



The challenge of financing low-carbon growth

Dr. Richard A. Bradley Head of the Energy Efficiency and Environment Division International Energy Agency

Global challenge remains: CO₂ emissions in the **Reference Scenario in** *WEO-2009* and *WEO-2008*





The effect of the crisis on global trend would only be temporary. Existing policies can stabilise CO_2 in OECD countries. Without new policies, global CO_2 emissions are set to rise by 40% in 2030. Most of the increase is caused by new coal use outside OECD.

World energy-related CO₂ emissions per region and activity in 450 scenario





Efficiency measures account for 2/3 of the 3.8Gt abatement in 2020. Renewables contribute 20%. With substantial abatement potential outside the OECD+ region, financing will hold a key to the energy sector meeting a 450 ppm trajectory.

Source: World Energy Outlook, IEA 2009

World abatement emissions in the 450 Scenario





Current pledges point in the right direction but further efforts would be needed to close the gap and reach the 450 Scenario

Source: IEA analysis based on pledges as of 11 December 2009, and World Energy Outlook 2009

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Abatement policy approaches in 450 Scenario relative to the Reference Scenario, 2020





After realising the abatement potential of domestic policies and measures (NAMAs) and sectoral agreements, cap-and-trade in OECD+ countries yields a further 1.8 GtCO₂

Additional investment and fuel cost savings in the 450 Scenario vs. the Reference Scenario



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Fuel costs saving in industry, buildings and transport of \$8.6 trillion over the 2010-30 period more than offset these sectors additional investment of \$8.3 trillion

However, every year of delay adds \$500 billion to the required investment, to remain on track with the 450 Scenario

Source: IEA analysis, and World Energy Outlook 2009



Insights from work on sectoral approaches in electricity (IEA 2009)



Issued and expected emission reductions from CDM until 2012 – by project type

CDM pipeline information: Less than 1.5 GtCO₂ listed in electricity until 2012 – Likely delivery: $< 600 \text{ MtCO}_2$

Projected electricity emissions over that decade in non-Annex I: 60 GtCO₂

Growth trend in CO_2 from electricity in non-Annex I since 2000: +8% per year



Maximum total reductions from CDM: 2.9 GtCO₂

How can developed countries support mitigation in developing countries?





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Source: Sectoral Approaches to Electricity - Building bridges to a safe climate, IEA 2009

A cost perspective: carbon market vs. other instruments





Domestic policy packages must be supported in a way that combines effectiveness – the carbon market does not fit all energy-related CO₂ emitting activities

The need for international coordination?



- Under the Kyoto Protocol, climate policy is to be coordinated by the price of carbon – and the Protocol established the appropriate instruments
- Different policy instruments also needed see energy efficiency potential. Can coordination help?
 - IEA's 1-watt initiative: soft coordination through IEA which lead to viral success
 - Ban on incandescent light-bulbs: again viral success after a country by country and regional implementation
 - Next: International appliances or motor standards?
 - IEA is considering the value of energy efficiency policy coordination – beyond sharing of best practice in EE policy

Summary



- The financial crisis has halted the rise in global fossil-energy use, but its long-term upward path will resume soon without new policies
- Tackling climate change & enhancing energy security require a massive decarbonisation of the energy system
 - > Limiting temperature rise to 2°C requires significant emission reductions in all regions – every year of delay adds half a trillion dollars to cost
- A 450 path towards 'Green Growth' would bring substantial benefits
 - Investments in industry, transport and buildings would total \$8.3 trillion, but reduce fuel costs by \$8.6 trillion – energy efficiency must be a priority
 - > A price on CO₂ is essential but carbon markets must be supplemented by other policy interventions where price signals are not received
 - International finance (including fast-start under the Copenhagen Accord) must be mobilized for effective energy efficiency policy
 - The Climate Policy Initiative could help
 - Provide rapid evaluations of countries' policy packages, from the stand point of the mobilization of domestic and international finance
 - > Identify if and where finance would benefit from international policy coordination