

# **Balancing the Environment and Economic Objectives of Energy Policy**

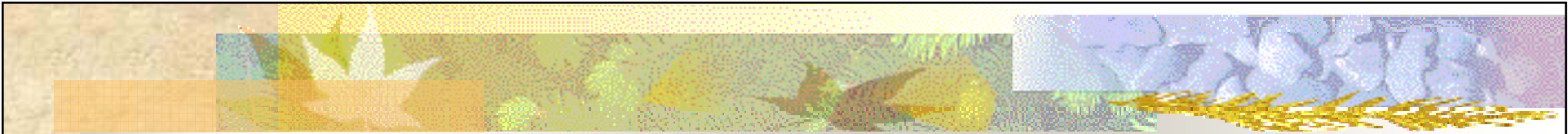
**Panellist View**

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*Institute of Research and Innovation*

**The 14<sup>th</sup> General Meeting of Pacific Economic Cooperation Council  
(Hong Kong)**

**28-30 November 2001**

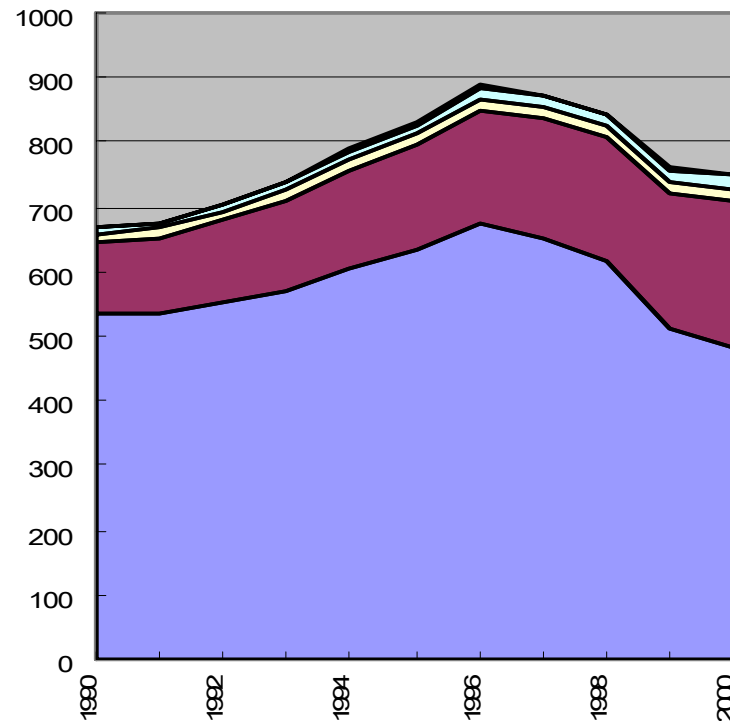


## Key Issues

- Cleaner Fuels for Growing Energy Demand
  - China: Lower Coal Use & Energy Intensity
  - Gas & Power Transport Infrastructure
- Tools to Ensure Environmental Goals
  - Realism of Kyoto Mechanisms
  - Regional Emission Trade Mechanisms

