

# India's Oil Security Challenges

MINISTRY OF PETROELUM & NATUTAL GAS

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सत्यमेव जयते



# Primary Energy Mix in India (%)

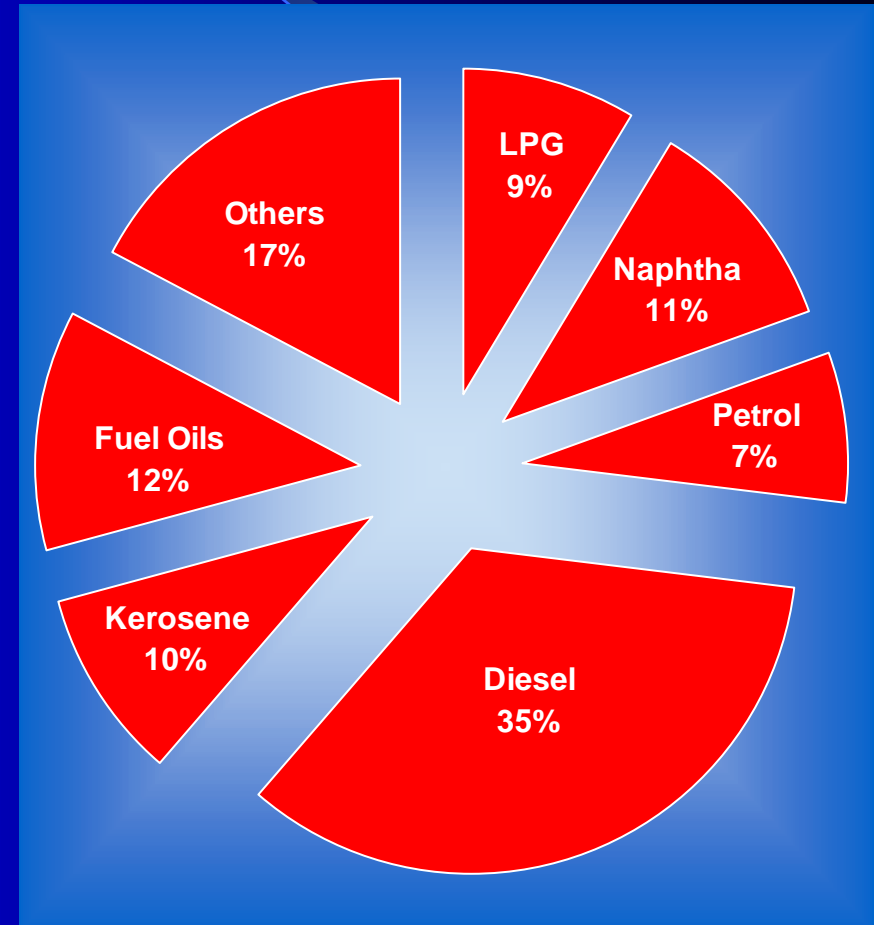
Year	Coal	Oil	Gas	Hydro	Others
2002-03	51	36	9	2	2
2024-25*	50	25	20	2	3

- As per Hydrocarbon Vision-2025 projections.

