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UNEP

Presentation on Energy Security

History of Energy Security

Concerns: Defining the Challenge

- 1973-74 – Arab oil boycott
- US Strategic Petroleum Reserve
- Lack of forward strategy in India
- Lack of coordination between ministries
- Economic dimensions of energy security
 - Low incomes and high prices
 - Vulnerability of price increases
- Experience of 1973-74 in India

Major Investment Required in Energy Supply & Infrastructure

Investment (billion dollars)	2001-2010	2011-2020	2021-2030	2001-2030
Total Currency Investment	172	247	347	766

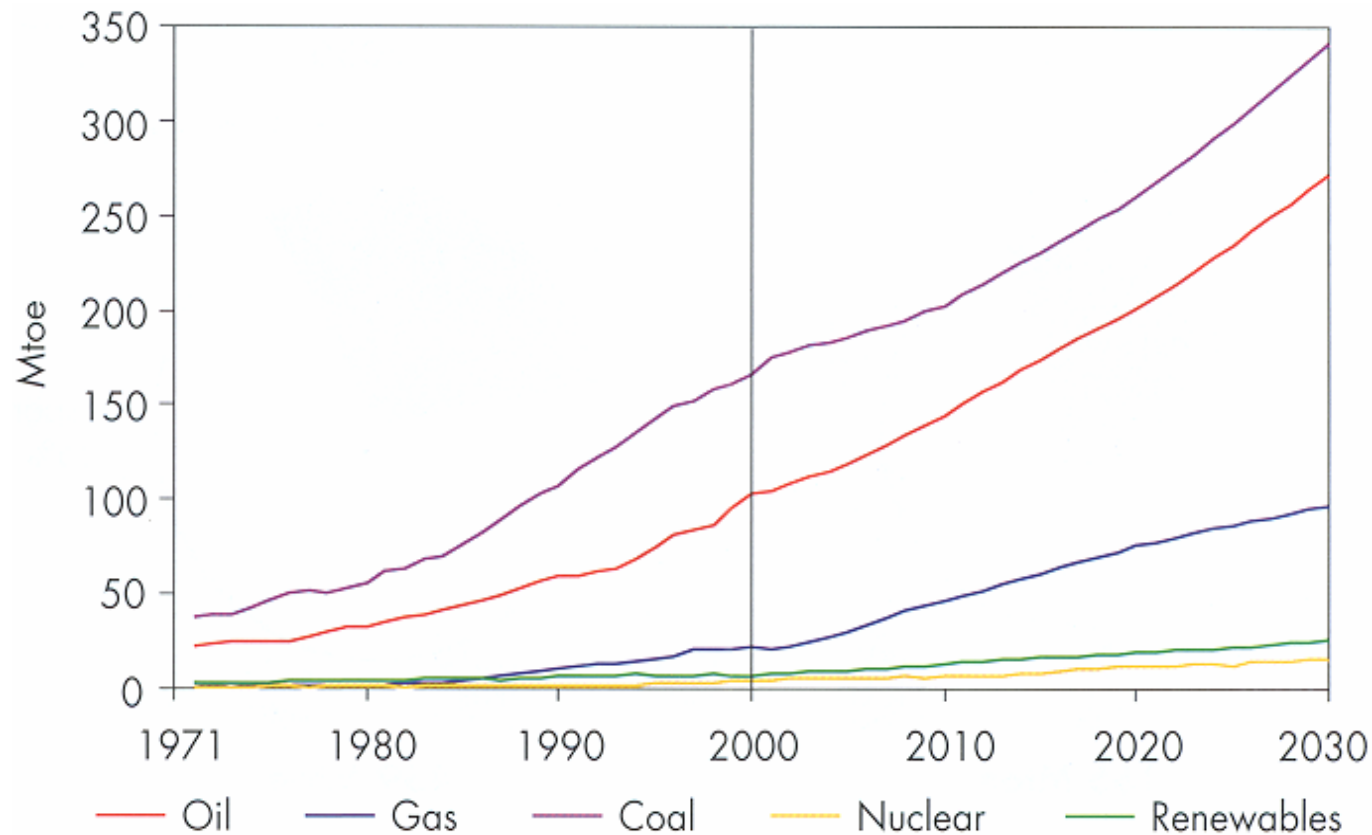
Source: International Energy Agency



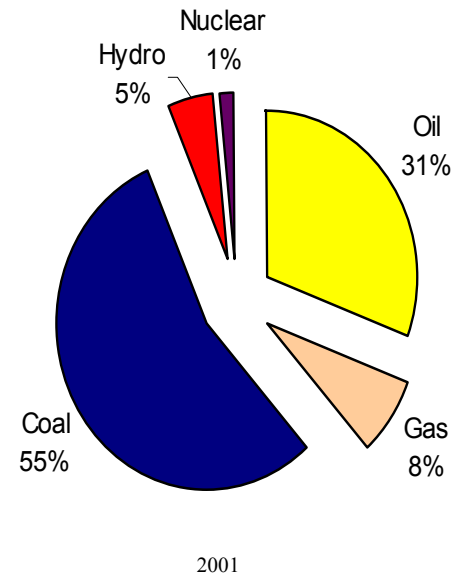
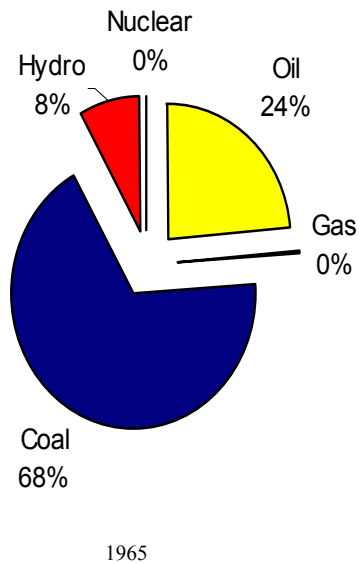
Integrating Energy Sub-Sectors

- Importance of power sector reforms
- Captive power generation
- Energy access
- Energy security = successful risk management