# Low Coal and Energy Demand in China!

MTOE



■ Nuclear

■ Hydro

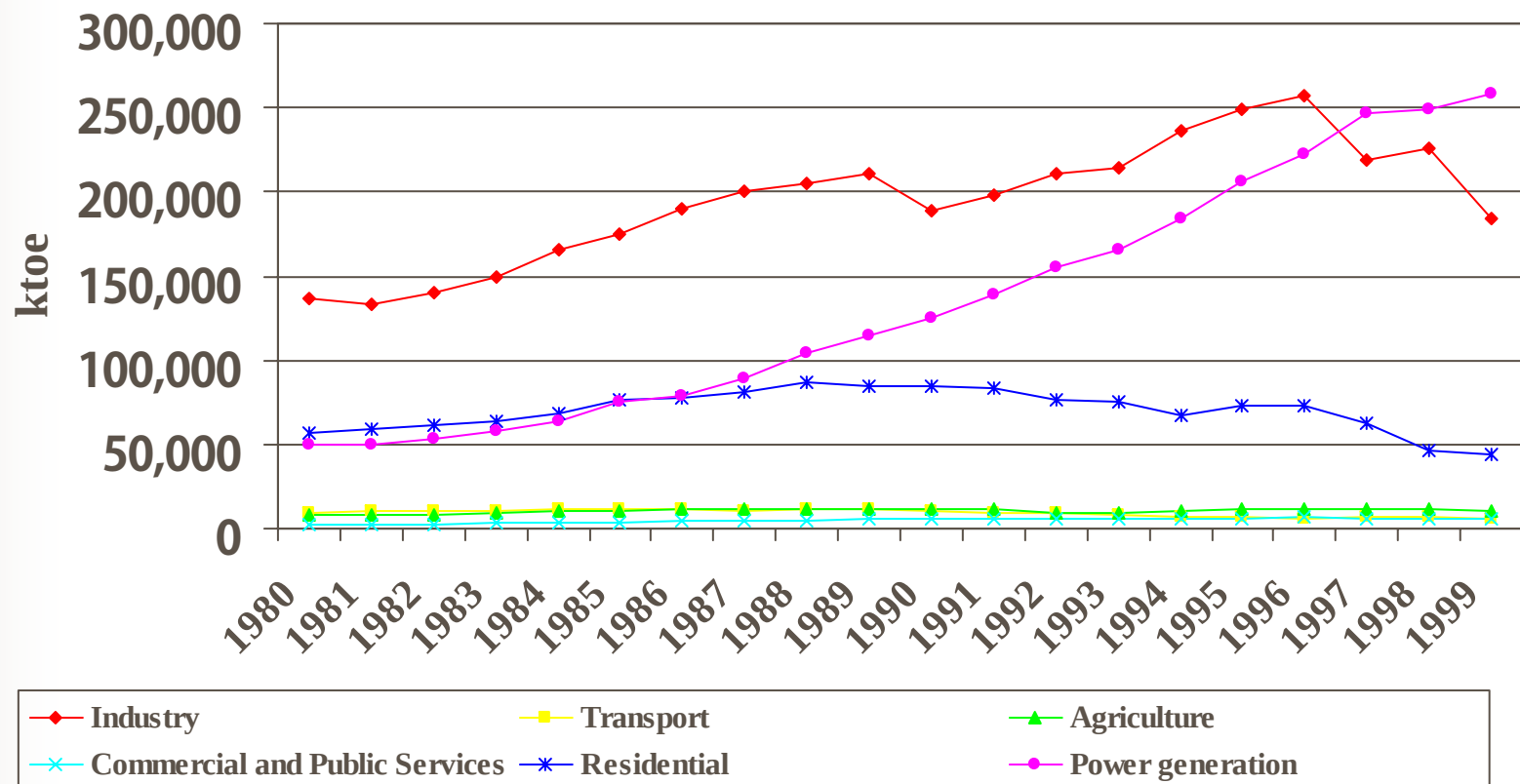
■ Gas

■ Oil

■ Coal

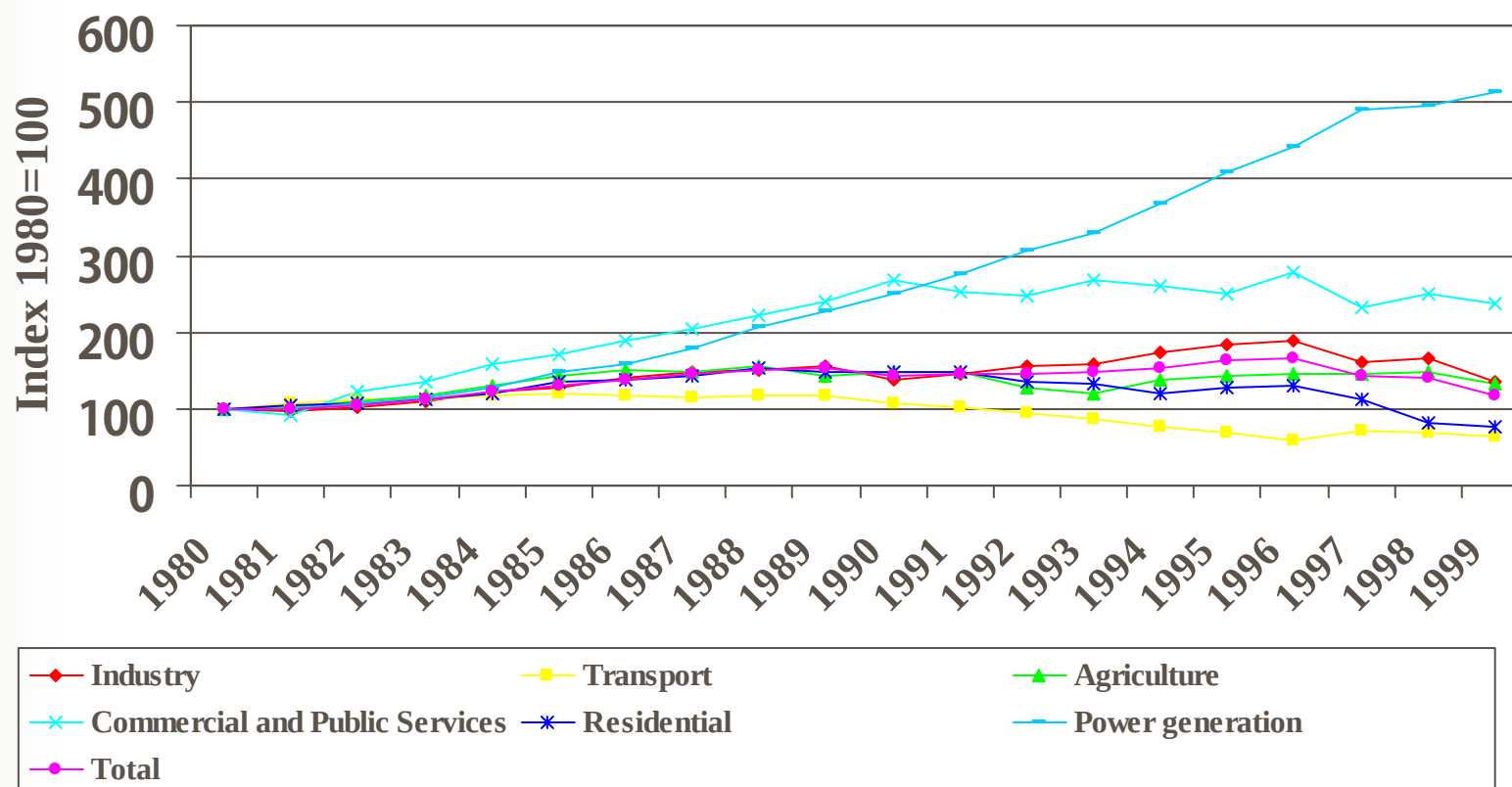
Source: BP 2001

# Non-Power Coal Use Declines in China!



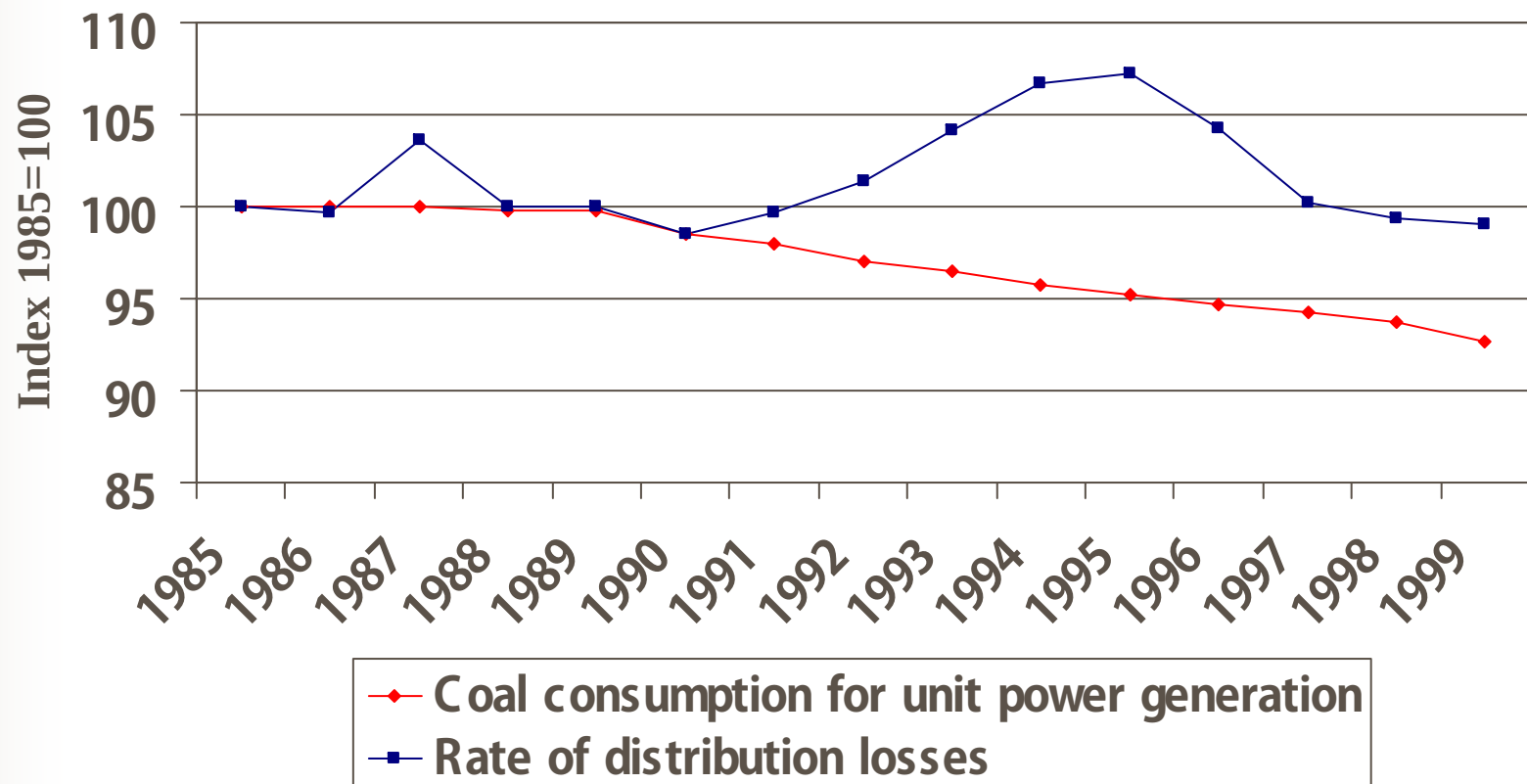
