

**Delhi High Level Conference on
Climate Change and Technology
Development and Transfer**

**Future Global Energy and Energy Technology
Scenarios**

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22nd October, 2009



Energy and growth

Large parts of Asia, Africa and Latin America need rapid and inclusive economic growth

- They have low per capita income
- Low consumption of power and poor access
- Huge human development indicator gaps
- Global economic growth, particularly in these parts, will require increased energy consumption
- Economic and technological challenges to:
 - Sharply reduce energy and carbon intensity of GDP
 - Generate clean power at economic affordable costs

Energy Scenarios

Alternative global energy scenarios 2030 are

- **Alternative I**

- Reference Case – Primary Energy Supply estimated at 17 billion tonnes oil equivalent in 2030, against 12 billion tonnes in 2007. Growth of +40%. (IEA estimates).

- **Alternative II**

- Estimate 14.4 billion tonnes oil equivalent - Low Carbon Emission – 450 parts per million CO2 equivalent emissions – Major shift to renewable and sharply reduced coal consumption (+13.3%).

Energy Technologies and Costs – Challenge to make technologies cost-effective

○ Scenario I- Solar Energy

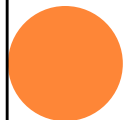
- Very large share of cost-effective solar power to provide major energy requirements

○ Scenario – II - Nuclear Power

- Expands rapidly, along with development of carbon capture and sequestration for coal-based power plants at economic costs

Fusion for energy for power

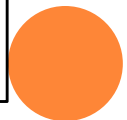
○ Scenario III – A mix of the above



Energy Technology & efficiency

All Scenarios are supported by energy-efficient systems

- Motor car systems – possible to maximize hybrid cars if challenges of production and transportation of Hydrogen can be met
- Electrical appliances, especially air conditioning
- Buildings
- Manufacturing units



The Indian Scene - I

Current Status

- Rapidly growing economy at 8%-9% in four years. World economic slowdown has reduced growth to 6%-7%
- One billion people
- Need for rapid economic growth as per capita incomes are about \$ 1,000



The Indian Scene - II

Future Energy Scene

Energy intensity of GDP declining

- Energy intensity per unit of GDP may go down by 20% in the next decade. Imperatives of growth may lead to energy consumption increase by three times by 2030
- Work on 8 Climate Change Missions being undertaken for improving energy efficiency, maximizing clean power and controlling carbon emissions.



THANK YOU

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