

Role of Coal in a climate threatened world

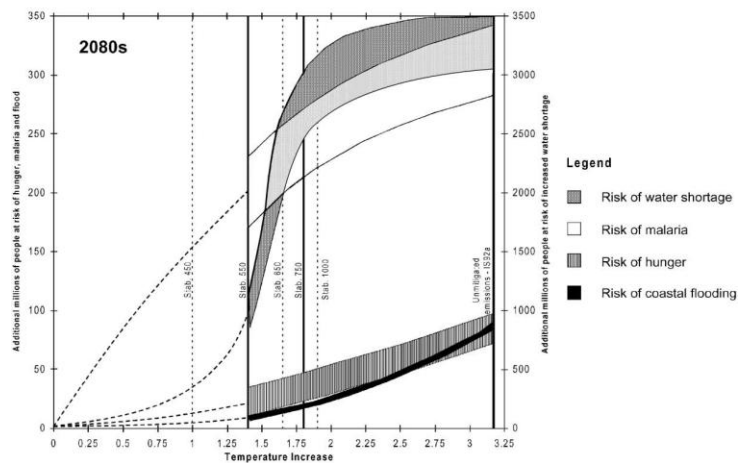
Dr Doug Parr

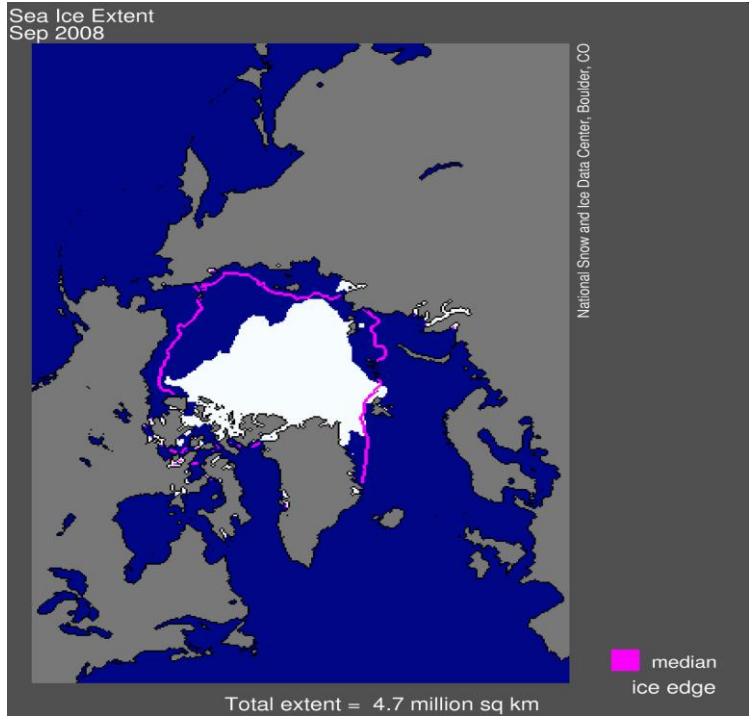
Chief Scientist and Policy Director

24 March 2010



2 degrees slide





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Tyndall emissions projections

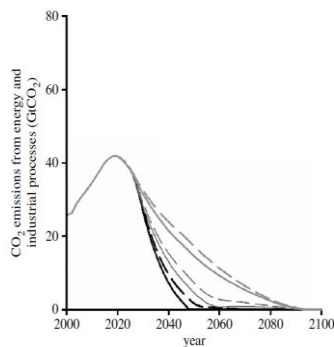


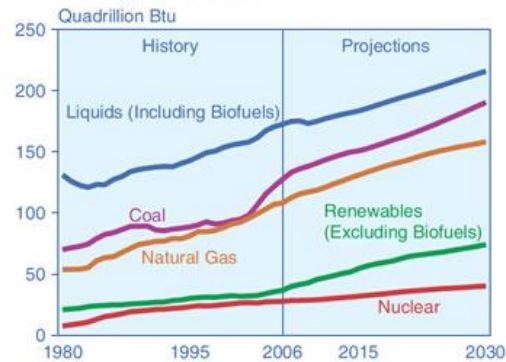
Figure 6. CO₂ emissions derived by removing the non-CO₂ greenhouse gas emissions and deforestation emissions from the total greenhouse gas emissions over the period of 2000-2100 for the AB2 scenarios. Black dashed curve, 7% reduction D_1 ; black solid curve, 7% reduction D_{1f} ; thin grey dashed curve, 5% reduction D_1 ; thin grey solid curve, 5% reduction D_{1f} ; thick grey dashed curve, 3% reduction D_1 ; thick grey solid curve, 3% reduction D_{1f} .

If emissions peak in 2015, stabilization at [roughly 2 deg C] requires subsequent annual reductions of6.5% in energy and process emissions.

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- Half of historic CO2 emitted

Figure 2. World Marketed Energy Use by Fuel Type, 1980-2030



Sources: 2006: Energy Information Administration (EIA), *International Energy Annual 2006* (June-December 2008), web site www.eia.doe.gov/iea. Projections: EIA, *World Energy Projections Plus* (2009).

