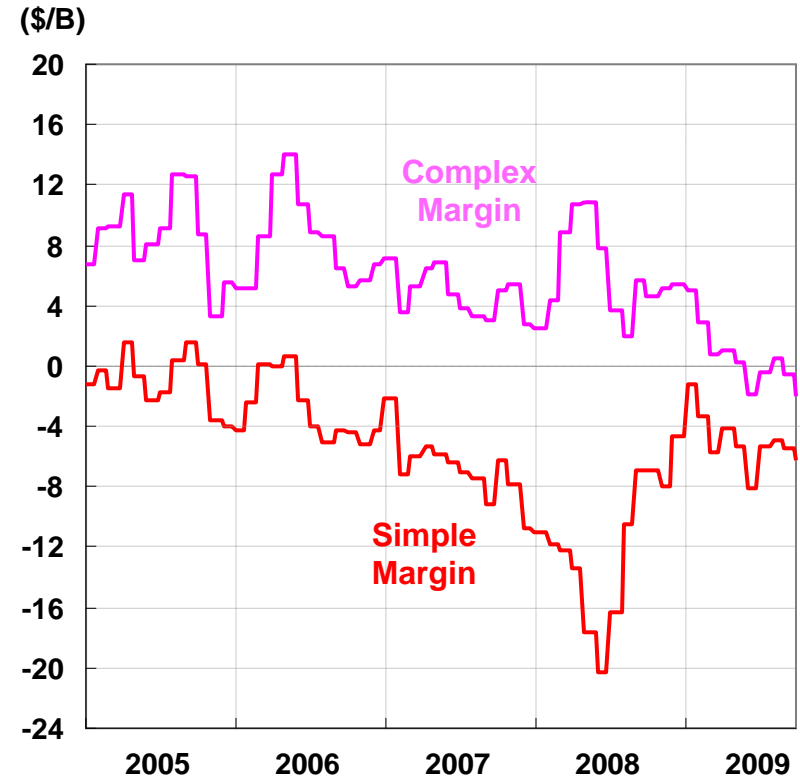
Product Crack Spreads and Refining Margin

- Economic downturn has hit product demand significantly.
- Reflecting the weak product market, refiners face the difficulties of lower margins/crack spreads.

Product Crack Spread



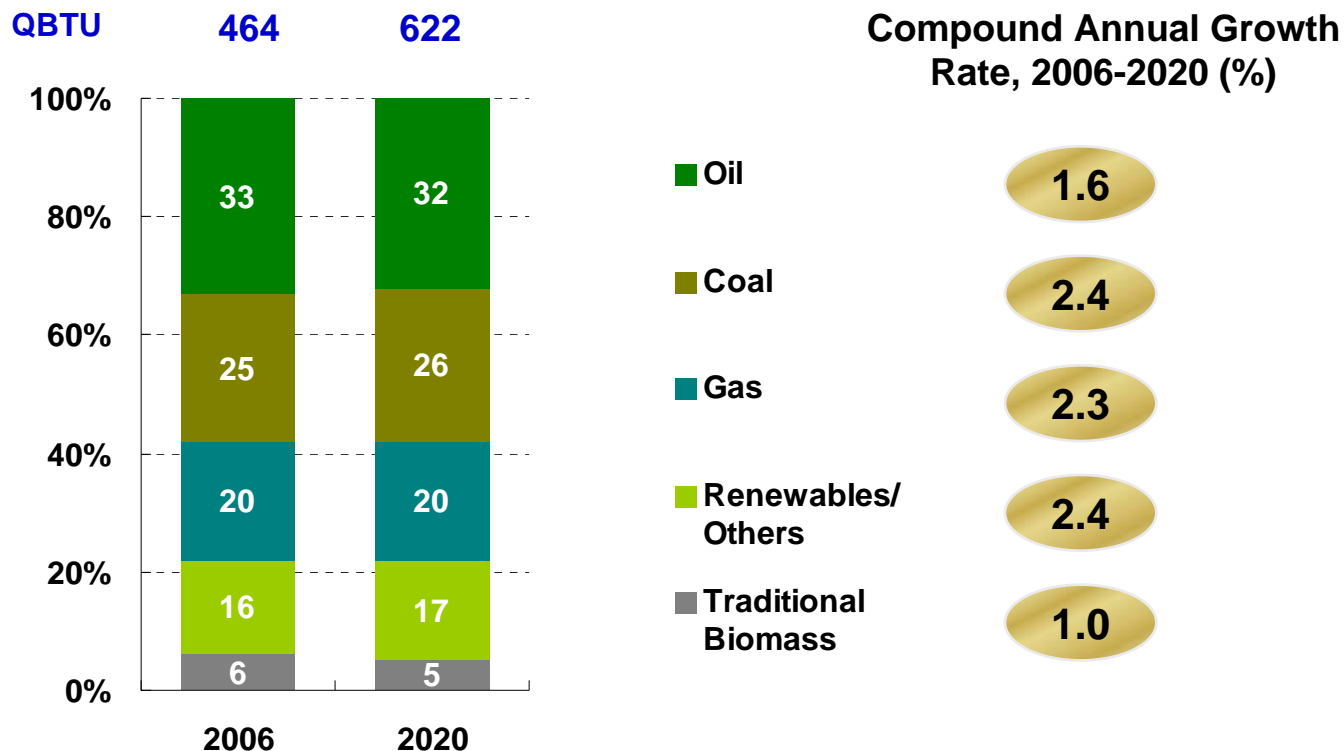
Refining Margin Trends



II. Global Energy Outlook

- While expected to register slowest growth, oil should remain the major source of energy beyond year 2020.

