

Multi-year Expert Meeting
On Transport and Trade Facilitation:

**Maritime Transport and
the Climate Change Challenge**

16-18 February 2009

**World Energy Outlook 2008:
Focus on Post-2012 climate scenarios**

Presentation by

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INTERNATIONAL ENERGY AGENCY 

World Energy Outlook 2008
Focus on post-2012 climate scenarios

UNCTAD Expert Meeting
Geneva, 18 February 2009

Raffaella Centurelli
International Energy Agency

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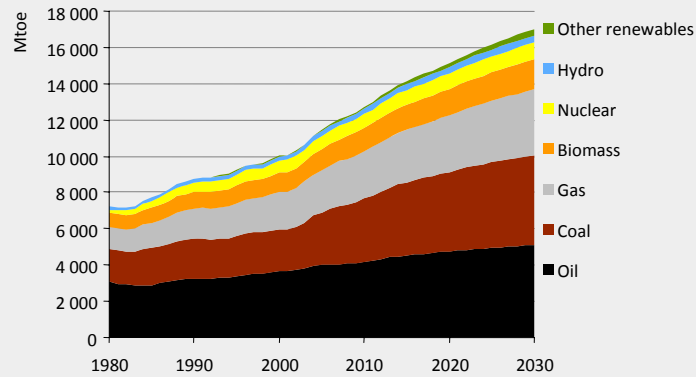
**The Reference Scenario:
it's unsustainable!**

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World primary energy demand in the Reference Scenario

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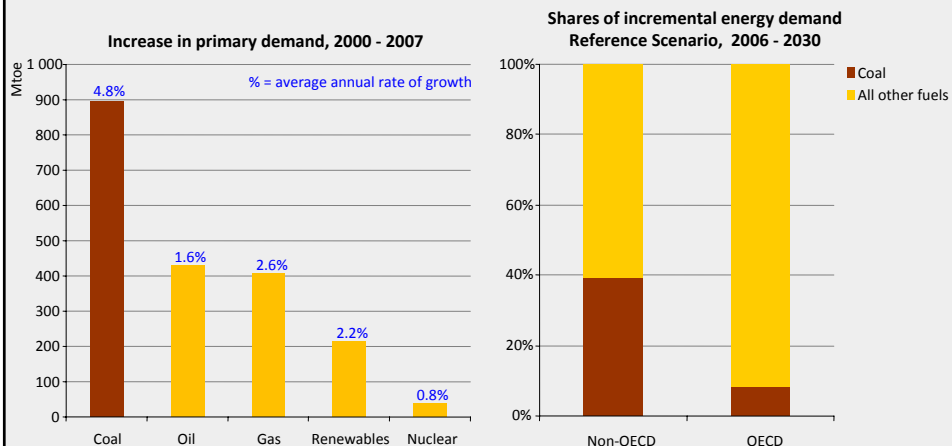


World energy demand expands by 45% between now and 2030 – an average rate of increase of 1.6% per year – with coal accounting for more than a third of the overall rise

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The continuing importance of coal in world primary energy demand

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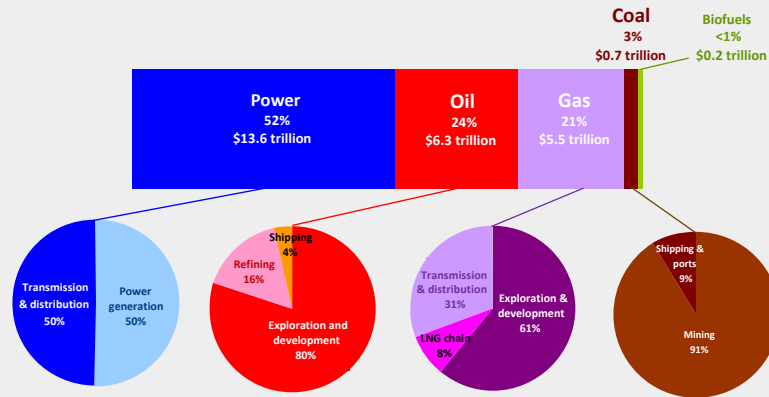


Demand for coal has been growing faster than any other energy source & is projected to account for more than a third of incremental global energy demand to 2030

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Cumulative energy-supply investment in the Reference Scenario, 2007-2030