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Coal-fired power stations are death factories. Close them

The government is expected to give the go-ahead to the coal-burning Kingsnorth power plant. Here, one of the world's foremost climate experts launches an excoriating attack on Britain's long love affair with the most polluting fossil fuel of all

James Hansen
The Observer, Sunday 15 February 2009

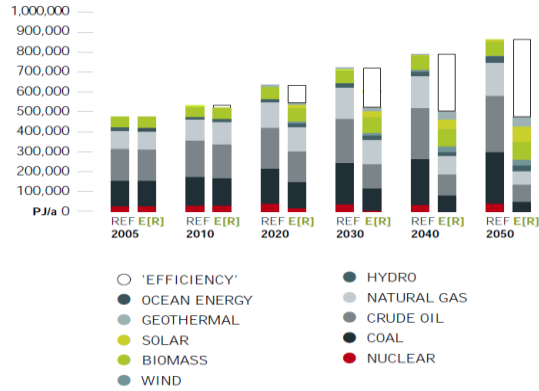
James Hansen is director of Nasa's Goddard Institute for Space Studies

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Energy Revolution

figure 0.1: global: development of primary energy consumption under the two scenarios

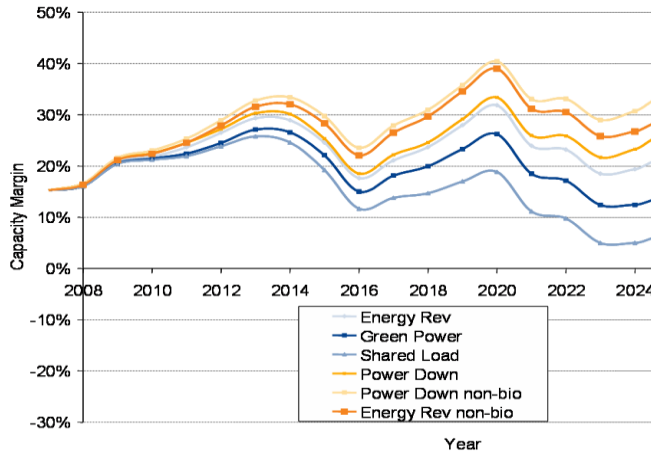
(*'EFFICIENCY' = REDUCTION COMPARED TO THE REFERENCE SCENARIO)



<http://www.energyblueprint.info/>



Power generation in UK – Poyry study



Poyry (pre-recession) found "little or no need for large-scale investment in conventional baseload technology in the period up to 2020" if renewables target is met.



The politics of coal and CCS

- Need CCS for political plausibility not for technical need
- So route-map to climate safety needs to accommodate politics
- What is the best way to deliver this?

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Is CCS the answer?

- All the questions to be answered...
- Delivery dates
- Storage sites and suitability esp in Asia
- Costs
- Capture rates

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- If that can all be dealt with....
- Needs a combination of incentives and regulations to drive rapid innovation

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“Any feasible path to a 80% reduction by 2050 will require the almost total decarbonisation of electricity generation by 2030”

“There is a strong case for buttressing the carbon price lever by establishing a clear and publicly stated expectation that coal-fired power stations will not be able to generate unabated beyond the early 2020s”

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Royal Society

“the government only gives consent to any new coal- fired power station, such as Kingsnorth, on condition that the operating permits are withdrawn if the plant fails to capture 90% of its carbon dioxide emissions by 2020.”



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CCS demo in UK

- What is role of UK internationally? Esp post-Copenhagen?
- Objectives of CCS demos – needs to meet emissions, technology development and speed
- Projects which deliver immediate net reductions in CO₂ from day one.
- Any new combustion plants must meet an Emissions Performance Standard (EPS) of 300gCO₂/kWh.
- Prioritisation of projects which can be in operation quickly (existing stations)
- Storage must not lead to additional net emissions e.g. via EOR

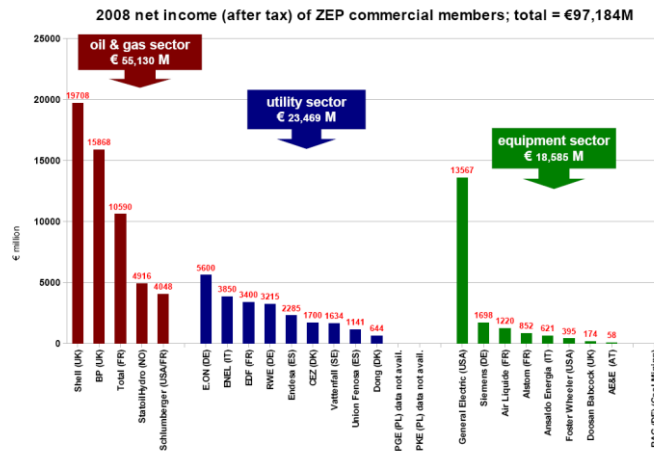
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CCS and EPS

- Prevents lock in to long lived largely unabated high carbon power plants.
- Ensures the delivery of the CCC recommendations regarding the emissions trajectory for coal power plants.
- Establishes a genuinely clear regulatory regime which would guide low carbon investment.
- Demonstrates international leadership on the issue of coal and climate change.



A robust EPS implemented now would also prevent consumer's money from being used to prop up carbon intensive investment made by highly profitable companies.





- Greenpeace Direct Action on Kingsnorth coal-fired power station
- Jury refused to convict and verdict of 'not guilty' on hearing of risks

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Conclusion

- Focus on energy efficiency and renewable targets best
- If coal is felt necessary for political reasons, don't allow distraction from other priorities – single technology bad strategy
- CCS does not make coal 'clean'
- CCS still has barriers to prove it 'works'
- CCS could end up being political cover for new unabated coal
- Best encouragement from CCS is a battery of policy measures including EPS, fair allocation of costs

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