Projection of Global Energy Mix



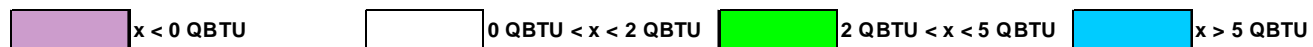
Global Energy Demand Growth by Sector and Region

- Developing countries will see strong demand growth across multiple sectors.

End-use Energy Demand Growth (2006 – 2020)

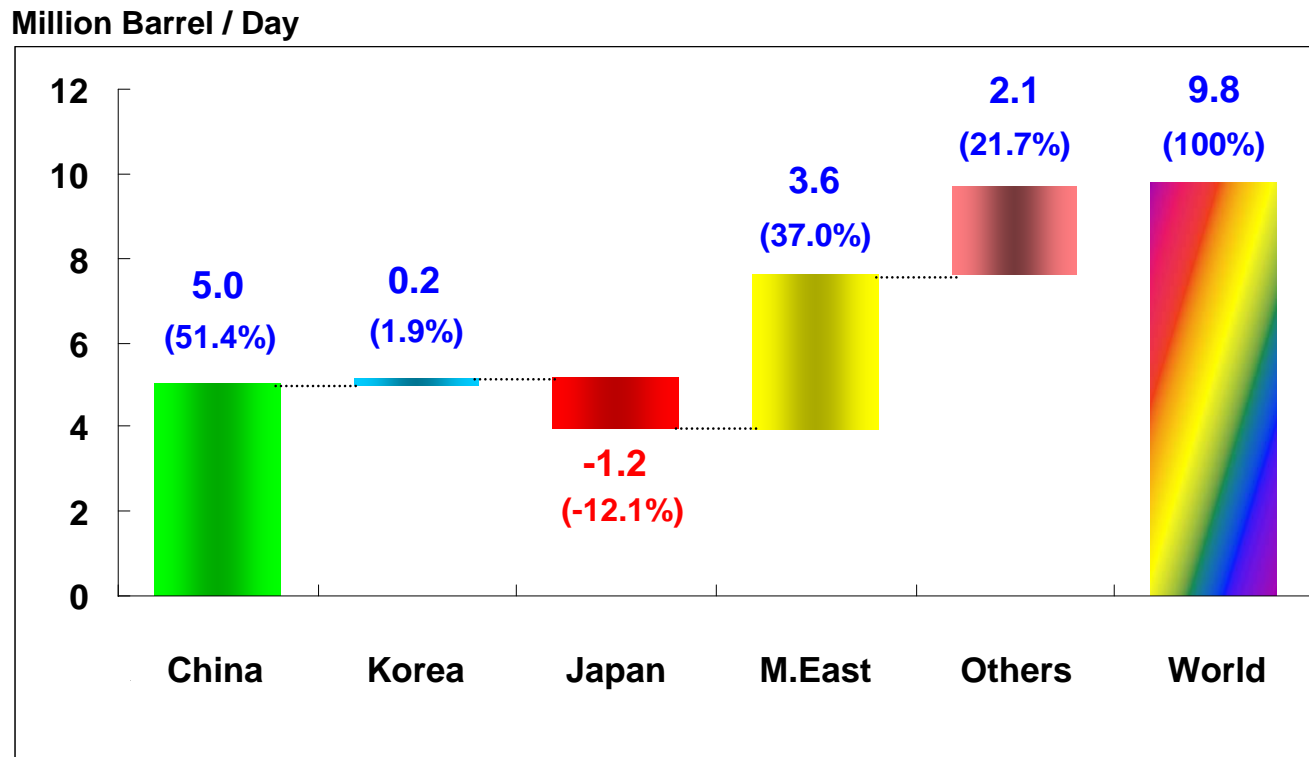
		Consumer			Industrial							
		Light-Duty Vehicles	Medium /Heavy Truck	Air Transport	Residential	Commercial	Steel	Petro-chemical	Pulp and Paper	Refining	Other Industrial	Total
Developing	Rest of World	5.5	3.3	2.2	14.9	3.3	3.6	4.1	0.6	0.1	20.7	58.3
	Russia	0.8	0.2	0.3	0.7	0.9	-0.1	0.9	0.4	0.1	-0.3	4.0
	India	2.3	1.0	0.0	3.2	1.4	3.7	1.3	0.1	0.4	1.1	14.5
	China	4.8	1.7	0.9	11.6	5.5	9.7	8.8	0.8	0.4	8.2	52.4
	Middle East	2.4	0.9	0.4	4.6	0.5	0.2	3.3	0.0	0.6	5.0	17.9
Developed	Japan	-0.5	-0.1	0.3	0.0	1.1	-0.5	0.0	-0.3	-0.1	0.5	0.4
	Northwest Europe	-0.5	0.4	0.9	1.7	0.8	-0.1	1.0	0.2	-0.5	1.4	5.2
	United States	-1.8	0.6	0.7	1.5	1.7	0.1	1.4	-0.8	-0.5	2.9	5.7
	Total	11.8	8.2	5.6	38.1	15.3	16.7	20.8	1.0	0.5	39.5	158.5

80 QBTU
79 QBTU



- In the next decade, China and Middle East will be the key drivers of global energy demand growth.