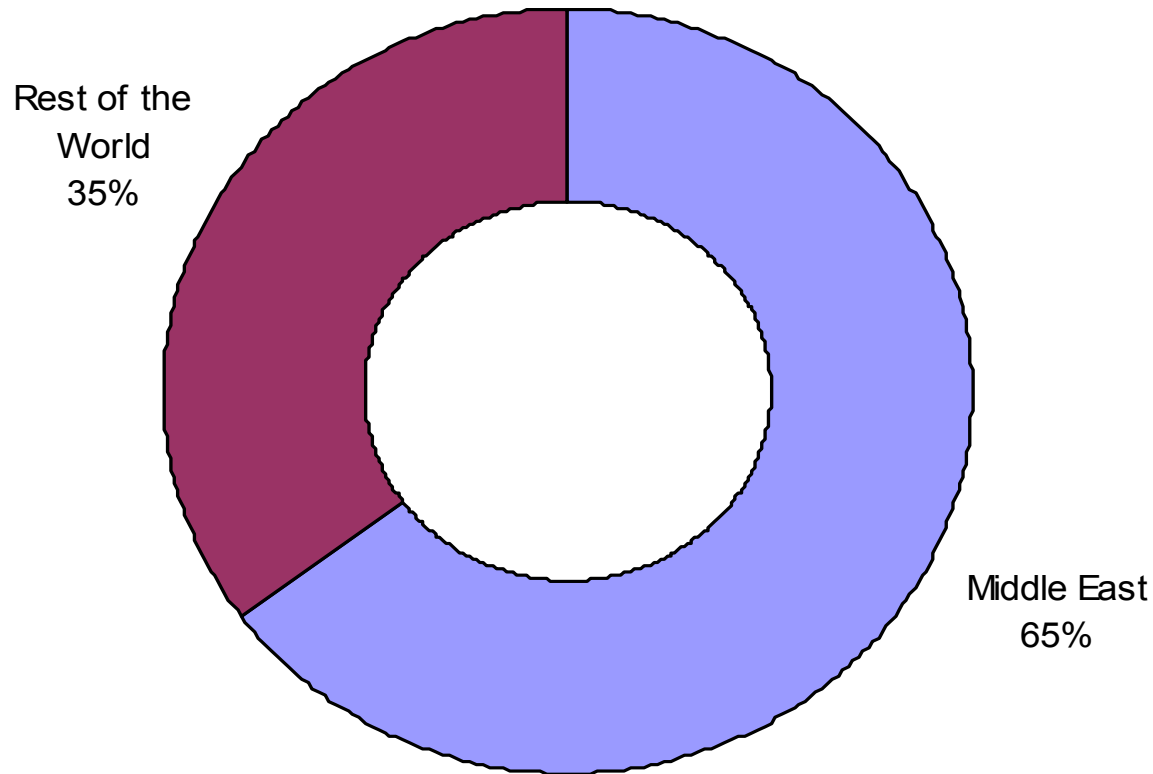
Total Primary Energy Demand in India



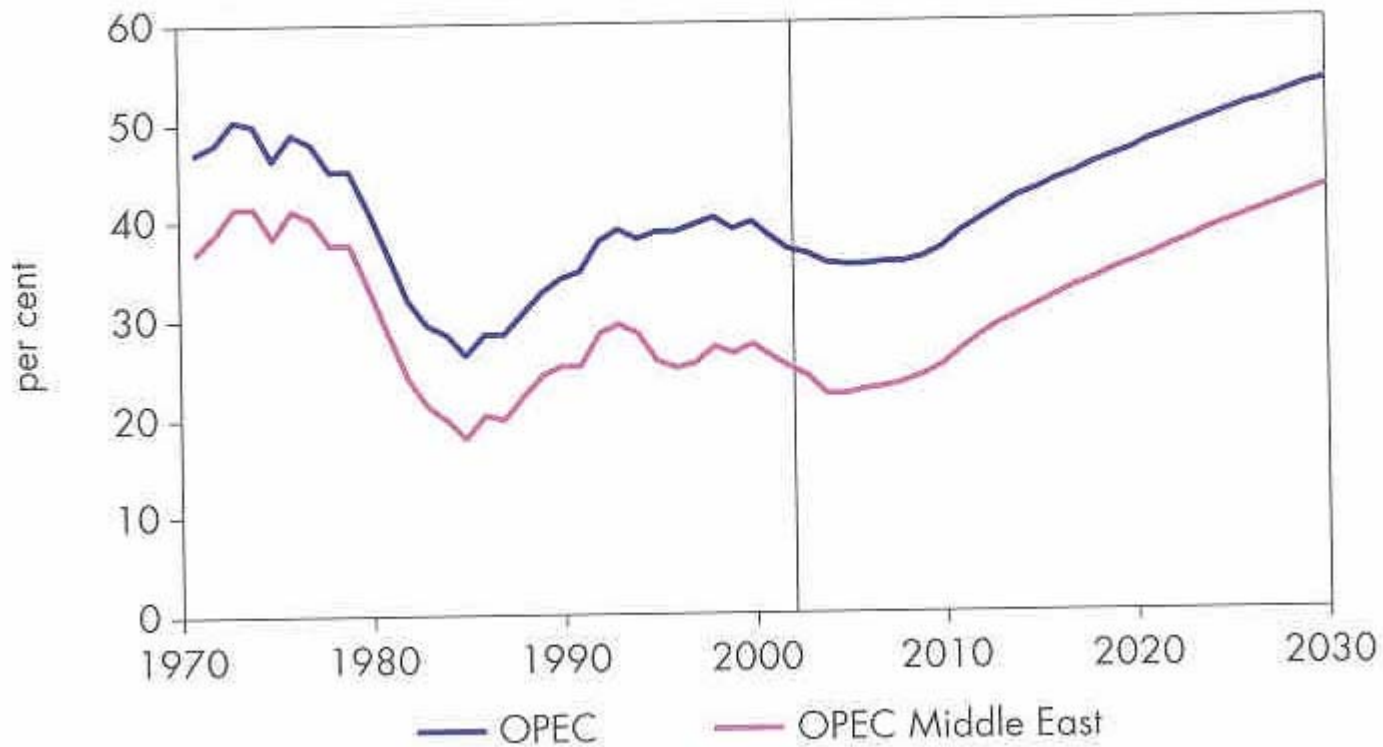
India's Energy Mix Over Time (%)



Distribution of World Proven Oil Reserves (%)



OPEC Share of World Oil Supply



Source: World Energy Outlook 2004

Energy Supply Security

- Adequate supply of coal
- Clean coal technologies
- Coal gasification and IGCC
- In situ gasification

Accessing Supply of Oil and Natural Gas

- Constrained indigenous supply
- Investing in overseas oil
- Distribution of world reserves
- The role of natural gas
 - Indigenous
 - Imports

Ensuring Energy Security

- Strategic reserves
- Promoting energy efficiency
- Restructuring towards energy efficient economic structure
 - Technology development for renewables
 - The special role of transport