

NCR Chamber of Commerce and Industry

Continuing Learning Programme on Efficient Energy Management System

Rising Trends in Energy Prices

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Agenda

Energy Sources in Perspective
Hydrocarbon Demand 2003-04
Drivers for Demand
Demand Projections through 2030
History of Crude Oil Prices
Transport Fuel Prices in India vis-à-vis Others
Crude Import Bill and Economic Indicators
Conclusions and Imperatives

Components of Energy Cost

Primary Energy Cost constitutes variety of elements including taxes. The structure is globalising and regionalisation, if any, is due to local policies.

Components of Primary Energy Cost are :

- Production cost
- Producer margin (usually decided by supply demand gap)
- Transportation cost
- Trading Margins
- Storage cost
- Transaction Taxes (Governments generate revenue and influence price)
- Polluter Charge (Environmental Legislations dictate this)
- Futures Effect (discount or charge over current market price)

Refined Energy Cost, however, gets localised and the users “feel” this price than the true cost of energy

The retail forms of energy are like follows-

- Electricity
- Diesel
- Petrol
- FO/LSHS
- Kerosene
- CNG
- LPG
- *Natural Gas*

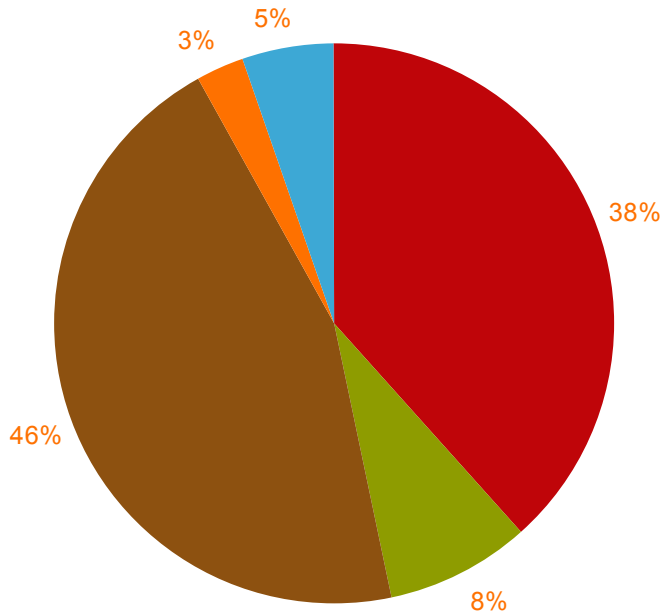
The cost of these energy sources the consumer faces undergoes dramatic change usually due to pricing and taxation policies.

Governments use subsidies and fiscal levies to lower or raise the prices of energy to consumers. Energy forms used by masses is monitored closely with an intent to insulate them from frequent and high fluctuations. Whereas, doll outs by exchequer to meet subsidies as also the sectoral and consumer class cross-subsidisation, makes this a zero sum game.

Recently in India, planners are suggesting equalisation of per unit energy content price of primary sources and suggestions to tax all energy sources is gaining ground. However, this will take long term to realise.

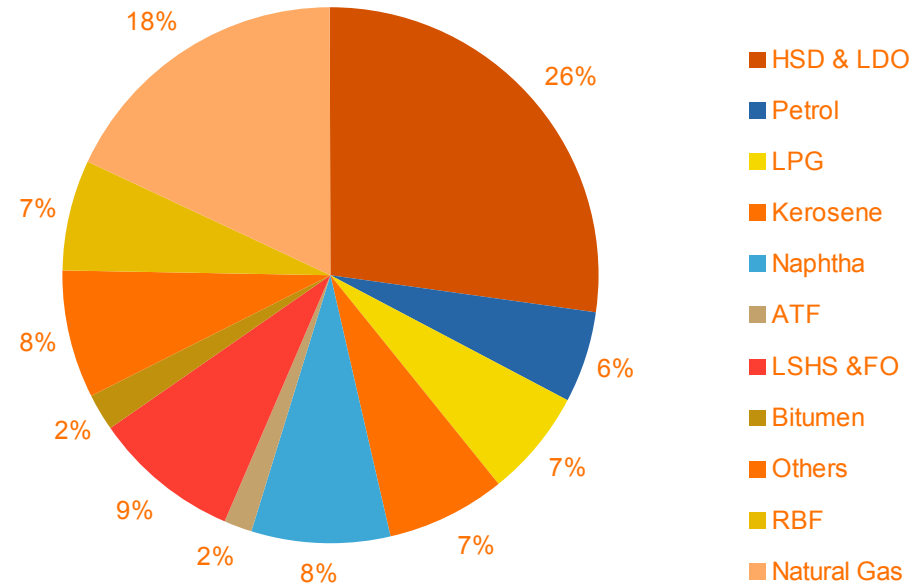
Oil & Gas and Coal equally contributed to primary commercial energy. Diesel was the highest consumed refined fuel in 2003-04