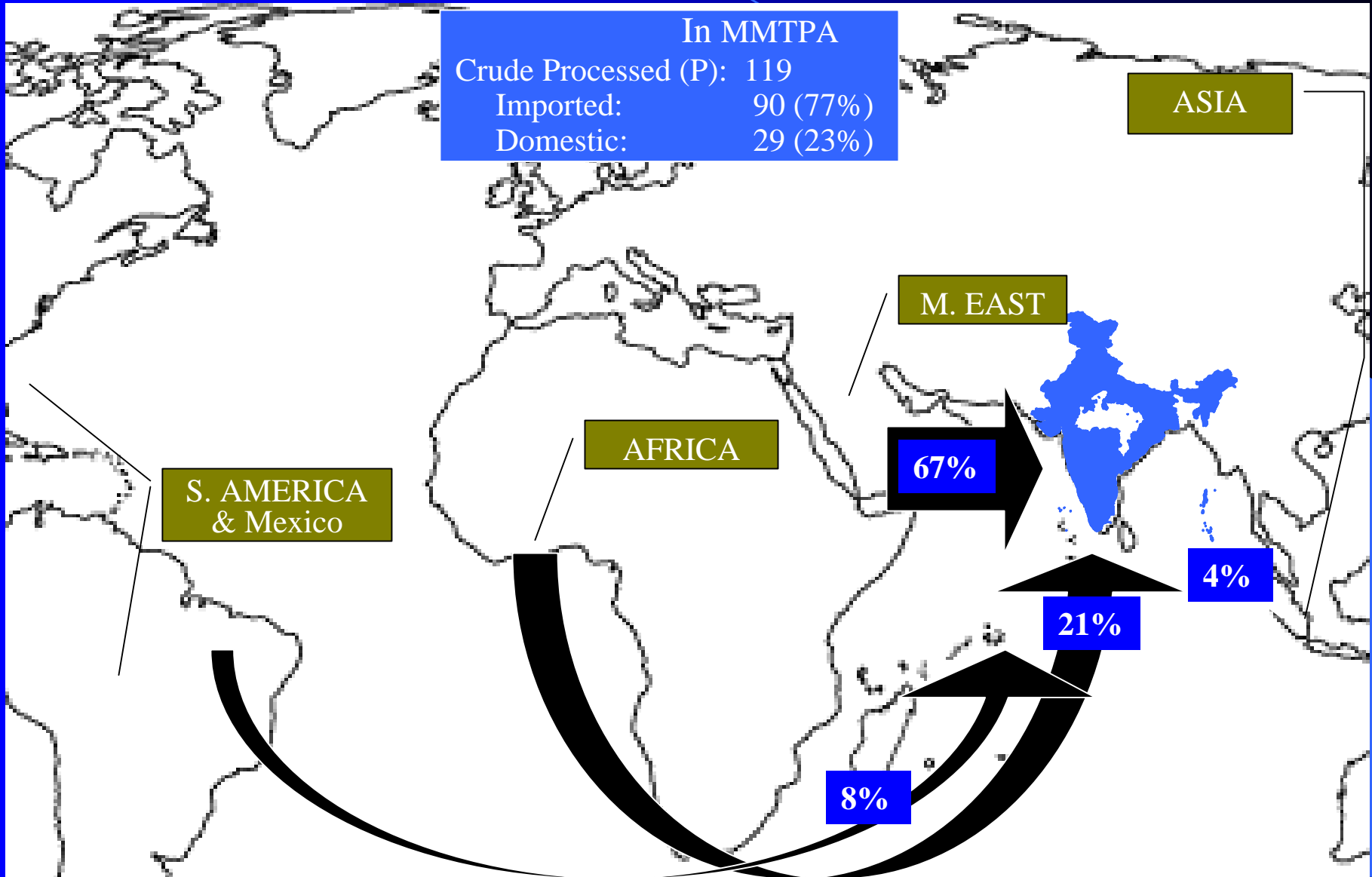
*Oil & Gas likely to be dominant fuels even in the next two decades*

# Petroleum Consumption During 2003-04

Products	MMT	M b/d
● LPG	9.3	0.30
● Naphtha	11.8	0.29
● Petrol	7.9	0.18
● Kerosene	10.2	0.22
● Diesel	37.2	0.76
● Fuels Oils	13.0	0.24
● Others	18.6	0.38
● <b>Total</b>	<b>108.0</b>	<b>2.37</b>



# India's Dependence on Oil Imports





# Consumption Patterns

Parameter	India	World
Per capita oil consumption in tons per year	0.09	0.57
Per capita GDP in \$	491	5201
Projected GDP growth rate	8 %	1.5 %