Global Oil Demand Growth (2008-2020)

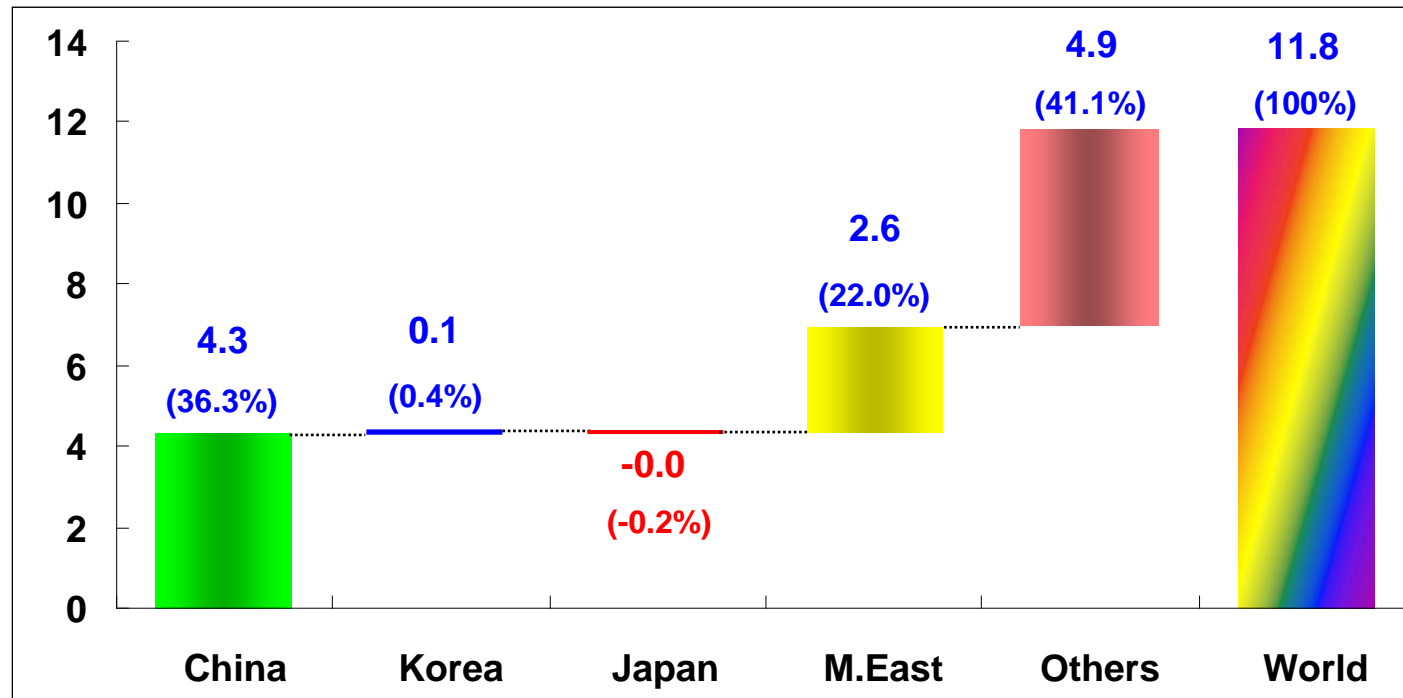


Global Refining Capacity Additions by Region

- Refining capacity additions will also be driven by China and Middle East.

Global Refining Capacity Additions (2008-2015)