Commercial Energy (327 MMTOE)



- PoL (Incl RBF)
- Natural Gas
- Coal
- Lignite
- Others

POL and Gas (153 MMTOE)



Source : MoPNG, PwC Analysis

India has an ambition of high Economic Growth Rate.

- to preserve, protect and promote social harmony and to enforce the law without fear or favour to deal with all obscurantist and fundamentalist elements who seek to disturb social amity and peace.
- to ensure that the economy grows at least 7-8% per year in a sustained manner over a decade and more and in a manner that generates employment so that each family is assured of a safe and viable livelihood.
- to enhance the welfare and well-being of farmers, farm labour and workers, particularly those in the unorganized sector and assure a secure future for their families in every respect.
- to fully empower women politically, educationally, economically and legally.


COMMON MINIMUM PROGRAMME OF THE UNITED PROGRESSIVE ALLIANCE

27th May 2004



The growing influence of these factors, acting on the foundation of India's increasingly dynamic and vibrant economic base, lend credence to the view that India can achieve and sustain higher than historical rates of economic growth in the coming decades. The compounded effect of achieving the targeted annual GDP growth rate of 8.5 to 9 per cent over the next 20 years would result in a quadrupling of the real per capita income and almost eliminating the percentage of Indians living below the poverty line. This will raise India's rank from around 11th today to 4th from the top in 2020 among 207 countries given in the World Development Report in terms of GDP. Further, in terms of per capita GDP measured in ppp India's rank will rise by a minimum of 53 ranks from the present 153 to 100. This will mean, India will move from a low income country to an upper middle income country. This is a very real possibility for us to seize upon and realise.

**India
Vision 2020**



Planning Commission
Government of India
New Delhi
DECEMBER, 2002

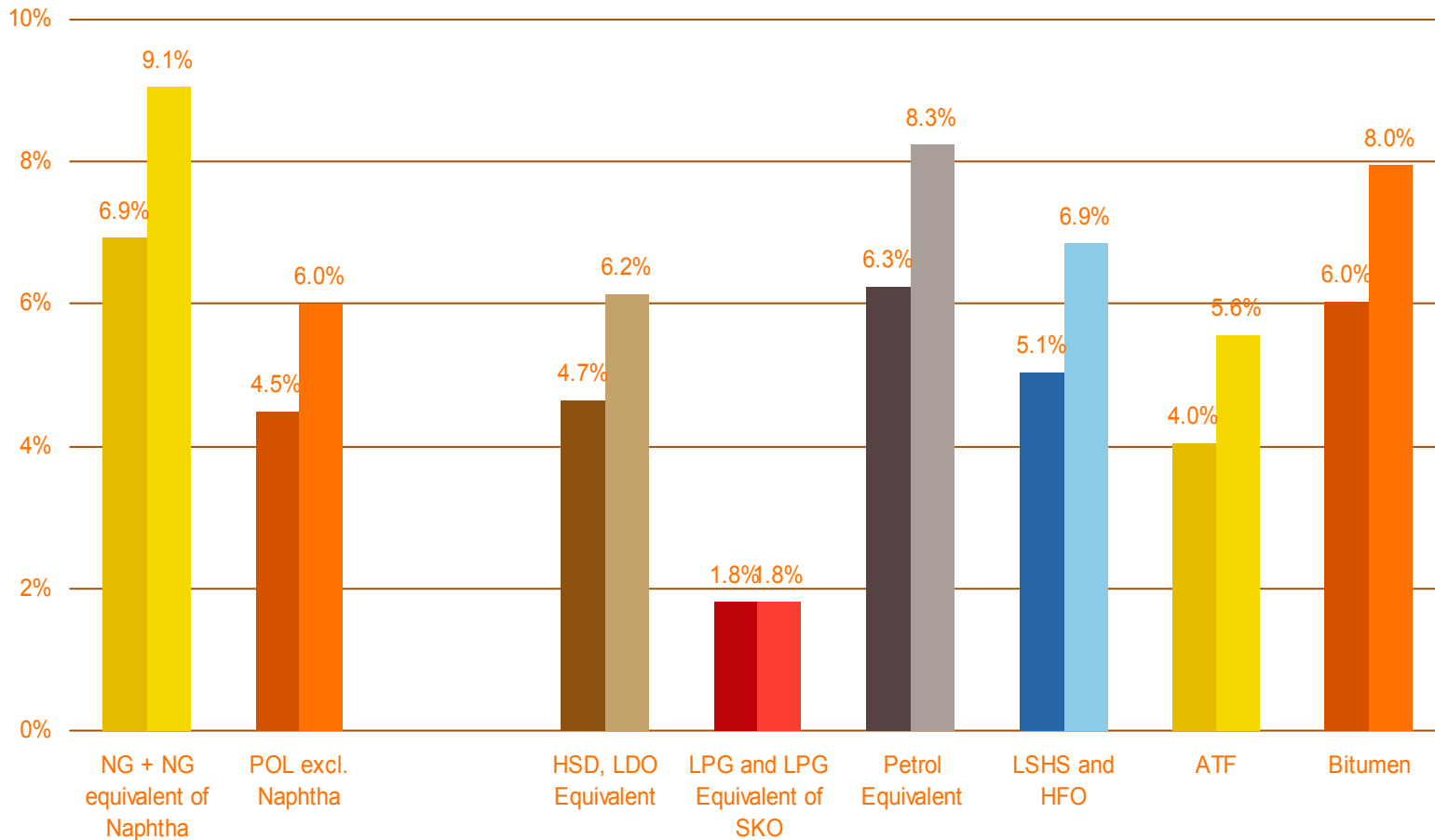
GDP :

