World Energy Outlook 2007: China and India Insights

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Approach

• Co-operation with China’s NDRC & ERI, India’s TERI
  → Workshops / meetings in Beijing, Delhi
  → Chinese and Indian experts joined the IEA
  → More than 50 Chinese and Indian peer reviewers

• Scenario approach
  → Reference Scenario
  → Alternative Policy Scenario & 450 Stabilisation Case
  → High Growth Scenario (China/India)

• Full global update of projections (all scenarios)
• Analysis of the impact of China & India on global economy, energy markets & environment
The Emerging Giants of World Energy

China & India will contribute more than 40% of the increase in global energy demand to 2030 on current trends
Global Oil Supply Prospects to 2015

- Oil supply/demand balance is set to remain tight
- In total, 37.5 mb/d of gross capacity additions needed in 2006-2015
  → 13.6 mb/d to meet demand & rest to replace decline in existing fields
- OPEC & non-OPEC producers have announced plans to add 25 mb/d through to 2015
- Thus, a further 12.5 mb/d of gross capacity would need to be added or demand growth curbed
- Otherwise, a supply crunch cannot be ruled out
New Light-Duty Vehicle Sales in China

China’s oil imports reach 13 mb/d in 2030 as car ownership jumps to 140 per 1 000 people from 20 today.
China & India Coal Imports

China recently became a net coal importer like India, with both putting increasing pressure on international coal markets.
China & India in Global CO₂ Emissions

Around 60% of the global increase in emissions in 2005-2030 comes from China & India.
## World’s Top Five CO₂ Emitters

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*China becomes the largest emitter in 2007 & India the 3rd largest by 2015*
CO₂ Emissions from Coal-Fired Power Stations built prior to 2015 in China & India

Capacity additions in the next decade will lock-in technology & largely determine emissions through 2050 & beyond
Cumulative Investment in Energy-Supply Infrastructure, 2006-2030

Just over half of all investment needs to 2030 of $22 trillion are in developing countries, 17% in China & another 5% in India alone.
Alternative Policy Scenario
Increase in Net Oil Imports, 2006-2030

New policies reduce global oil demand by 14 mb/d by 2030, cutting sharply the need for imports.
Global Energy-Related CO₂ Emissions

Global emissions will increase by 57% in the Reference Scenario, but they level off in the Alternative Policy Scenario.
Effectiveness of Policies to Promote Energy Efficiency in China

Electricity Savings from More Efficient Air Conditioners & Refrigerators in the Alternative Policy Scenario

Tougher efficiency standards for air conditioners & refrigerators alone would save the need to build a Three Gorges Dam by 2020
India’s Local Pollution

New policies reduce substantially emissions of SO$_2$ and NO$_x$ – largely from coal-fired power plants, cars & trucks
By 2030, emissions are reduced to some 23 Gt, a reduction of 19 Gt compared with the Reference Scenario.
High Growth Scenario
Faster economic growth in China & India would have major implications for energy security & climate.
Conclusions

- Global energy system is on an increasingly unsustainable path
- China and India are transforming the global energy system by their sheer size
- Challenge for all countries is to achieve transition to a more secure, lower carbon energy system
- New policies now under consideration would make a major contribution
- Next 10 years are critical
  - The pace of capacity additions will be most rapid
  - Technology will be “locked-in” for decades
  - Growing tightness in oil & gas markets
- Challenge is global so solutions must be global

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