Million Barrel / Day

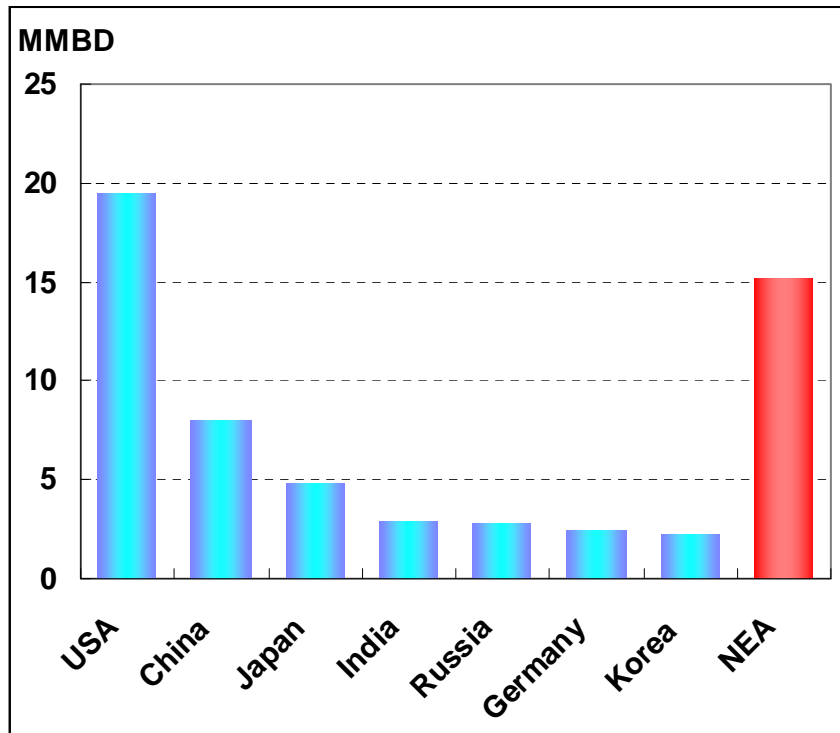


III. Outlook for Northeast Asian Oil Industry

Position of Northeast Asia in the Oil Industry

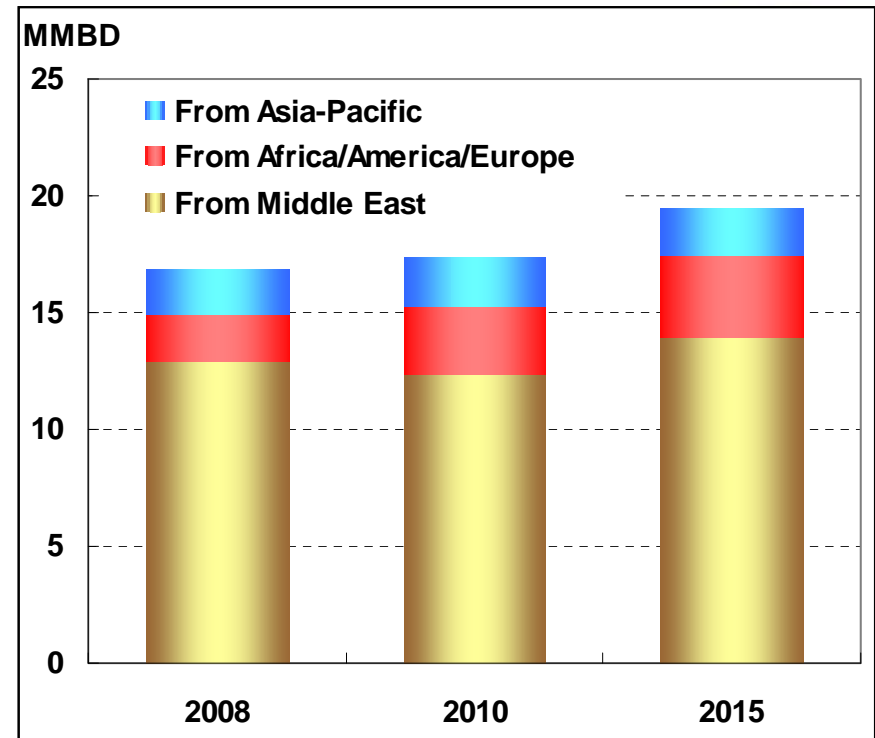
- Northeast Asian countries are highly ranked oil consumers.
- High dependence on Middle East supply sources will continue.