Source: IEA Energy Balances

# Non-Power Coal Use Declines in China!



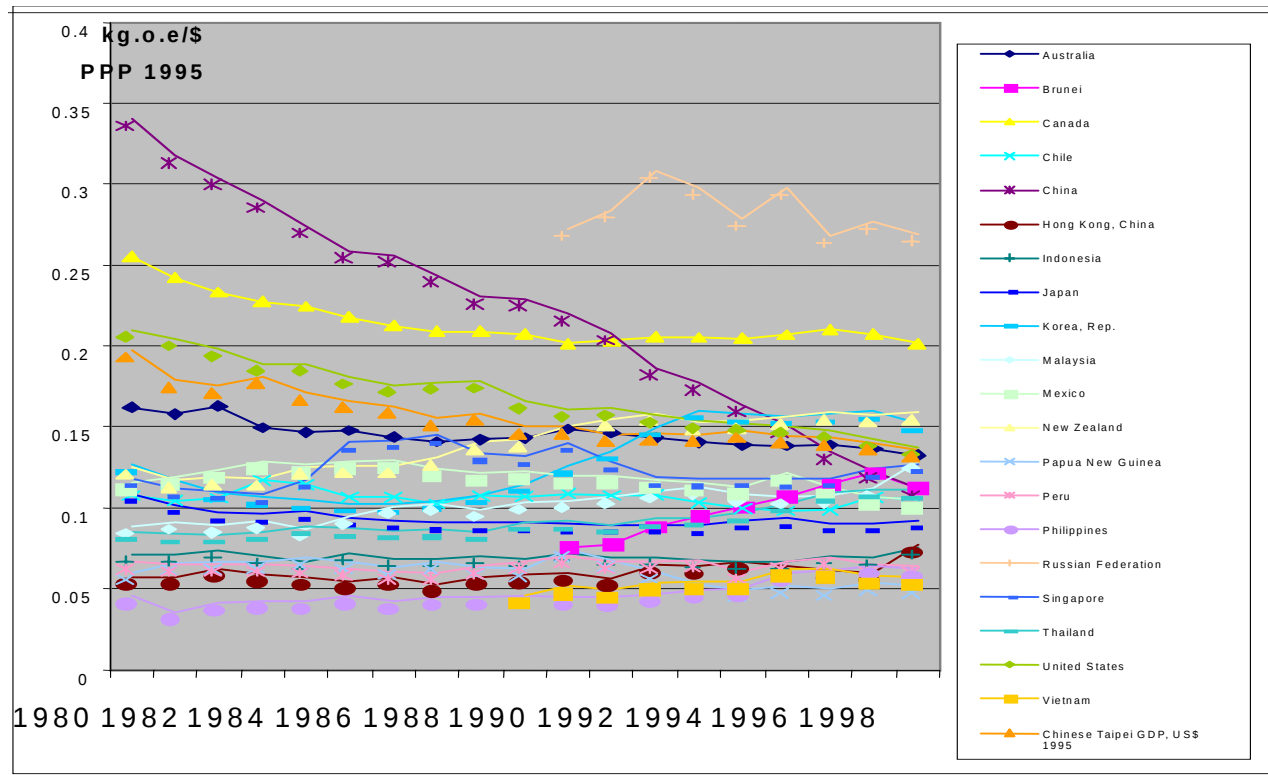
Source: IEA balances

# Energy Efficiency in Power Generation in China



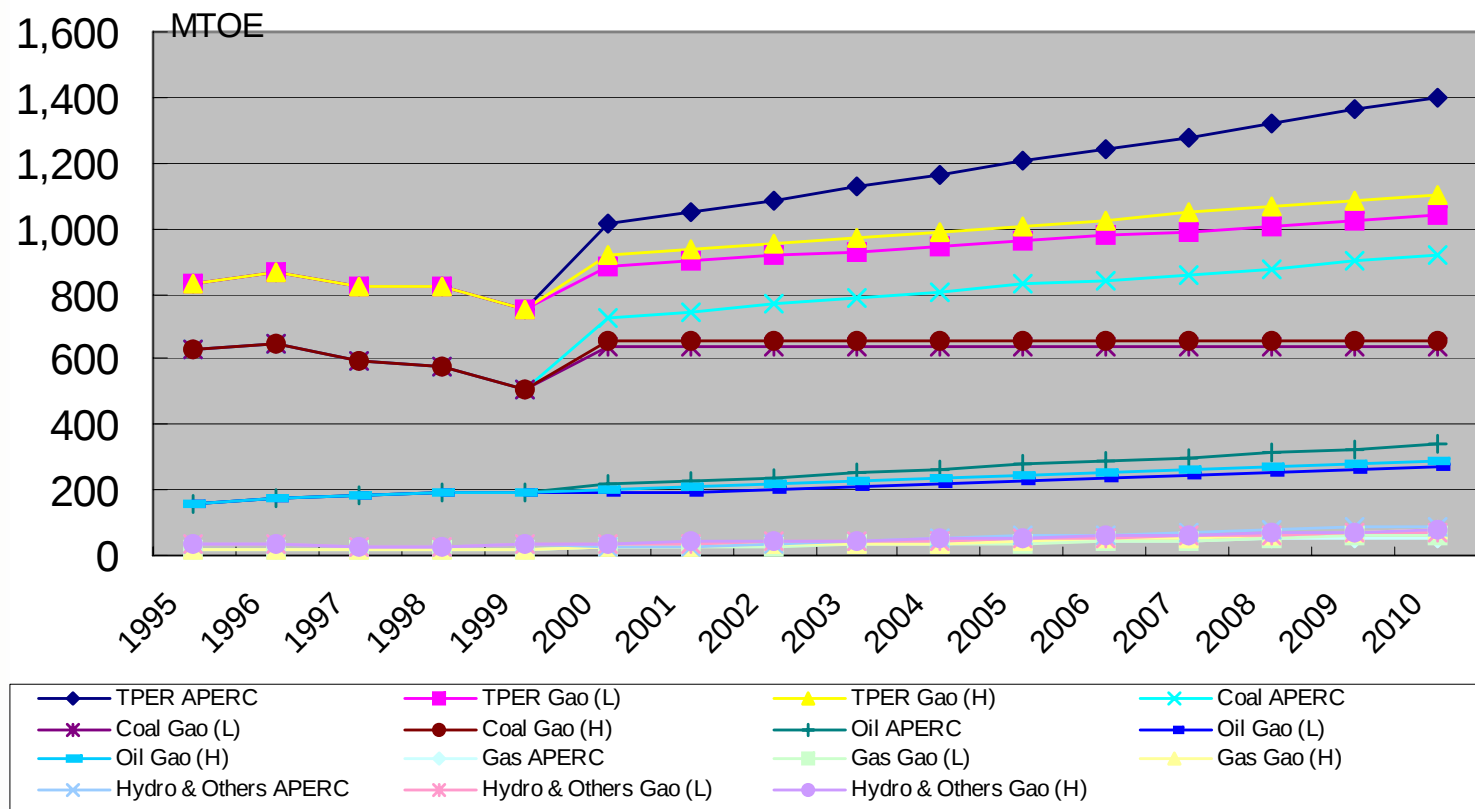
Source: State Power Corporation of China