- Business As Usual (BAU) = 6%
- High Output Growth (HOG) = 8%

Demand Projections through 2030

Hydrocarbon demand grows with economic growth and the latter would be compromised if supply challenges are not met.

CAGR of Products and NG upto 2030 under BAU & HOG Scenario, per cent



CAGR (%)	Multiple in 27 years
4	2.9
4.5	3.3
5	3.7
5.5	4.2
6	4.8
6.5	5.5
7	6.2
7.5	7.0
8	8.0
8.5	9.0
9	10.0

Source : PetroFed projections by PwC-IRADe

This objective of ABT is to encourage generators to produce more during peak hours and curtail generation in off-peak hours as also discouraging consumers from overdrawing.

ABT splits the existing monolithic energy charge structure into three components

- capacity charges (fixed),
- energy charges (variable) and
- UI (unscheduled interchange) charges.

The last component that is expected to bring about the desired grid discipline.

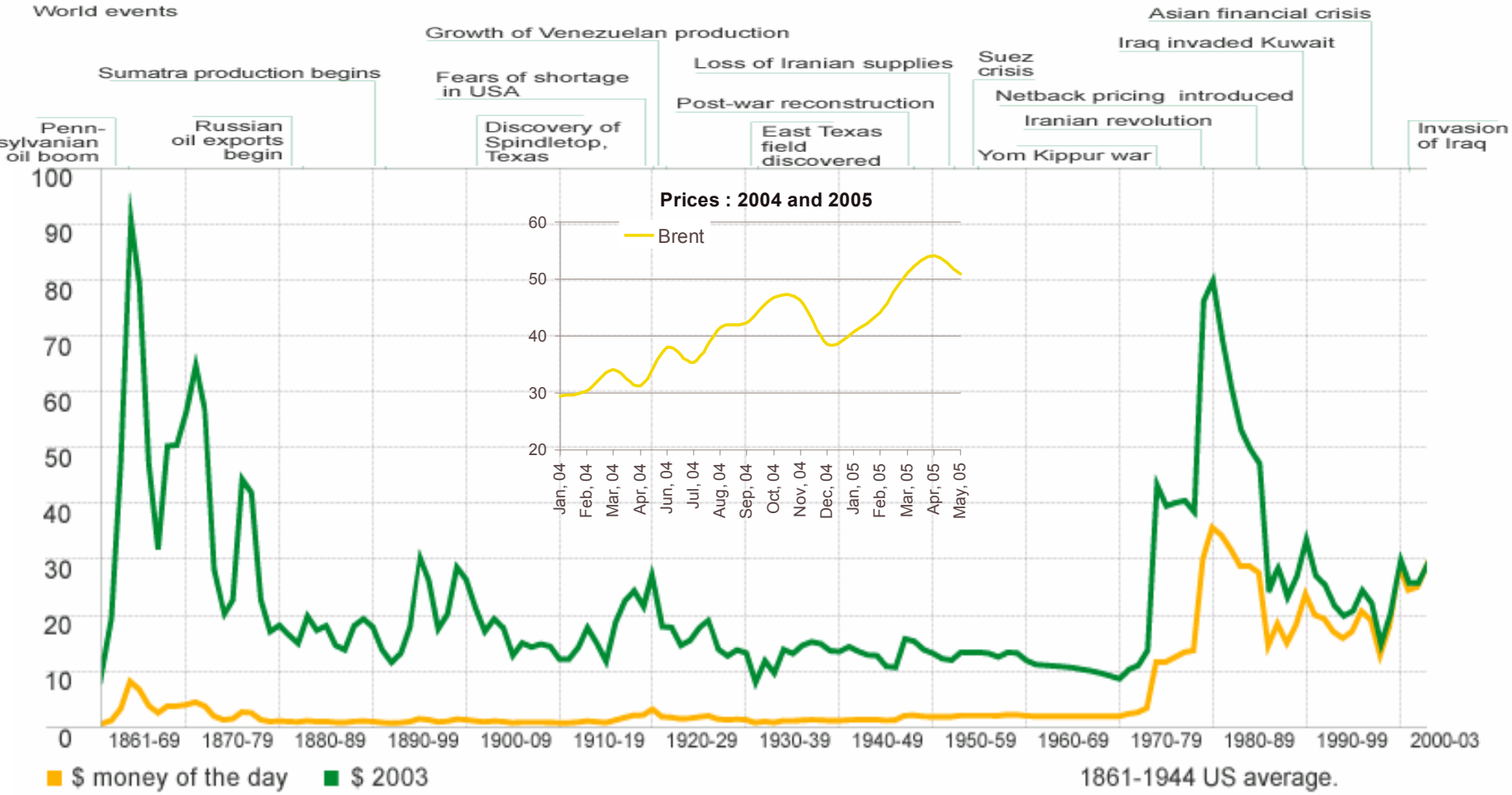
Splitting of the tariff into fixed and variable cost components is meant to act as an incentive for power trading which shall (ideally) conclude in a self-regulating power market regime. It is also expected to promote the concept of ELD (Economic Load Dispatch)

History of Crude Oil Prices

The time when we could count on cheap oil is probably ending. Should the world forget about cheap oil?