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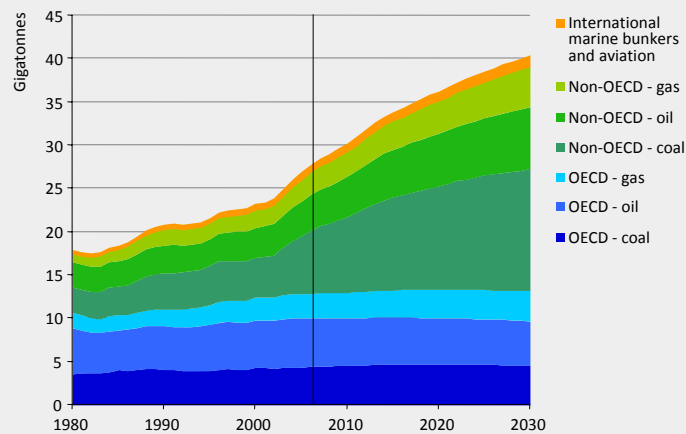


Investment of \$26 trillion, or over \$1 trillion/year, is needed, but the credit squeeze could delay spending, potentially setting up a supply-crunch once the economy recovers

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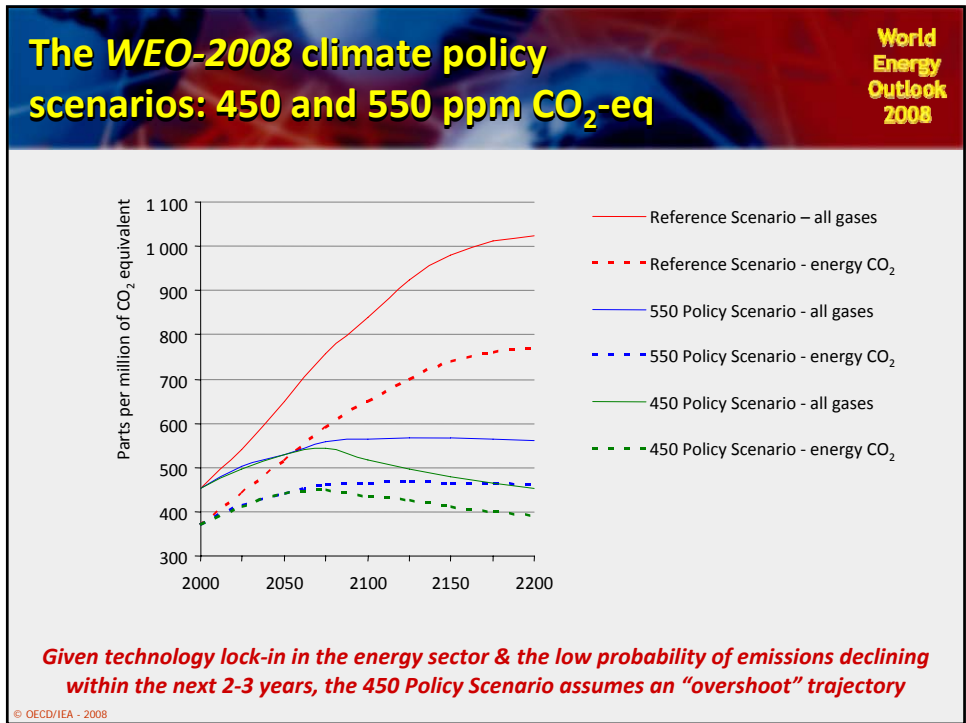
Environmental consequences of the Reference Scenario: Energy-related CO₂ emissions

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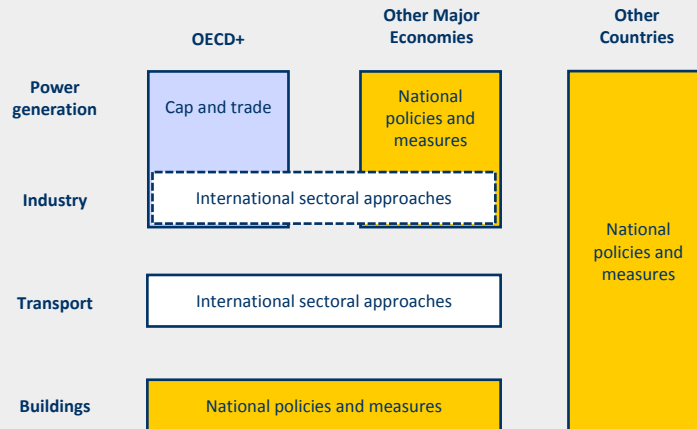
97% of the projected increase in emissions between now & 2030 comes from non-OECD countries – three-quarters from China, India & the Middle East alone

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Copenhagen: a plausible post-2012 global climate-change policy regime

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A combination of policy mechanisms – reflecting nations' varied circumstances & current negotiating positions – is a possible outcome at the Copenhagen COP at end-2009