# Improved Energy Efficiency Also Helps Chinese Demand Decline.

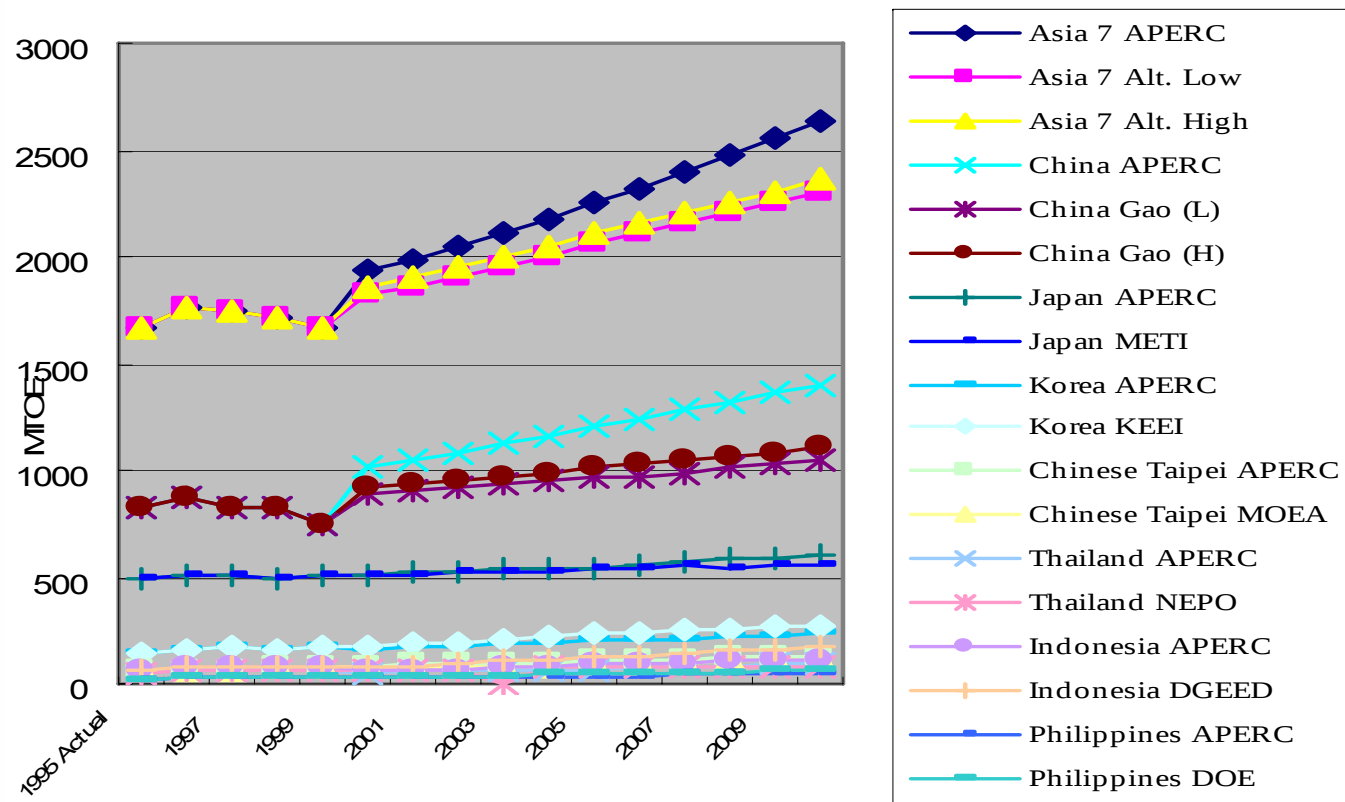


Source: APERC, 2001

# China's Energy Demand Will Increase at a Lower Pace.

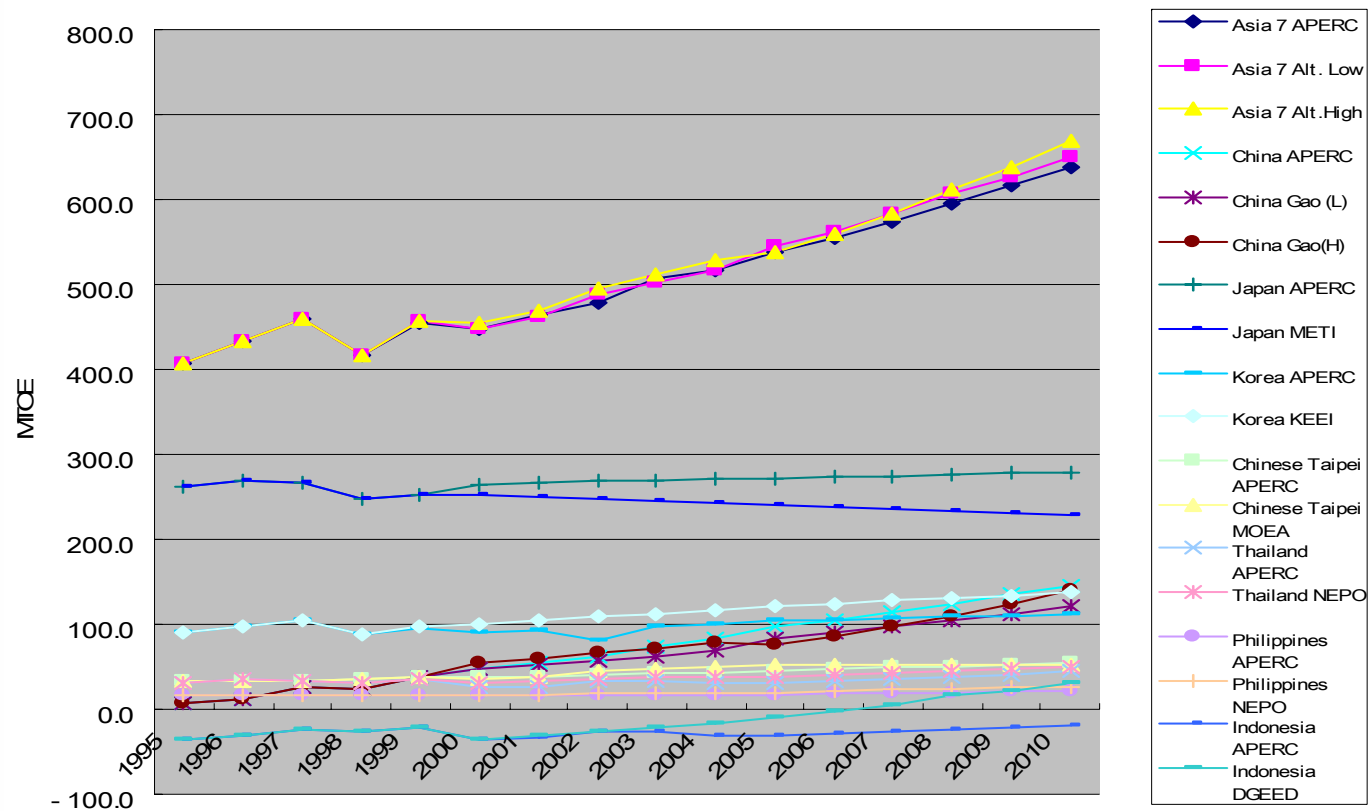


## 7 Asian Economies' Combined Energy Demand Will Still Grow.



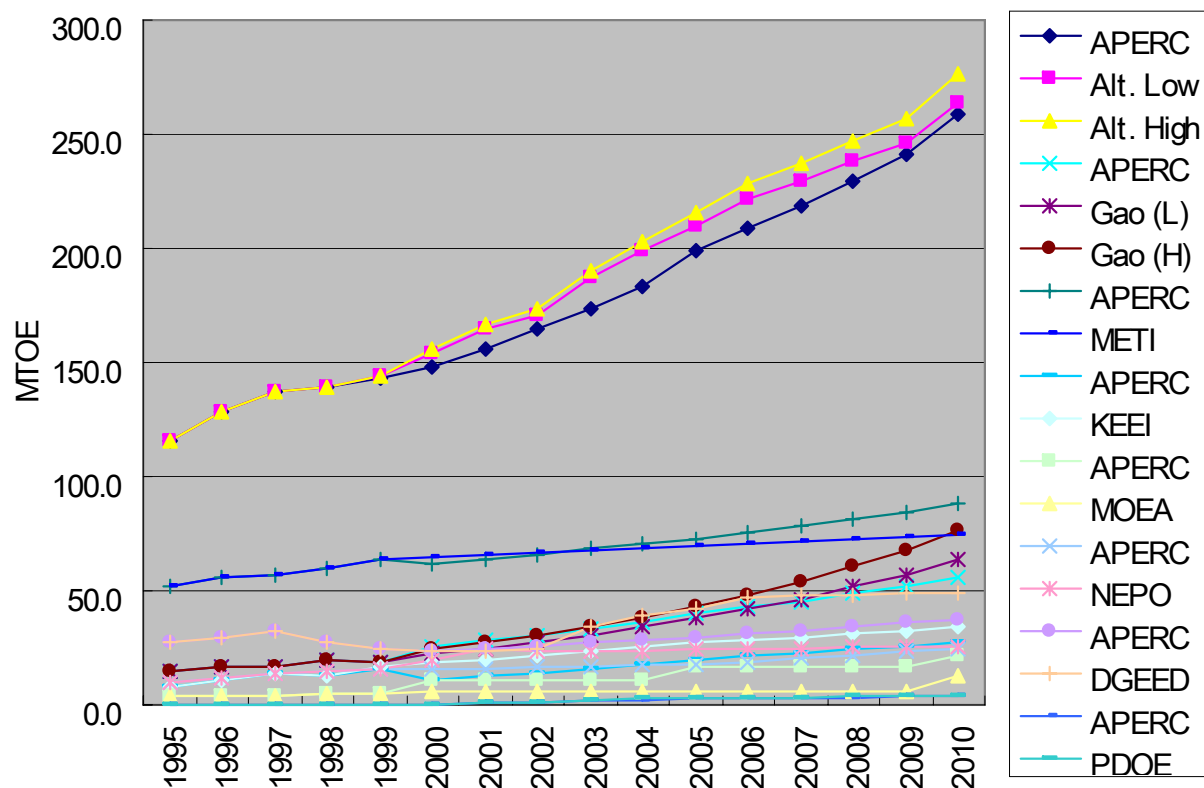
Source: APERC, GAO, S, KEEI, METI (Japan), NEPO (Thailand), MOEA (Chinese Taipei), PDOE, DGEED (Indonesia)