Oil Consumption by Nation



Source : BP Statistical Review 2009

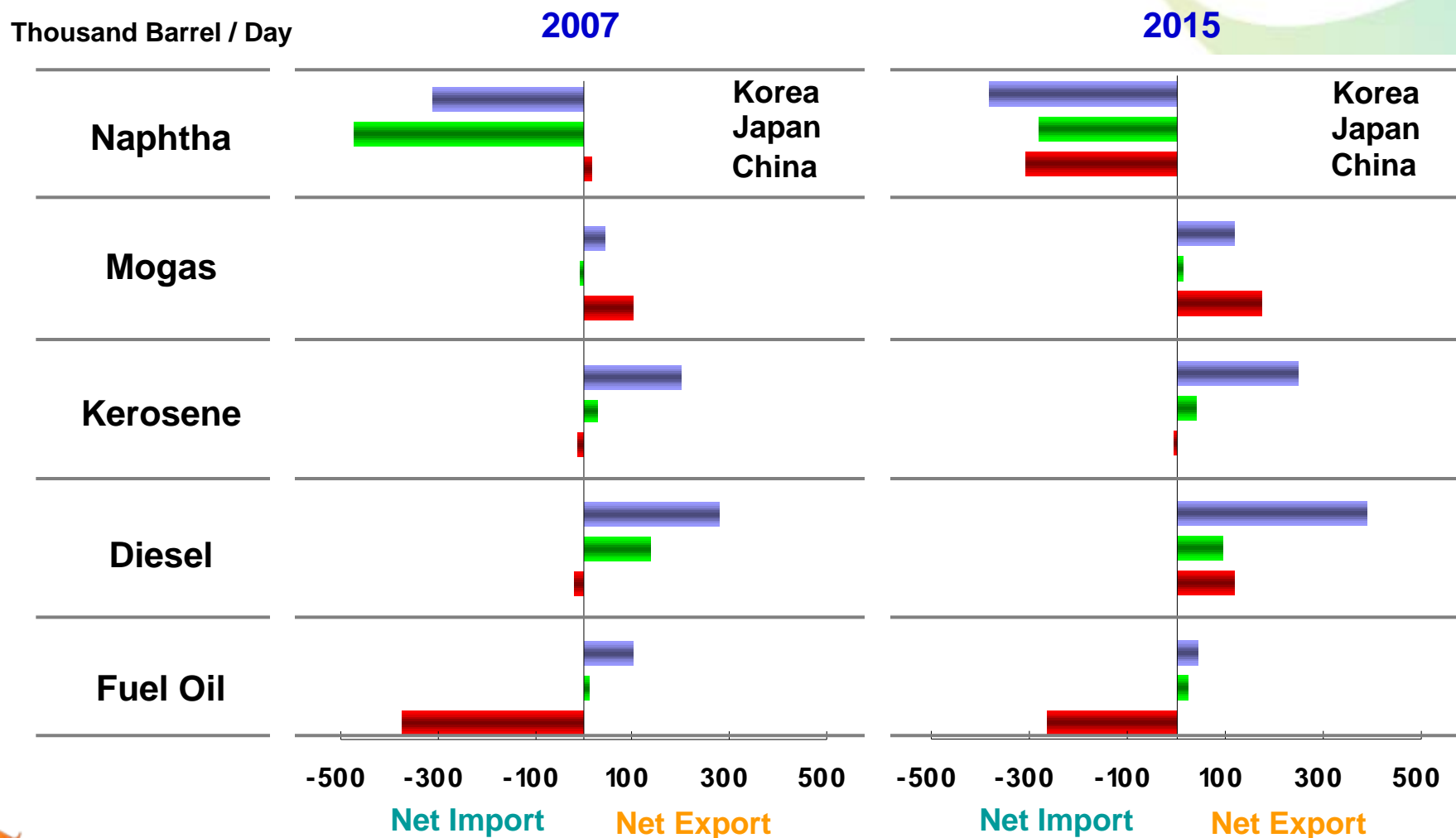
Asia-Pacific Crude Import



Source : FACTS Databook 2009

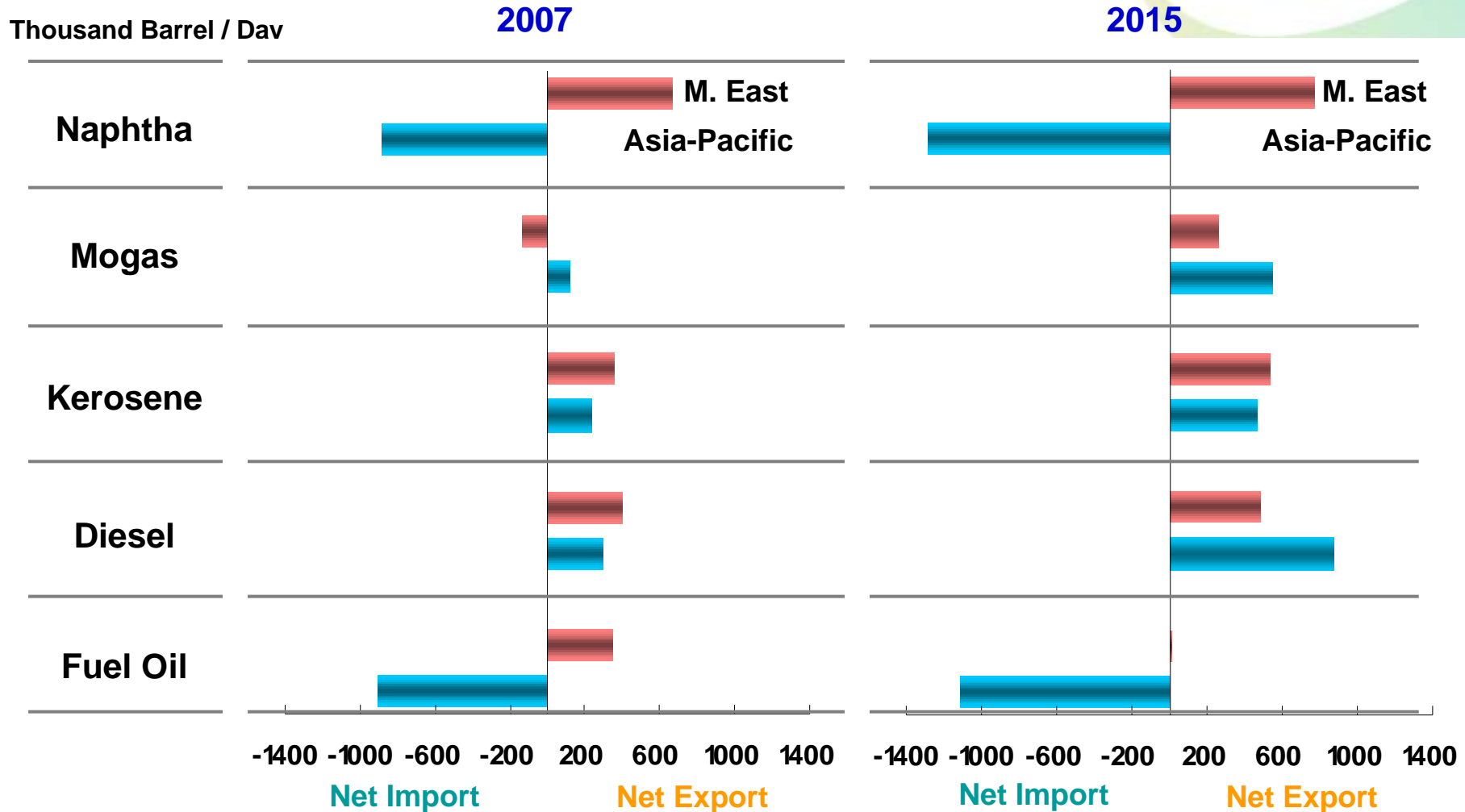
Supply & Demand Balance of Northeast Asia Countries

- The three main Northeast Asian countries must export more clean products.