US dollars per barrel

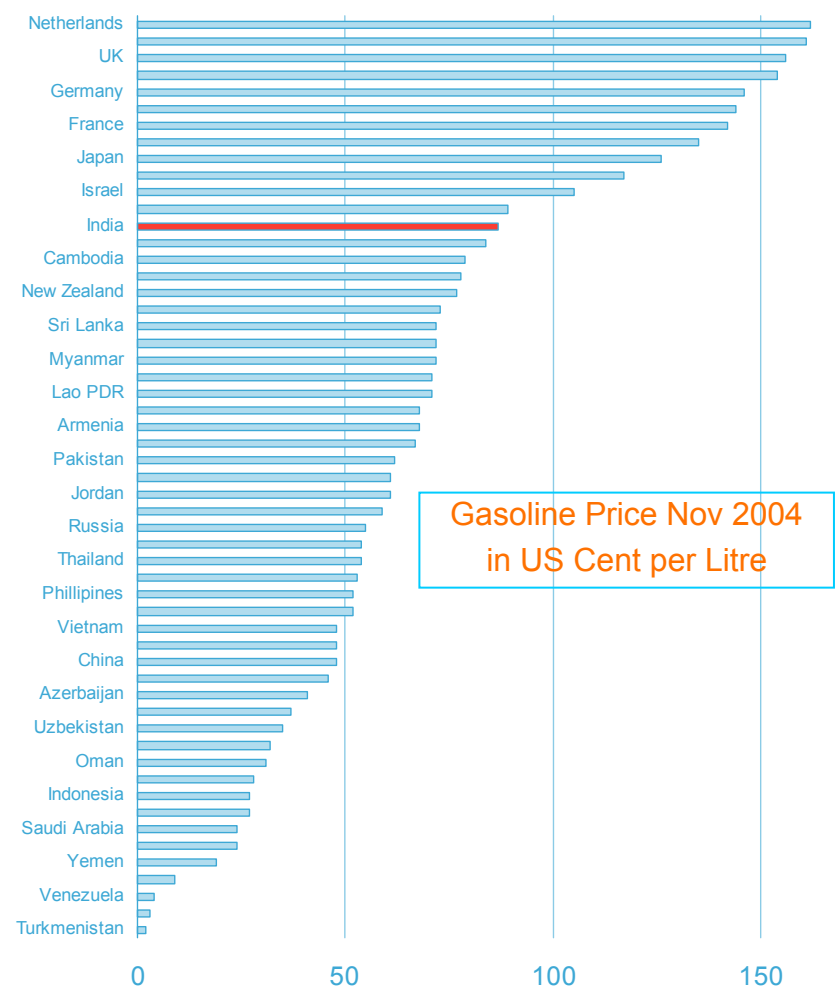
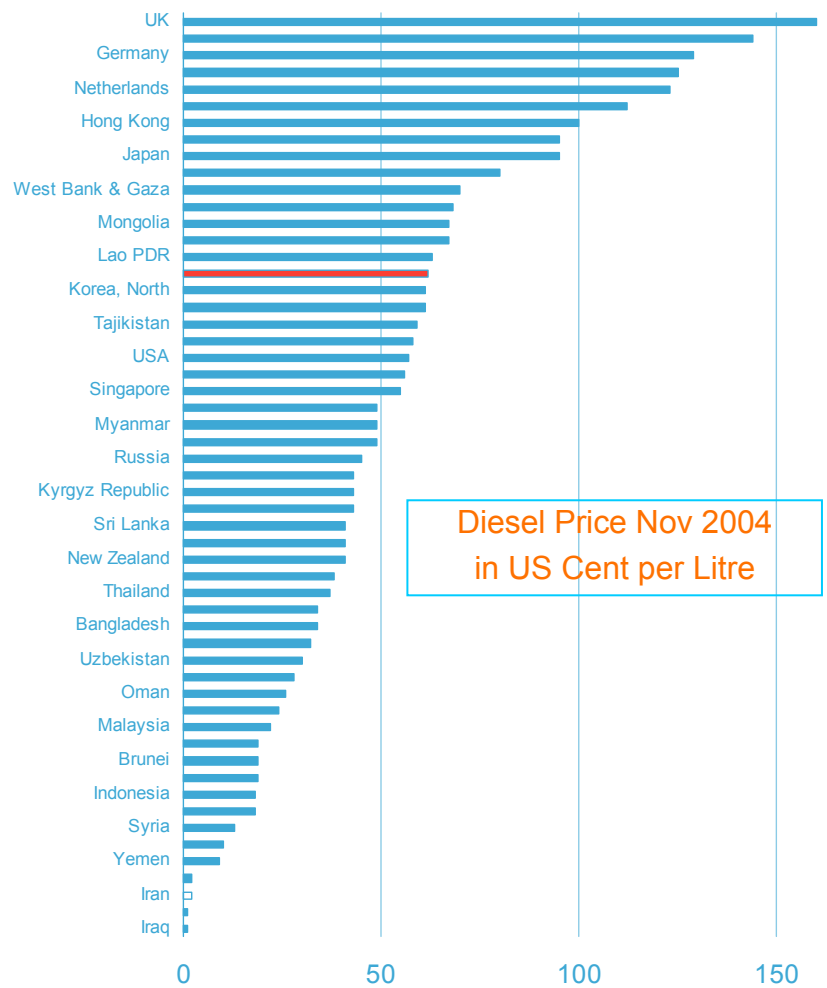
World events