# APEC Net Oil Imports Prospects Remain Similar.

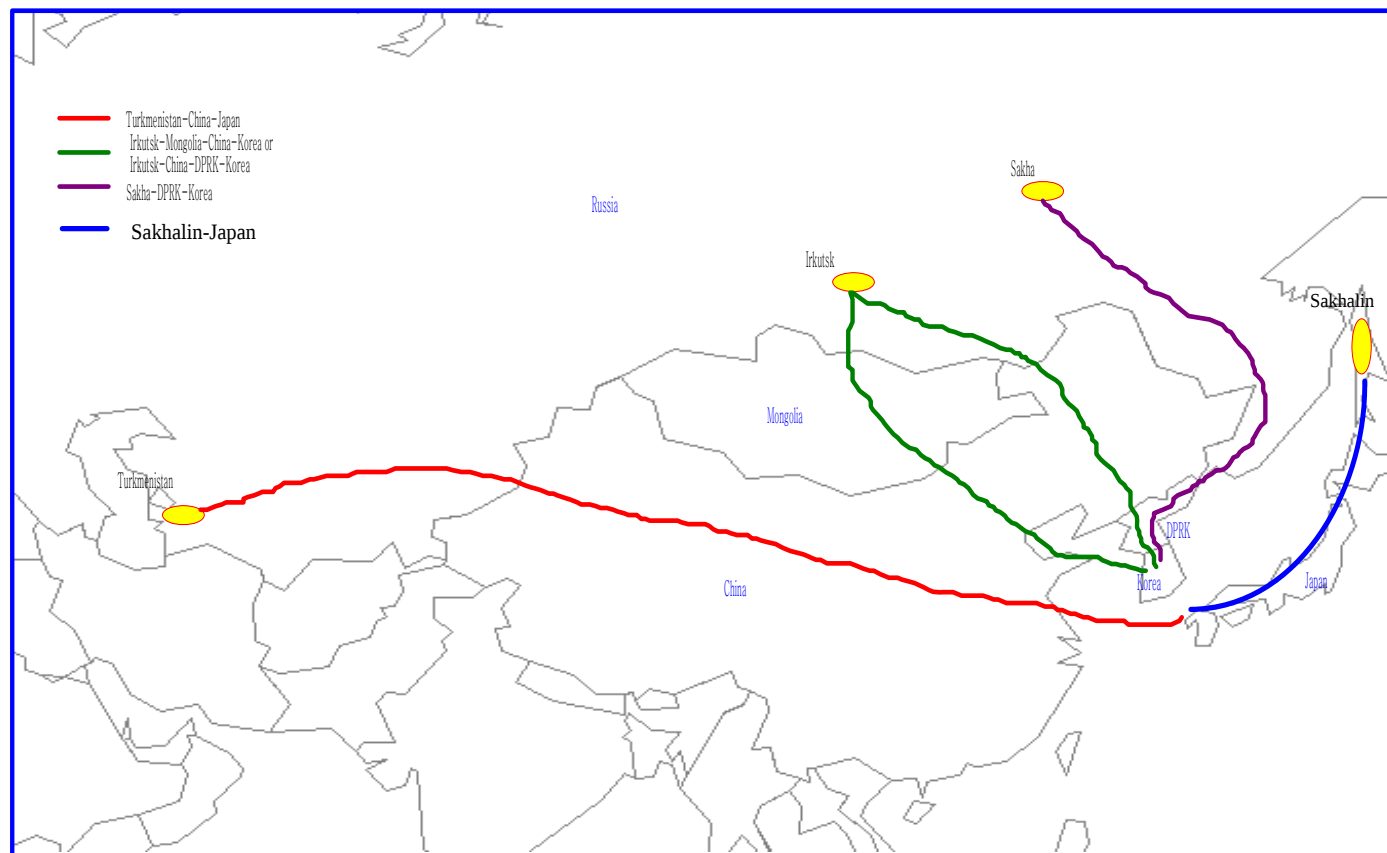


Source: APERC, GAO, S, KEEI, METI (Japan), NEPO (Thailand), MOEA (Chinese Taipei), PDOE, DGEED (Indonesia)

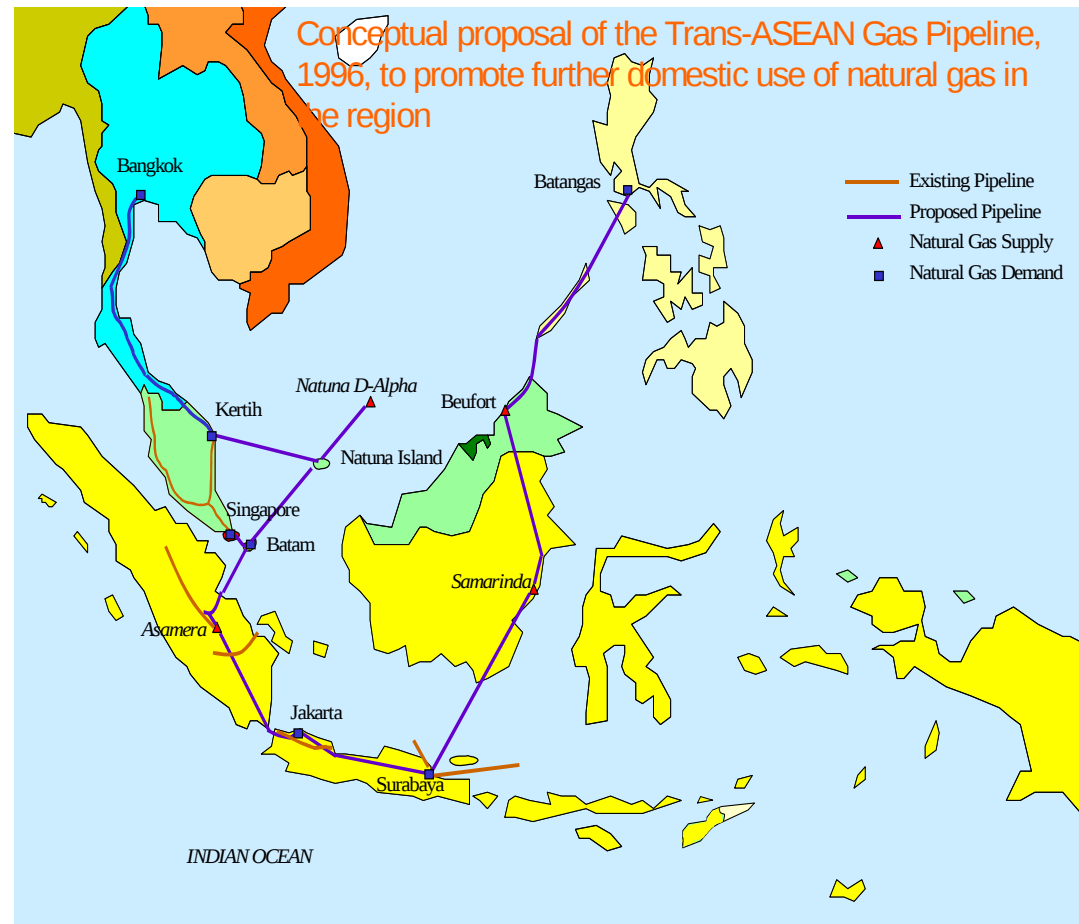
## Greater Natural Gas Demand Is Projected from a Sustainable Development Path.



