

EXECUTIVE SUMMARY

Carbon Scenarios: Blue Sky Thinking for a Green Future

The Stockholm Network's *Carbon Scenarios* – known as *Kyoto Plus*, *Agree & Ignore* and *Step Change* – describe 3 plausible futures resulting from 3 different approaches to climate policy at the international level. More specifically, they examine the various climatic, economic and social costs – and consequences – of international policy. Worryingly, none of the scenarios provides a policy which achieves climate 'success' as defined by the UK, EU and UN (a greater than 90% chance of no more than 2°C warming above pre-industrial levels). Only one, *Step Change*, even meets the weaker definition of success of a greater than 90% chance of no more than 3°C warming above pre-industrial levels that some in the UK and EU are now considering adopting in recognition of the fact that the 2 degree goal has already been missed. This should provide serious food for thought for environmental policymakers. Summaries of the 3 scenarios follow:

KYOTO PLUS

- This scenario presents one way of achieving a significant level of climate change mitigation, but still falls short of the current UK, EU and UN target.
- It envisages a gradual process of co-operation, leading to a global cap on CO₂ emissions by 2012.
- Global average temperature has a greater than 90% chance of rising by no more than 3.15°C above pre-industrial levels by 2100, and the global economy continues to grow, having successfully absorbed the costs.
- However, long-term temperature may rise further beyond the threshold of 'success' and the cost and complexity of administering a global emissions-trading system remains a long-term drag on growth.



AGREE & IGNORE

- This scenario examines the stages at which the positive momentum described above can stall and backslide, leading to competitive regionalism.
- Global average temperature has a greater than 90% chance of rising by no more than 4.8°C above pre-industrial levels by 2100, leading to a significant likelihood of substantial climate change to 2100 onwards. Moreover, while the initial costs of the global cap are not borne, regional schemes are less efficient.
- Additional costs come from intensifying regional economic competition, including the use of carbon tariffs, and the very sizeable direct economic costs of a changing climate. Concerns about the economy in the short term lead to short-sighted decisions that substantially constrain growth in the long term and lead to serious direct human costs of climate change.



STEP CHANGE

- This scenario looks at the possibility that policy may take a radically different course in response to a step change in concern about climate change, which leads to the adoption of an entirely new policy framework – a global production cap.
- This scenario shows the least climate change, with global average temperature having a greater than 90% chance of rising by no more



than 2.85°C above pre-industrial levels by 2100. As such, it is the only scenario that avoids crossing the 3°C threshold.

- Initial costs are higher than in the other two scenarios, but the global economy sees the highest overall long-term growth due to the efficiency of the scheme, showing that a market-oriented system that focuses on the efficient allocation of carbon rather than a smorgasbord of specific sectoral policies offers the best chance of both avoiding severe climate change and maintaining economic growth while cutting emissions.

We invite readers to draw their own conclusions and use these scenarios as the basis for their own analysis. However, 3 lessons that stand out for us as critical for successfully addressing climate change are as follows:

The failure to achieve ‘success’ as defined by the UK, EU and UN: None of our scenarios has a greater than 90% chance of not going above the 2°C ceiling currently seen as the basis for climate ‘success.’ Policymakers must think seriously about adaptation to climate change now, as some degree of adaptation will be necessary, regardless of the scenario. While none of the scenarios meet the 2°C target, only *Step Change* meets the weaker 3°C target. The horse has bolted, but scope remains to contain the greatest damage via innovative and efficient policy.

The risks in the UNFCCC process: The current thrust of policy, although it may lead to significant climate change mitigation, is fraught with possibilities for backsliding, delay and inefficiency, as it relies on all the world’s countries moving forward slowly together. While this does not mean that this process cannot bring about significant climate change mitigation, it does mean that there are great policy risks involved.

The importance of wealth transfer: Although the developed world is responsible for the bulk of past carbon emissions, the bulk of future emissions will come from the developing world, especially its most dynamic economies. It is therefore crucial that the developing world is assisted with obtaining clean technologies. Furthermore, as at least in the short term, the bulk of the costs of a changing climate will fall on developing countries, financial assistance must be provided for allowing adequate adaptation.

For the full report please visit:

<http://www.stockholm-network.org/Conferences-and-Programmes/Energy-and-Environment/carbonscenarios>

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Notes to Editors:

The Stockholm Network is the leading pan-European think tank and market-oriented network. It conducts research in the fields of energy & environment, health & welfare, intellectual property & competition, and offers a unique network of 130 + market-oriented think tanks across Europe. www.stockholm-network.org

Using emissions modelling done by the Stockholm Network on the basis of IEA Reference and Alternative Policy Scenario emissions models, the Met Office Hadley Centre used a simple climate model to project likely temperature rises to 2100 for all three scenarios. It is important to note that the emissions modelling was done by the Stockholm Network. The Met Office Hadley Centre’s role was to convert the emissions into climate scenarios. The Met Office does not prefer any particular scenario or advocate any particular set of future emissions.