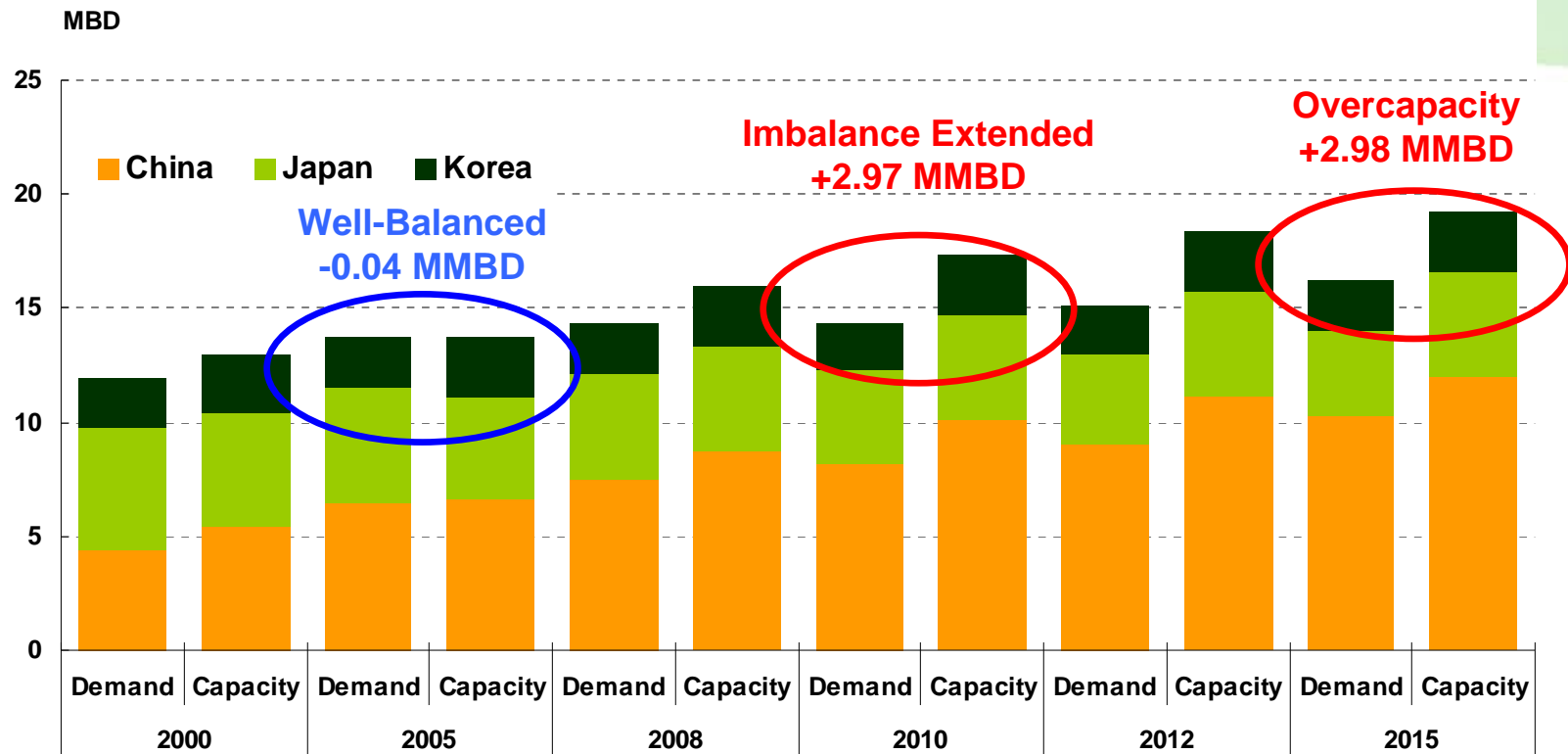
Supply & Demand Balance of Asia Pacific & Middle East

- Asia Pacific and Middle East face oversupply of mogas and middle distillates.



Northeast Asia Oil Demand and Refining Capacity

- Surplus refining capacity in Northeast Asia may reach 3.0 mil. barrels per day based on current project plans.

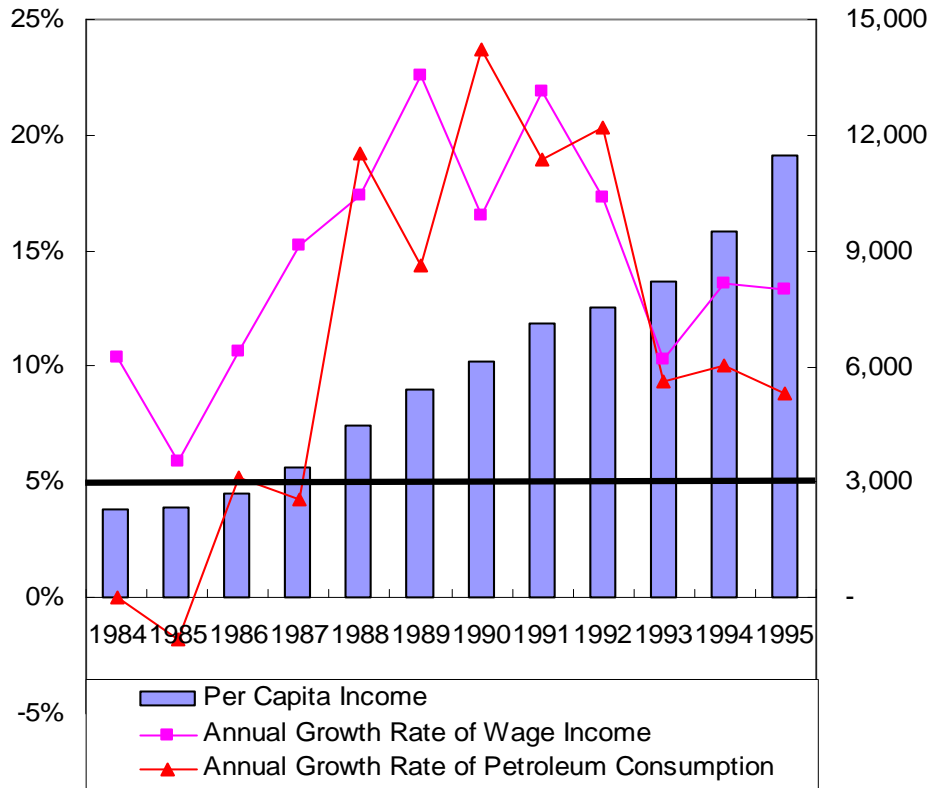


Chinese Oil Demand May Keep Rise ?

