



Recent research results from Oxford University and Tyndall Consortium

www.eci.ox.ac.uk
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- Malhi: Climate change, avoided deforestation and resilience of Amazon
- Boyd and Mann: Governing the CDM
- Schroeder: Climate governance and cities
- Bumpus and Lovell: Governing voluntary offsets
- Liverman: Tyndall latest insights



CDM and Sustainable Development: Lessons learned

- CDM
 - can lead to *some* successful cost effective emissions reductions
 - Has not yet realised potential scale
 - Has fallen short of potential in contributing to sustainable development

See publications by Emily Boyd, Phil Mann
and Esteve Corbrera





Is the CDM haunted by “sustainable development”?

- Difficulties in both *definition* and *process* of defining sustainable development criteria by individual non-Annex 1 governments
- Examples from Peru, India, Brazil



Some CDM alternatives

- Five alternatives for future CDM, including measures to benefit both sustainable development and mitigation
 - Alternative 0: Current system
 - Alternative 1: Minimal global standards for SD benefits
 - Alternative 2: Establish a global checklist
 - Alternative 3: Establish a global point system
 - Alternative 4: Policy-based adjustment to CERs



Programmatic CDM for the cooking sector



- Improved cook-stoves
 - social, economic and environmental benefits
 - slow progress - barriers
 - new CDM methodologies ?
- Benefits of carbon finance under pCDM
 - ongoing revenue stream based on real achievements
 - exploit synergies between public policy and private sector
 - lessons from market transformation in EU
- Challenges
 - additionality (introduce early, increase adoption and overall penetration)
 - monitoring and attribution
 - linking to overall energy and development policies (DFID report)



Will voluntary & compliance markets converge?

- Increasing interactions
 - Offset providers are developing both voluntary & CDM projects
 - UK government proposal for CERs in voluntary market
 - Financial sector interest in standardising voluntary credits
 - Implications of a convergence?
 - Loss of sustainable development aspects of VCOs
 - Increased cost of voluntary projects
 - Shift in media coverage
- See papers by Bumpus, Lovell

12:15pm

UK to set world's first carbon offsetting standards

Staff and agencies
Tuesday January 16, 2017
Guardian UK/India



Traffic flows on the M25, London, England, February, Jack J. Mahoney/PA

Voluntary Carbon Standard aims to clean up offsets

Climate leaders demand that governments offer robust certification of offset projects



They should give green credits, which a voluntary standard aimed at giving consumers greater confidence in offset purchases.

The Voluntary Carbon Standard - developed by The Tyndall Centre, the International Carbon Sealing Association and the Forest Stewardship Council's Sustainable Forestry Initiative - aims to bring an ethical perspective to the voluntary offsetting market.

Climate leaders demand that governments offer robust certification of offset projects.

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Comparison of Hydro and Stoves

- Project implementation is influenced by both the structure of mechanism and local actors:
 - Structure is altered on the ground to include or exclude certain communities (geographically, socio-economically)
 - Each mechanism has tensions between effective carbon reductions and sustainable development

<i>CDM - Micro Hydro</i>	<i>VCO - Improved Cooking Stoves</i>
Macro, centralised	Micro, decentralised
Carbon clearer	Carbon complex
Community development 'added-on'	Development integral to reductions



Open questions about the convergence of the markets

- Does convergence in structures mean changes towards a focus on
 - *carbon and/or development?*
 - greater accountability?
- Will the offset industry survive?
- Shape of post-2012 offsets and inclusion of current non-Kyoto parties?



Looking where the action is: The role of cities in climate mitigation

Dr. Heike Schroeder
Environmental Change Institute
University of Oxford

Dr. Harriet Bulkeley
Department of Geography
Durham University



Cities as major players

- Urban areas occupy only about 4% of the earth's surface
- But around 50% of world population now lives in urban areas
- Urban areas contribute about 75% of global CO₂ emissions
- City-level activities, commitments and collaborations are on the rise (ICLEI, C-40, Cool Cities, US Mayors Climate Protection Agreement with over 700 cities, etc.)



Why are cities reducing their carbon emissions?

- Local dimension (reframing from global)
 - Serious impacts expected, as 80% of urban areas are coastal
 - Climate and other environmental problems can be addressed jointly
 - Leadership opportunities
 - Opportunity “to grow green technology, to be a centre for renewable energy, to be an economic engine” (interview excerpt)



How are cities reducing their carbon emissions?

- Focus on what the city has under its control
 - Los Angeles:
 - Climate Action Plan (35% reduction of 1990 levels by 2030)
 - LA Department of Water and Power - decentralisation of power (20% by 2010 and 35% by 2020) and reduction of water consumption (recycled water, storm water)
 - Green buildings policies
 - Greening LA Airports (to green airport operations)
 - Greening the Port of LA (San Pedro Bay Ports Clean Air Action Plan)
 - London:
 - 60% reduction of 1990 levels by 2025 (but reliant on help from national government)
 - Transport - Congestion charge to reduce road transport
 - Reliant on national and international action to reach its 60% reduction goal by 2025
 - Housing (esp. new build)
 - 25% of electricity from local CHP by 2025



Conclusion

- We have more ambitious emission reduction strategies and targets & timetables at city than at national or international levels.
- The national and international levels are important for the city level in terms of providing direction, principles, goals - the framework for local policies.
- Inaction at national and international levels hampers action at the city level.