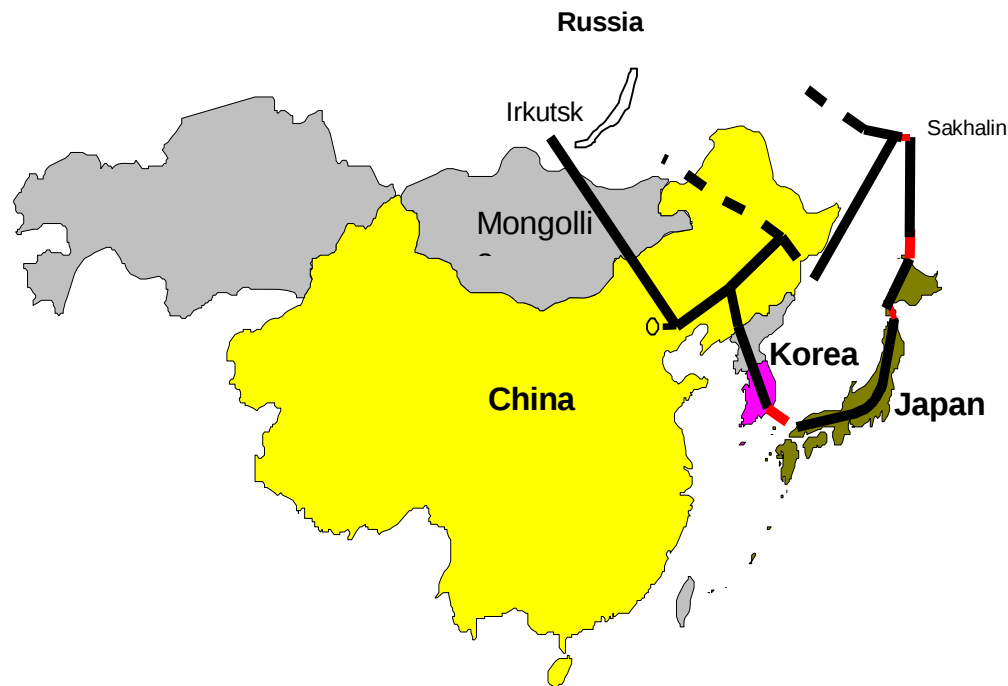
# Natural Gas Pipeline Networks Already Proposed for Northeast Asia