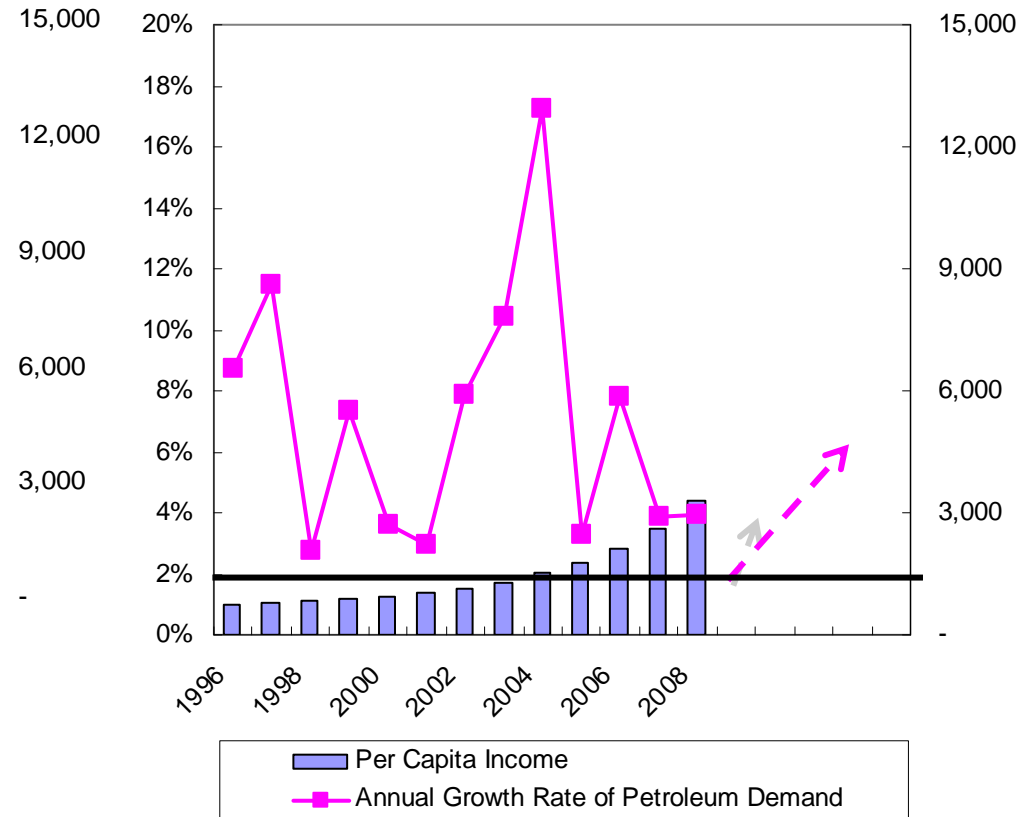
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- Chinese oil demand should grow at a rapid pace driven by its potential per capita income growth.

Korea (1984 ~ 1995)