Tyndall^oCentre
for Climate Change Research

<http://www.tyndall.ac.uk/>

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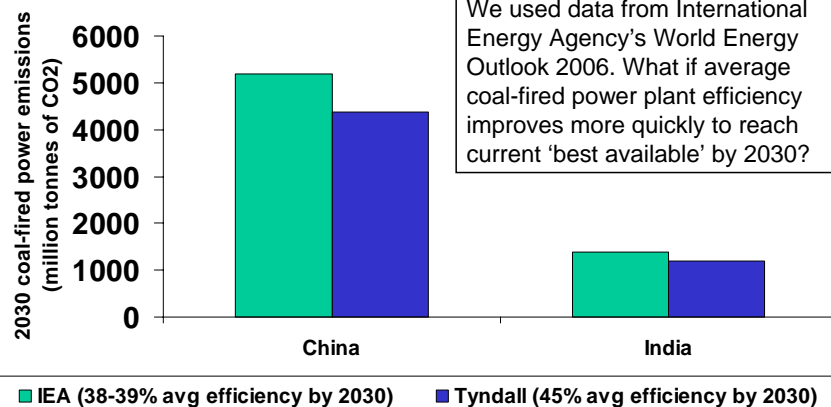
International Development: Research on Low Carbon Technology Transfer (Jim Watson)

- This task aims to assess past experience of low carbon technology transfer and to learn lessons
- Focus on transfer to large developing countries with particular attention on China and India
- Results so far from two specific pieces of work, carried out with co-funding:
 - Gleneagles Dialogue study for Defra & Indian governments on barriers to low carbon technology transfer
 - Background paper on cleaner coal technology transfer for UNDP's 2007 Human Development Report

Sussex Energy Group
SPRU - Science and Technology Policy Research



International Development: UNDP Background Paper on Emissions reductions from power sector



Sussex Energy Group
SPRU - Science and Technology Policy Research





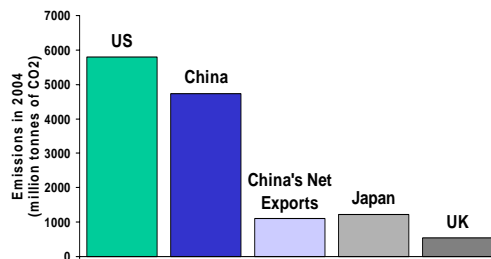
International Development and technology transfer: Findings so far

- One policy does not fit all
- Should include technology transfer from R&D to market as well as between countries and not just capital equipment, but operational skills and deeper knowledge – ‘know why’
- Intellectual Property Rights (IPR) ‘necessary but not sufficient’ for technology transfer. .
- Technological change and capacity building could be enhanced by joint R&D between companies in North and South
- National and international policy environments (incentives, regulations etc) have large impact



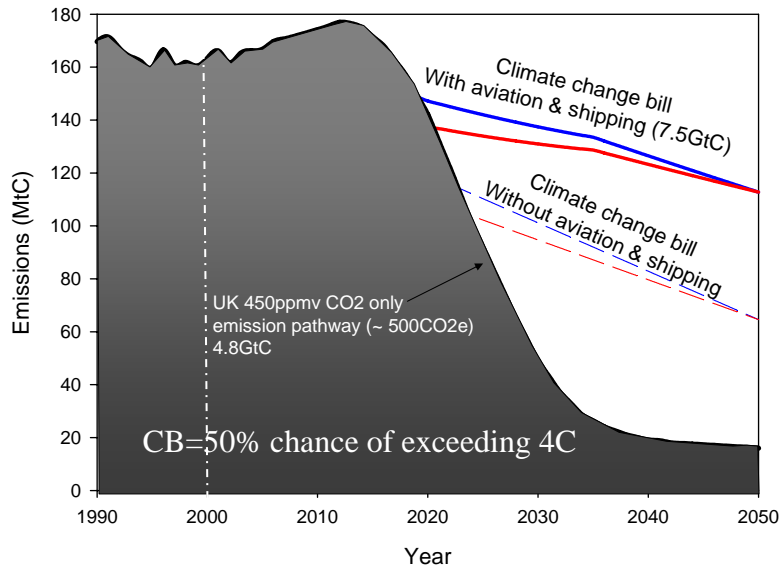
Decarbonisation: China’s emissions and global trade (Wang and Watson 2007)

- Tyndall Centre briefing note published in October 2007: How much of China’s emissions are due to net exports?
- First order analysis with many simplifications. Needs further detailed work to verify results
- Main result: 23% of China’s emissions are due to net exports of goods and services mainly to OECD (using 2004 data)