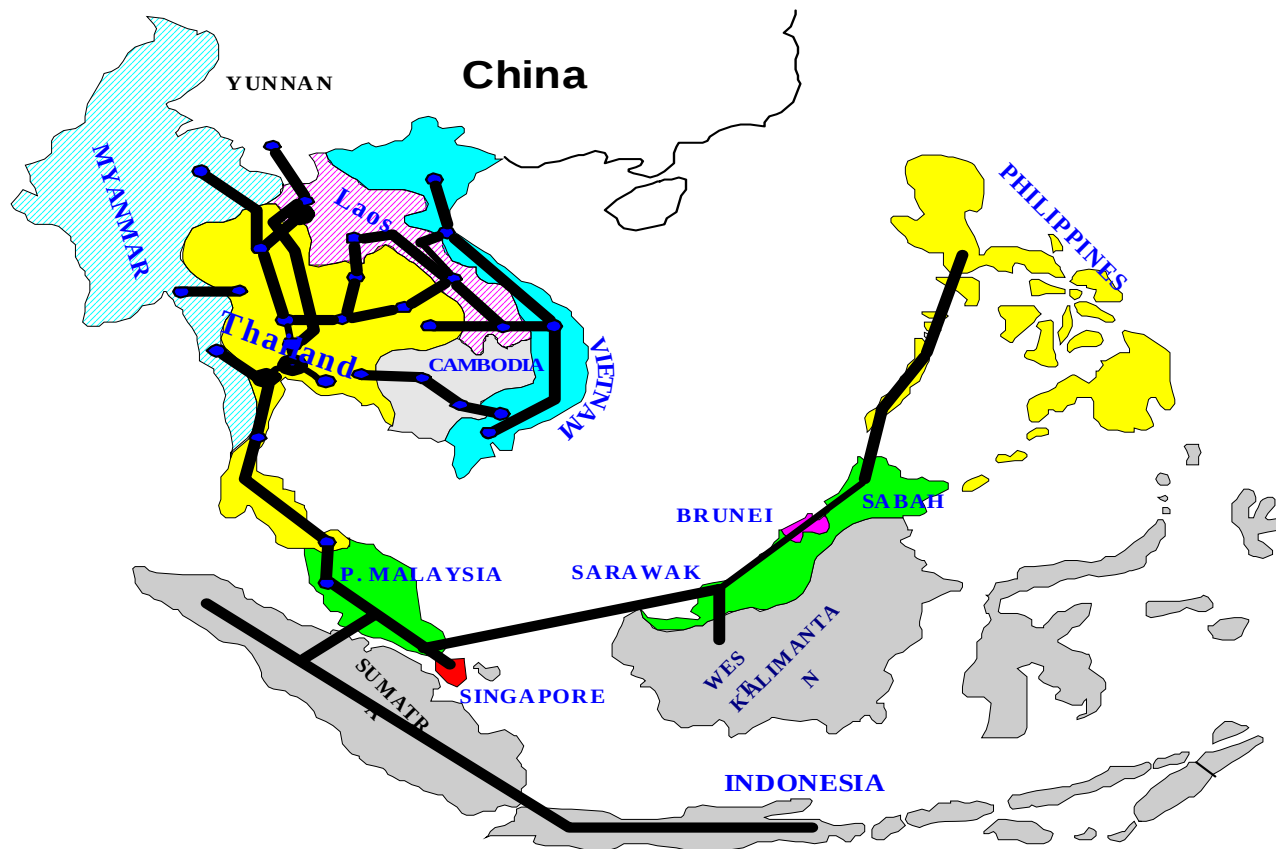
# Similar Projects Studied in ASEAN



# Similar Projects for Grid Connection Studied for Northeast Asia and ..

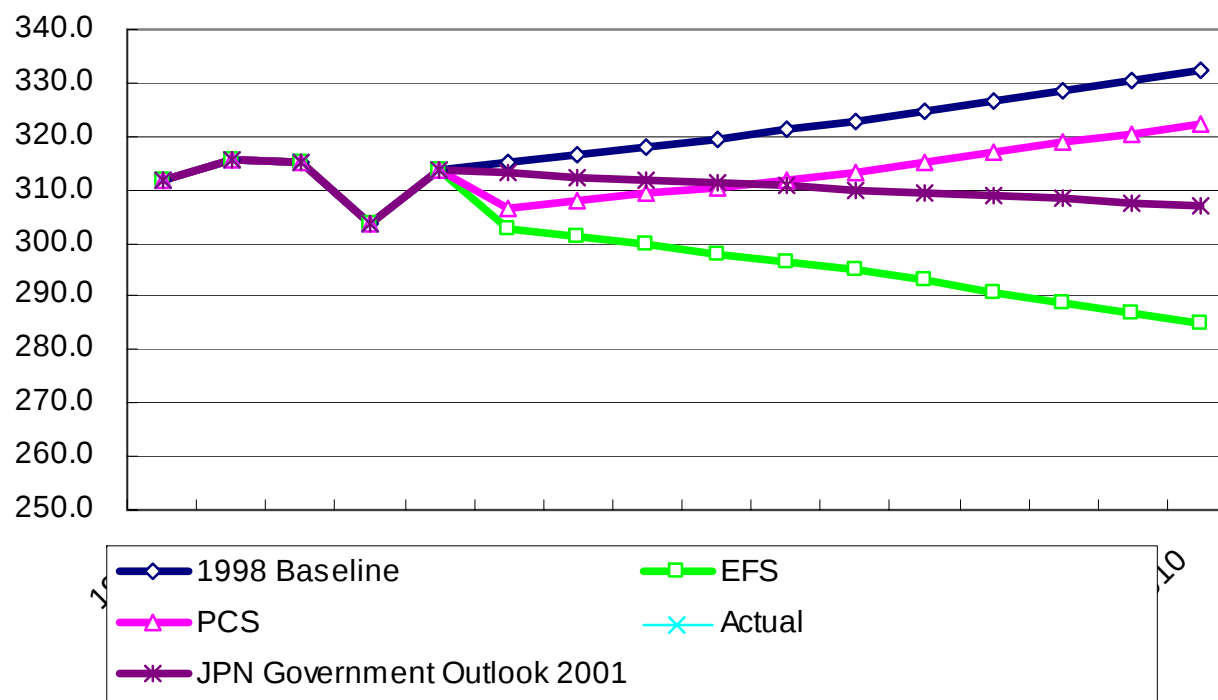


# ASEAN Economies

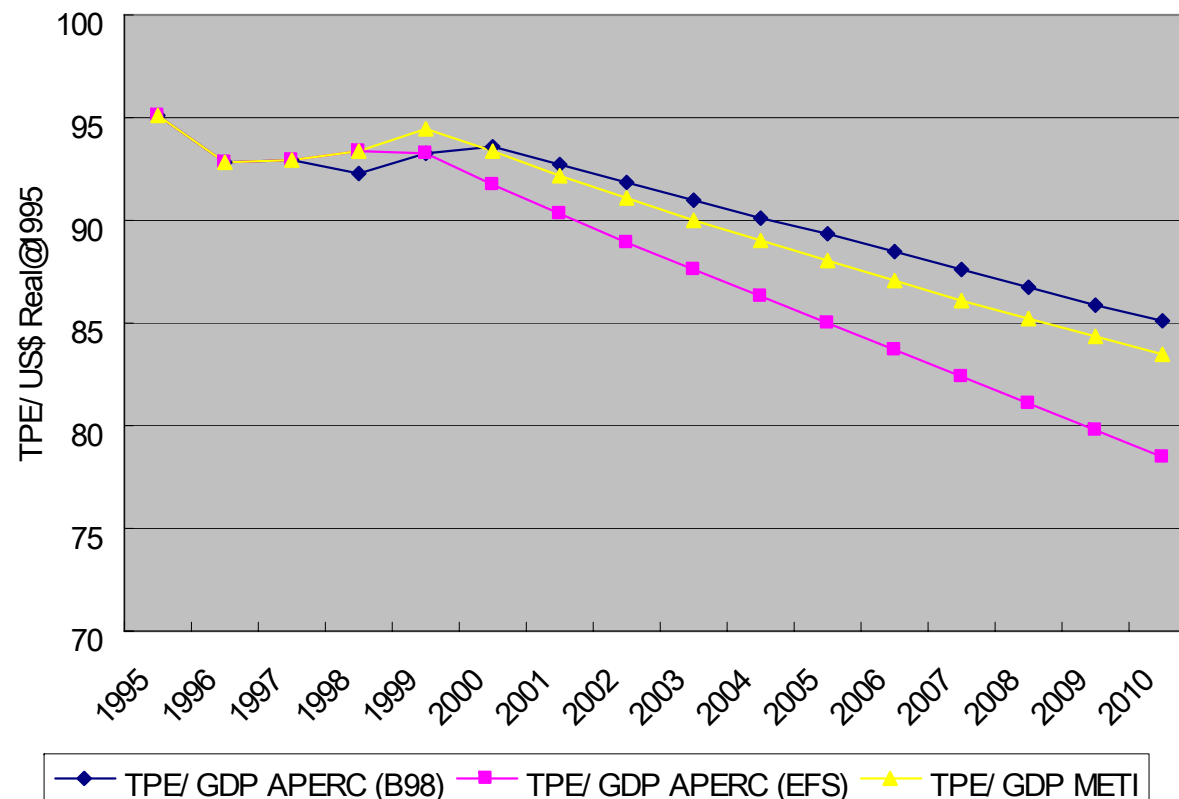


# Japan's CO<sub>2</sub> Emissions May Be Lower Even in a Reference Case.

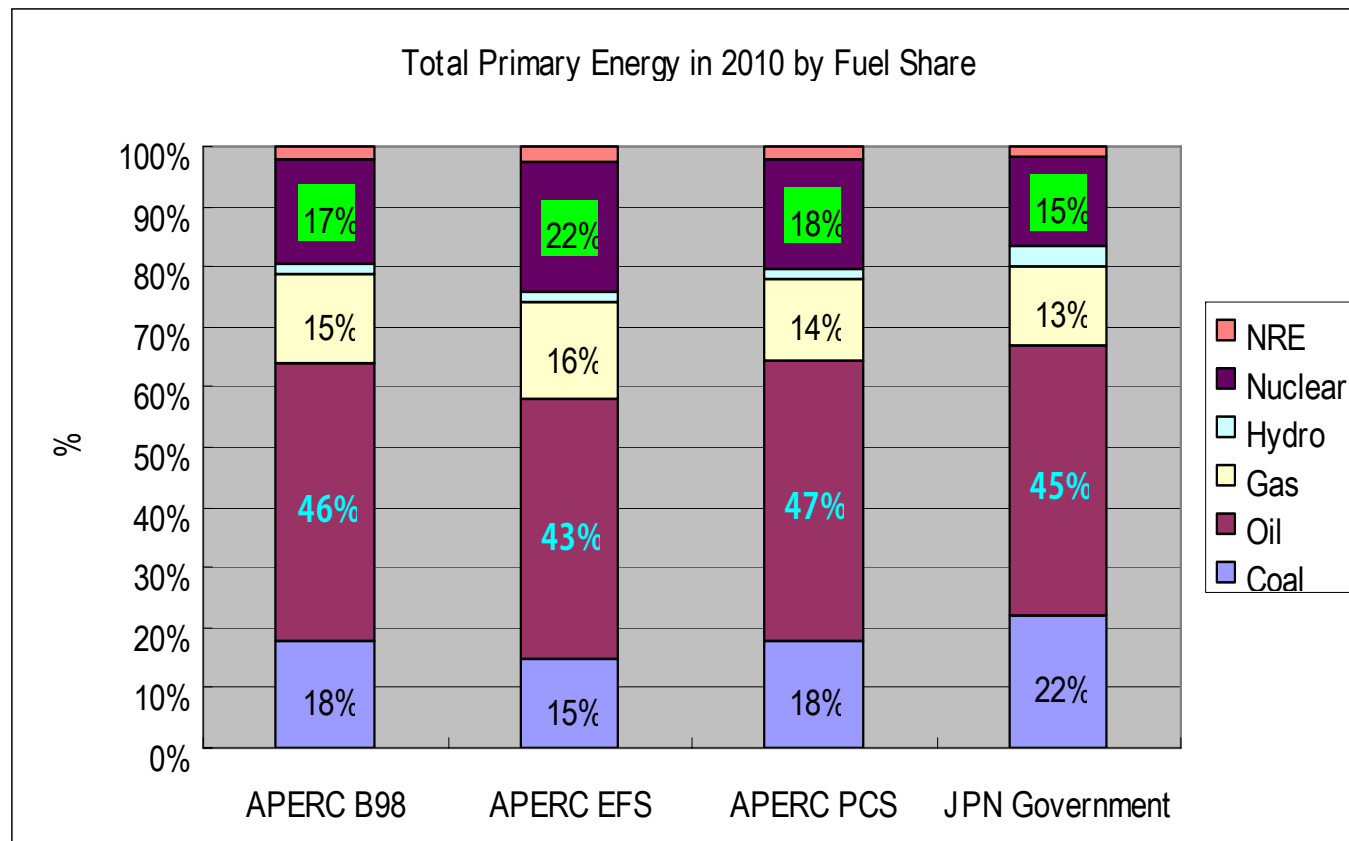
Million ton-C

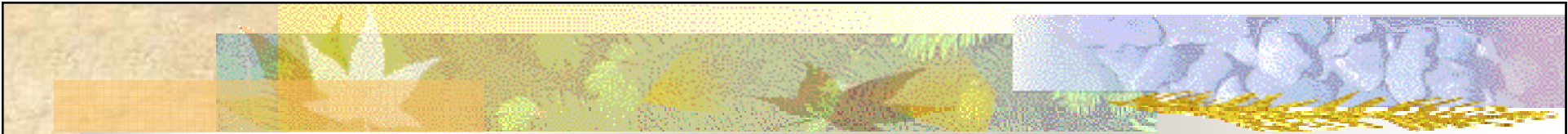


## But Energy Efficiency Will NOT Improve Much.



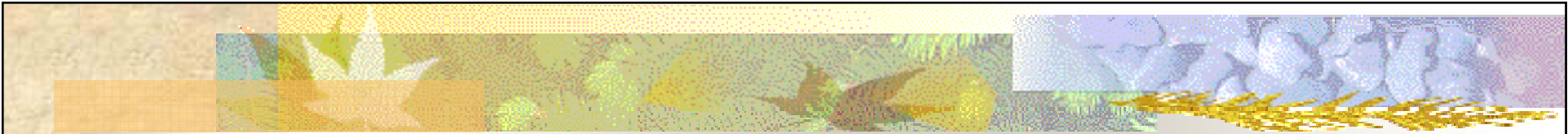
# Cleaner Fuel Share Will Not Increase in Japan. Main Decline Results from Lower Economic Growth.