**Higher growth likely to lead to surge in oil demand in future**



# India's Oil Security Challenge

- High growth likely to lead to a surge in oil demand
- While all efforts are being made to increase oil sources , planning requires to factor possibility of corresponding increase in oil import dependence
- High oil import dependence increases the vulnerability of the economy to oil supply disruptions
- Efforts necessary to mitigate possibility of supply disruptions in a cost effective manner



# Policy Measures to Improve Oil Security

## Medium Long Term Measures

- Increased E&P Efforts
- Import source diversification
- Fuel diversification
- Encouraging renewable sources
- Developing new fuels- Hydrogen
- Increasing conservation awareness



# Increased E&P Efforts

- **Extensive exploration of domestic reserves through New Exploration Licensing Policy (NELP):**
  - 100% FDI allowed, International competitive bidding, Single window approval, Transparent Process, Excellent Tax Incentives & Special deepwater concessions, 7 year corporate tax holiday through NELP, Freedom to market production domestically
  - During the last 4 years, 90 E&P contracts have been signed through 4 rounds of NELP, committing investment of \$ 4 billion.



# Increased E&P Efforts: NELP – V (5<sup>th</sup> Round)

- NELP-V licensing likely by the end of 2004.
- 20 attractive blocks, offshore & onland, on offer.
- Road shows in Calgary, Houston & London
- Data, available in digitized form, at Houston, London and Delhi
- Possible farm-in opportunities in existing blocks.
  - ONGC has identified a number of small size fields for offering for development and production to private companies on service contract basis
  - ONGC may be contacted for details



# Increased E&P Efforts

- **Improving oil and gas recovery from producing fields**
  - NOCs have identified 15 major fields including Mumbai High for redevelopment involving investment of about Rs. 110 billion (about \$ 2.4 Billion).
- **Acquiring equity oil abroad through OVL**
  - Investments in oil and gas E & P fields in Vietnam, Russia, Sudan, Iran, Myanmar, Libya, Syria and Iraq.



# Import Source Diversification

- During 2003-04, oil companies imported crude from 23 countries, with oil PSUs entering into term contracts with 7 countries
- Oil companies constantly identify new grades of crude. As a result, there were more than 70 crude oils in the acceptable basket during 2003-04
- Import source diversification is a continuous process



# Fuel Diversification

- **Natural Gas/LNG/CBM**
  - Exploring Gas imports through pipelines from neighboring/nearby countries like Myanmar, Bangladesh, Iran, CIS countries, etc.
  - LNG imports from Qatar. – 5 MMTPA LNG terminal at Dahej (Gujarat State) operational from April 2004
  - Policy in-place for exploration and production of Coal Bed Methane (CBM)-16 CBM blocks awarded



# Fuel Diversification

- **Ethanol Doped Petrol/Bio-Diesel**
  - Sale of 5% ethanol blended petrol mandated in 11 States and 4 Union Territories. Proposal to extend the project to the whole country in second phase and to raise blending to 10% in third phase
  - 5% blend of Bio-diesel with diesel is currently under field trial before taking a view on mandating the use of the mixture.



# Fuel Diversification

- **Encouraging Renewable Sources of Energy**
  - Wide ranging programmes are being implemented to harness non-conventional energy sources such as solar, wind, small hydro, biomass, etc.
  - India second largest producer of electricity from wind energy in the world.



# Fuel Diversification

- **Hydrogen Initiative**
  - India is already amongst 15 countries which signed International Partnership for the Hydrogen Economy (IPHE) in Washington D.C. during November 2003
  - Within the petroleum sector, roadmap for introduction of hydrogen as an alternative fuel has already been identified.



# Fuel Conservation

- **Conservation Measures**

Petroleum Conservation Research Association, is engaged in creating awareness through field activities and public campaigns about the need for conservation of petroleum products through curbing wasteful practices, improvement in oil use efficiency, R&D activities, etc.



# India's Efforts to Build Strategic Stocks

*Covered in the next presentation*

Thank You