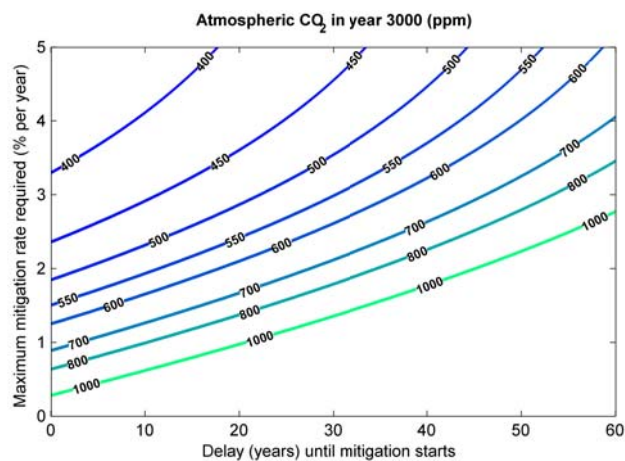




Decarbonisation: Does the UK Climate Bill avoid dangerous climate change? (Kevin Anderson)



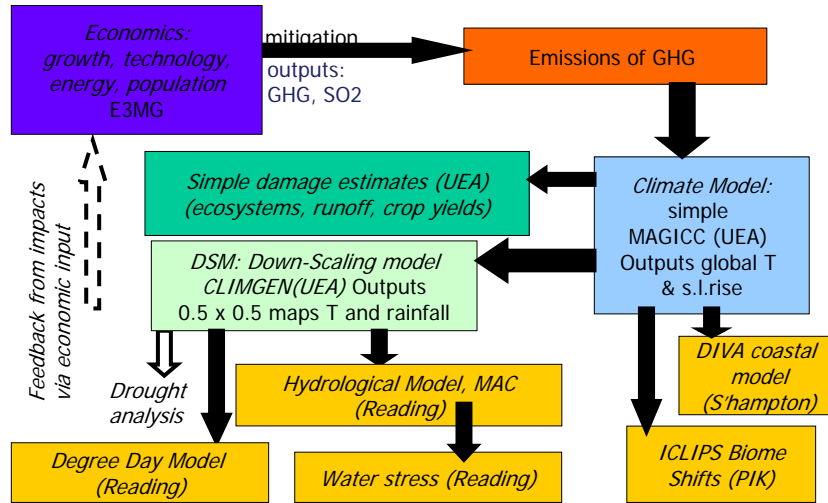
Climate science: Delays make stabilisation harder



Vaughn, Lenton and Shepherd



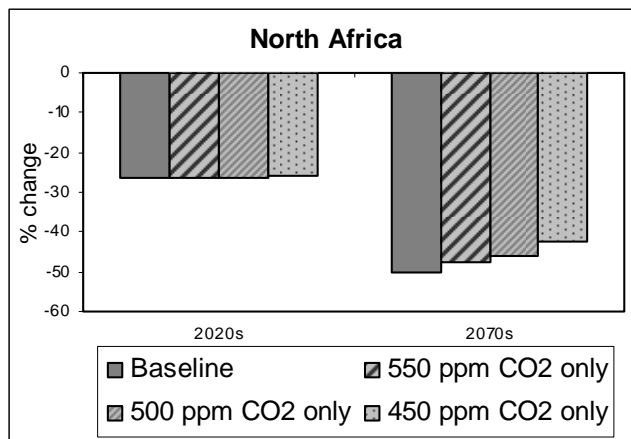
Integrated Models CIAS = Community Integrated Assessment System



Terry Barker and Rachel Warren

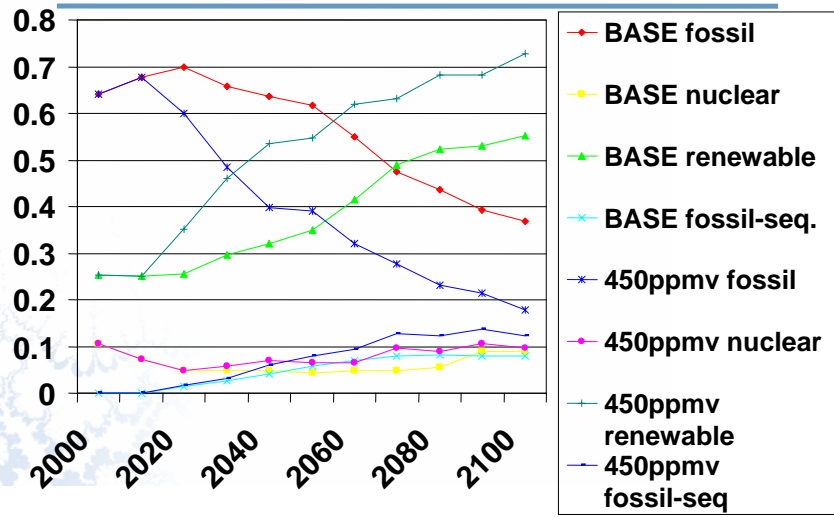


Modelling: Stabilisation at 450ppm reduces runoff declines in North Africa by 10% in 2070





Modeling: Feasible global shifts to decarbonised electricity at 450ppmv (shares)



CIAS: E3MG as a hybrid model: top-down E3 and bottom-up technologies