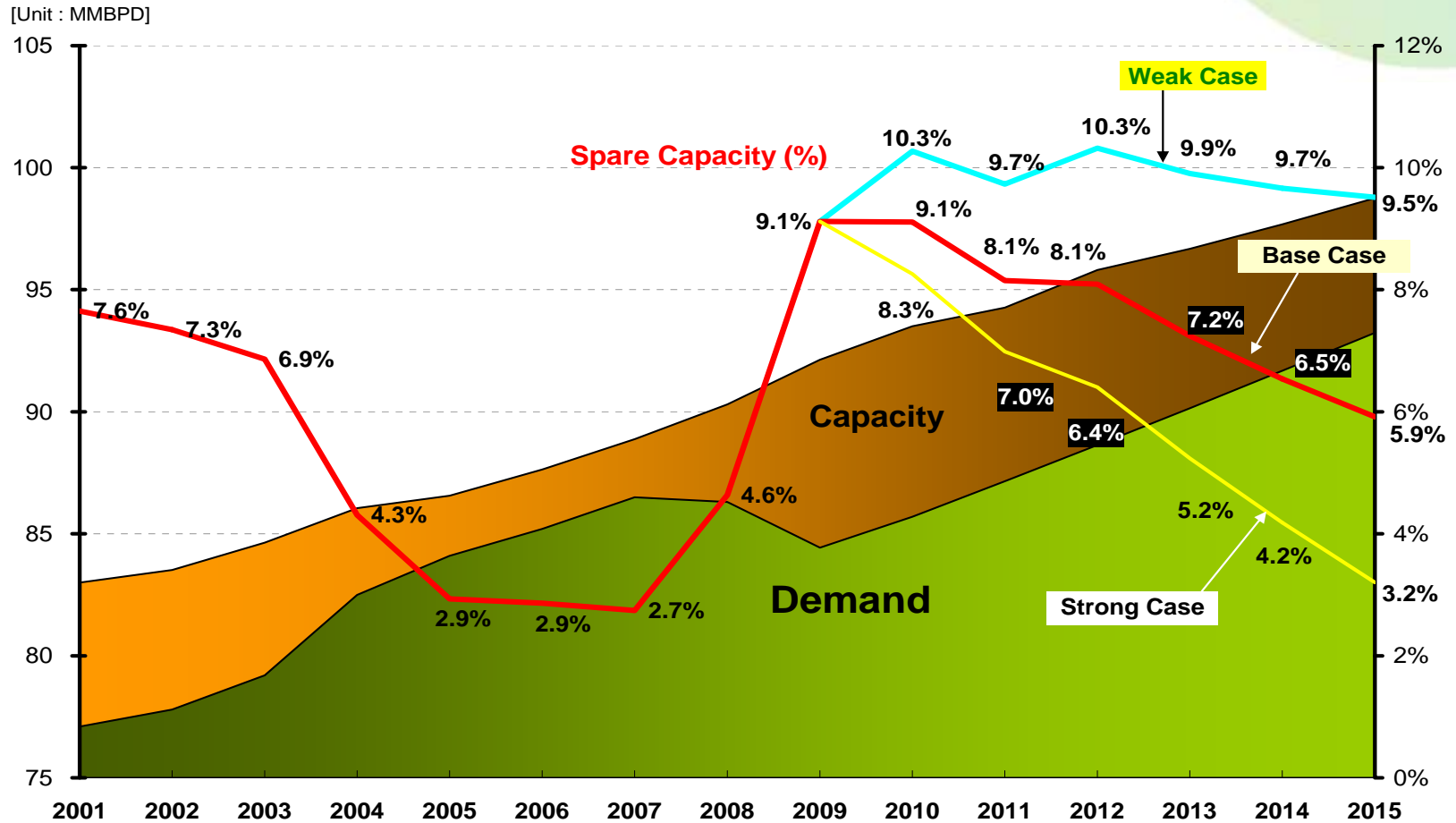


China (1996 ~)



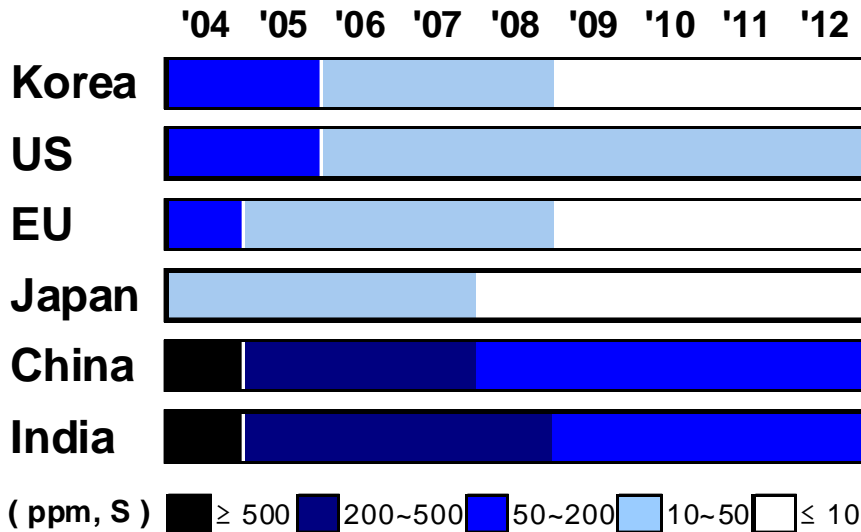
Global Demand & Refining Spare Capacity

- Global surplus of spare refining capacity will gradually decrease.
- Refining margin recovery is projected from 2011 in base case scenario.

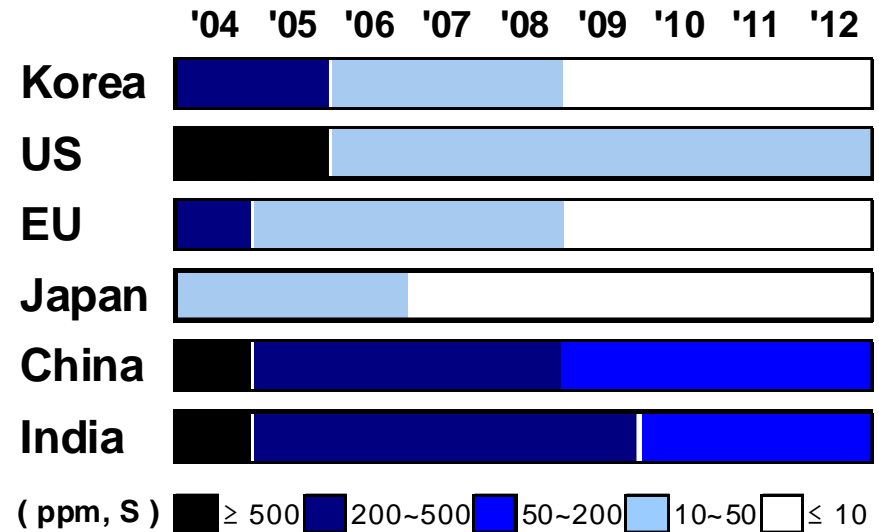


- Stringent transportation fuel specifications restrict outlets for products with high sulfur content.

< Gasoline >



< Diesel >



IV. Conclusion

Issues in the Northeast Asian Oil Industry

Economic Downturn

- Prolonged Weak Refining Margin
- Impact on Investment Decisions
- Demand & Supply Imbalances
- Need Improved Efficiency

Security in Oil Supply

- High Dependence on the Middle East
- Limited Availability in Renewable Energy

Environmental Issues

- Need Technical Breakthrough in Renewable Energy
- Reinforced Environmental Regulations

- **Oil will remain as the major source of energy beyond 2020.**
- **The position of Northeast Asian region in the global energy industry will grow and assume more importance.**
- **Well modulated decisions on the timing and size of refining capacity additions are crucial for the oil industry to secure a stable oil market.**
- **Enhanced cooperation will support the growth of the Northeast Asian oil industry.**

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Thank You

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