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Key results of the post-2012 climate-policy analysis

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550 Policy Scenario

- Corresponds to a c.3°C global temperature rise
- Energy demand continues to expand, but fuel mix is markedly different
- CO₂ price in OECD countries reaches \$90/tonne in 2030
- Additional investment equal to 0.25% of GDP

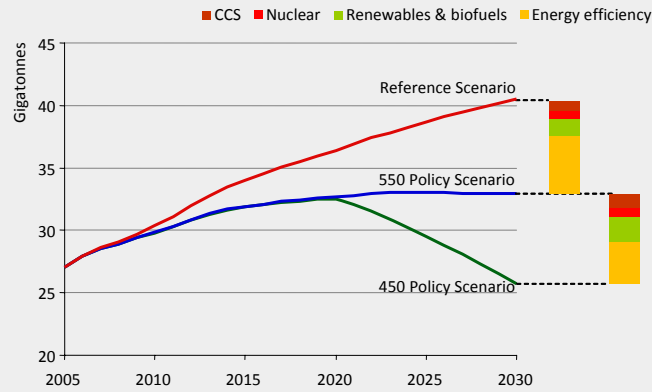
450 Policy Scenario

- Corresponds to a c.2°C global temperature rise
- Energy demand grows, but half as fast as in Reference Scenario
- Rapid deployment of low-carbon technologies – particularly CCS
- Big fall in non-OECD emissions
- CO₂ price in 2030 reaches \$180/tonne
- Additional investment equal to 0.6% of GDP

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World energy-related CO₂ emissions in the climate-policy scenarios

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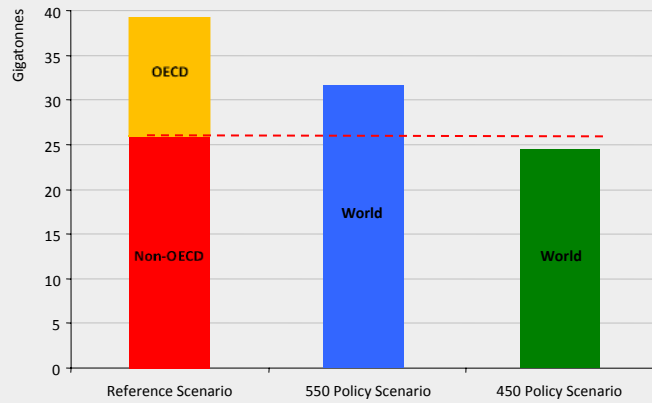
While technological progress is needed to achieve some emissions reductions, efficiency gains and deployment of existing low-carbon energy accounts for most of the savings

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The need of a global action

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World energy-related CO₂ emissions in 2030 by scenario



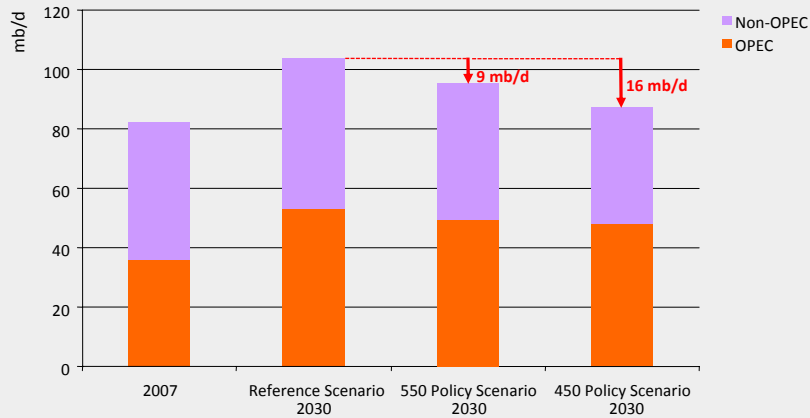
OECD countries alone cannot put the world onto a 450-ppm trajectory, even if they were to reduce their emissions to zero

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Synergies between energy security and climate objectives

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Total oil production in 2030 by scenario



Curbing CO₂ emissions would improve energy security by cutting demand for fossil fuels, but even in the 450 Policy Scenario, OPEC production increases by 12 mb/d from now to 2030

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Summary & conclusions

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Summary & conclusions

World
Energy
Outlook
2008

- Current energy trends are patently unsustainable — socially, environmentally and economically
- To avoid "abrupt and irreversible" climate change we need a major decarbonisation of the world's energy system
- The action must be global
- Measures to curb CO2 emissions can also improve energy security by reducing global fossil-fuel energy use
- The present economic worries do not excuse back-tracking or delays in taking action to address the energy and environmental challenges

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Thank you!

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