## Natural Gas/Power Supply Links' Benefits

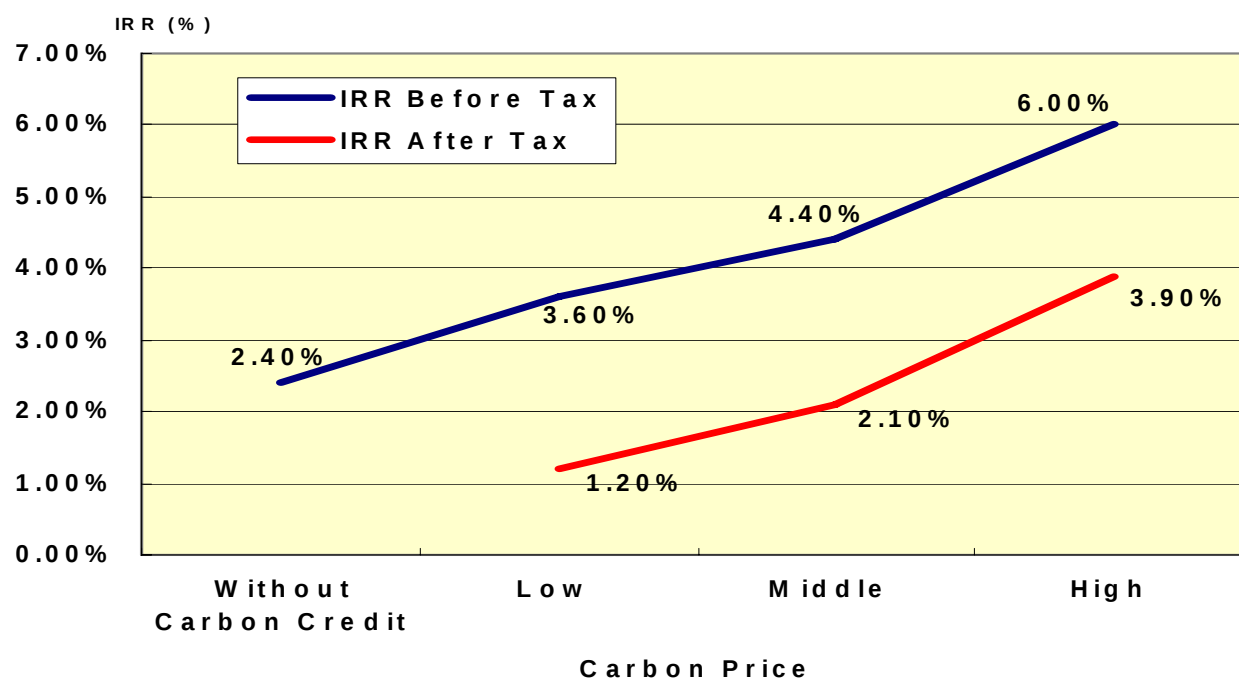
- Lower SO<sub>x</sub> and CO<sub>2</sub>
- Facilitating Competition;
- Better Supply Security;
- Efficient Resource Use;
- Regional Benefit Sharing



## Problems with Kyoto Mechanisms

- Limited Practical Experience;
- International Trade Untested;
- Existing High Transaction Costs Overlooked;
- Benefits Exaggerated.

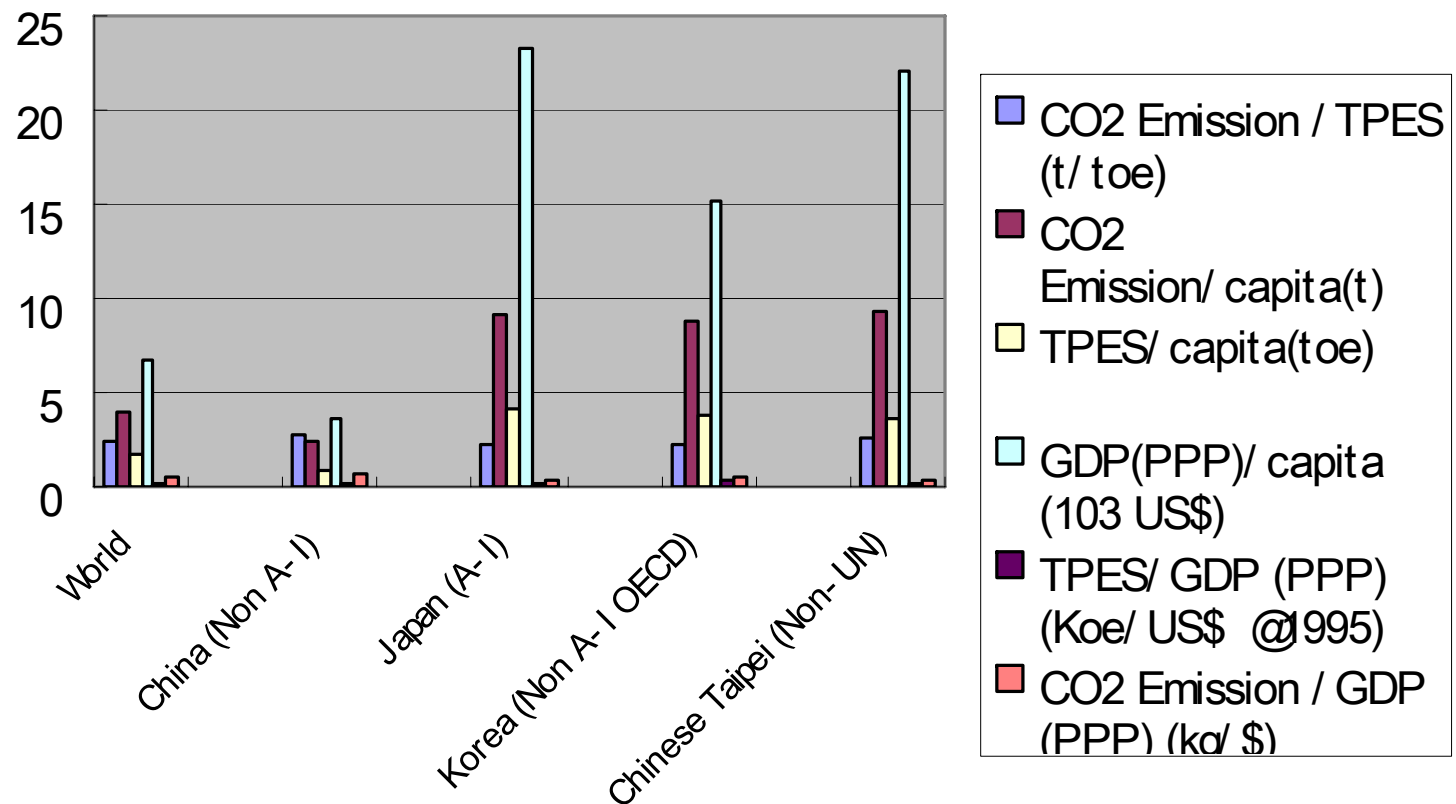
# Low Profitability of Wind Power Project in China



Basic Assumptions: 10MW; Electricity Price: \$ 0.057/Kwh; Income tax rate: 20%; Capacity factor: 22%; Capital Investment: \$ 1,000/kw; Monitoring Cost: \$ 30,000/year; O&M Cost: \$ 0.01/kwh

Source: APERC, 2001, Making the Clean Development Mechanism Work

# Differing Positions in East Asia



Source: IEA (2001)



# **Proposal: Emission Trade in East Asia**

- Experiment for East Asian Environmental Cooperation
- Differing Potential of China, Japan, Korea and Chinese Taipei
- Fostering Voluntary Cooperation
- Learning by Doing