Source : bp statistical review 2004, EIA

Transport Fuel Prices in India vis-à-vis Others

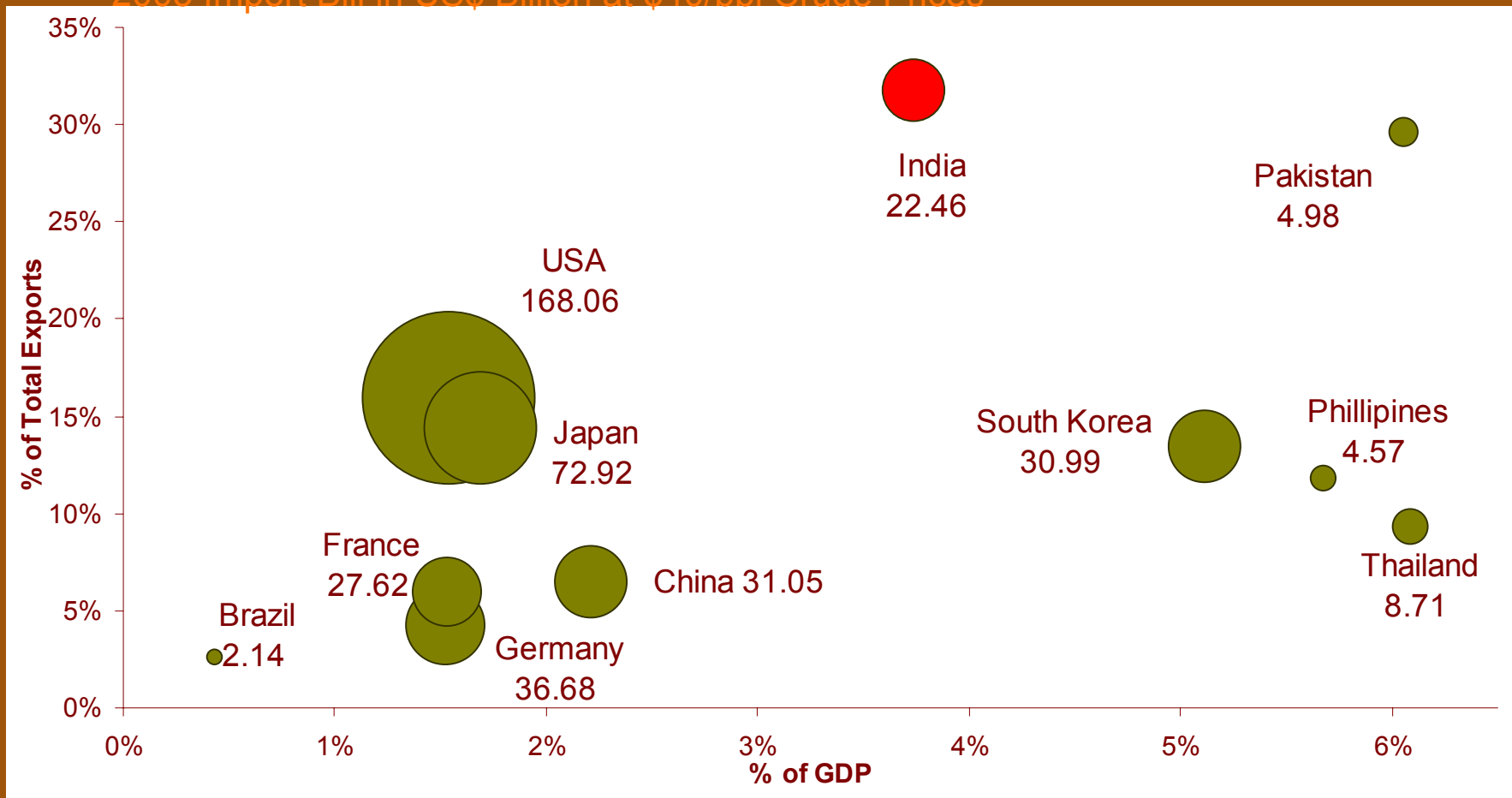
Countries price fuels with different intents : from collection of revenue to restricting use for environmental control.



Source : GTC, International Fuel Prices 2005

Who is vulnerable to oil price shocks? Can India withstand the brunt of rising crude oil prices?

2003 Import Bill in US\$ Billion at \$40/bbl Crude Prices



Source: World Bank, BP Statistical Review 2004, PwC

Economic growth compromised, if demand or supply challenges are not met.

- World energy demand will grow by two-thirds in the next 30 years (IEA WEO 2002) and nearly two-thirds of the growth in energy demand will arise in developing countries;
- International energy trade will expand dramatically;
- The importers of energy like India, have a major challenge to face on energy cost. Efficiency induction and conservation are imperatives.
- Differential pricing in India is fuelling inefficiency of consumption
- Fossil fuels will run out later than sooner. But environment, not scarcity, may unsettle the petroleum industry. Application of new technology is the way to meet challenges of efficiency and emissions. Only financially robust industry can pave way towards alternate fuels.
- Economic growth compromised, if demand or supply challenges not met. Energy Pricing has a major role to play for being ready to face challenges.

Thank you