

To Stern Report
DATE 11th March 2006
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Submission to

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Introduction

There are two comments we wish to make in response to the material submitted for the Committee's "Call for Evidence" in December 2005¹, in your Report of 31st January 2006², the lecture by Sir Nicholas Stern in Oxford³ in January 2006 and the January 2006 Transport seminar.

The **first** comment is, communicate using accessible examples and second, anchor the conclusions using historical precedent.

We wish to ask that the Report uses simple and clearly understood examples in communicating why we have excessive CO2 pollution and how different outcomes can be measured and delivered in fair and efficient ways. We come across fundamental misunderstandings that economics can illuminate by many professionals including engineers, architects, academics, local authority officers and politicians that create significant barriers to support efficient and fair outcomes for clients and citizens.

These barriers are only natural in a society where the benefits of specialization of labour are traded off against the transaction costs of cross-disciplinary communications. The report could lower transaction costs by communicating to the most, in the least time, in ways that relate to their everyday lives. Whilst we acknowledge the need to support a political and civil servant audience at international level, there will be much to be gained from a report that offers those seeking to pursue localized approaches to the challenge of forced global warming, a framework for responsible and informed decision making.

Second, contemporary Economics has an intellectual and legacy base that once understood by the most in the least time, can support responsible dialogue and decision making. In the context of lowering transaction costs and creating fairer futures, economical thinking will be highly relevant in anchoring opportunities for negotiations and responsible decisions. What is the thinking and where is it rooted?

We understand that your approach is supported by Game Theory and we agree this has much to offer bargaining agents on the international stage. However, strategies played many times with conventions and expectations that increase each actor's confidence that others will act reliably at the localised level can equally increase levels of fairness, efficiency and lead to stable equilibria. There is a

¹ HM Treasury web site, http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_respon ses.cfm. Dec. 2005.

² What is the Economics of Climate Change, The Stern Review, 31 Jan. 2006. Discussion Paper. HM Treasury web site

³ Sir Nicholas Stern, Oxonia_Lecture_Notes, Oxford 31 Jan 2006. HM Treasury web site

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real risk that over time those on the international stage will act in status seeking and rent seeking ways especially if enforcement is poor and legacy infrastructure and institutions take a long time to adapt. The report would do well to acknowledge these risks (in more careful language) and provide alternative options for localized choices⁴.

1.0 Responses

1.1 Improvements in the Report's supporting structure

Your reports so far and the lecture appears on examination to omit insights from eight Economists that would be highly useful in understanding excessive Carbon Dioxide pollution, hurdles to beneficial outcomes, perception of risks and measurable risks. In parallel with Nash - Marshall, Pareto, Coase, Marshall, Heyek and Tversky and Kahneman gave unique insights into understanding how an economical approach could support a range of outcomes to resolve the challenge of human forced global warming over time. For example, their work illustrates where a political, technological and social outcome would need to be a Marshallian improvement, a fair social contract with Pareto principles or a Coasian negotiation or a mixture of all three?

Nash is identified through the Game Theory approach and Coase gets a cursory mention in the Report, even though his work highlights how an economic approach could evaluate the optimum amount of pollution to maximize the value of production^{5,6}. Pareto is not mentioned, neither is Marshall or Hayek and even though Tversky and Kahneman changed a landscape of Behavioral Economics, they get no mention either. The Report team would be wise to develop the academic base on which policy and market outcomes will arise to allow the verification of future political outcomes against scientific objectives.

We feel that unless the report clearly highlights how "Game Theory" supports efficient, internally stable and fair⁷ outcomes (given the other alternatives), in local, regional and national circumstances, there will remain questions over the usefulness of the report. For example, the Report would need to demonstrate, given the urgency of the scientific advice (Royal Society et al), what mix of social, technological, institutional or financial approaches are needed to support fair outcomes and how.

1.2 Further research and analysis

We believe that the report would have the most value if it presents a range of technological, social, institutional and economic options for further discussion and research over a timetable between now 2006 and 2008. The timetable would be useful in identifying the scope and detail of academic research and funding to support Kyoto II negotiations between 2008 and 2012. If the research could tie in with the Government's Energy Review, 2006, this would show a coordinated scientific, political and economic approach is being carried out for future energy consumption, unsustainable pollution and supply risks.

⁴ For example, covenants, contracts and best practice design with relevant information

⁵ Roland Coase. The Problem of Social Cost, *The Journal of Law and Economics* 1960. P.25

⁶ To make the jump from Pigou's to Coase to Game Theory your paper would need to set out a Coasian interpretation of the Tragedy of the Commons with that of Pigou's and Binmore's critical interpretation of Coasian weaknesses, *Natural Justice*, 2005. P.190 and Binmore, British Academy lecture. London. 28.Feb 2006.

⁷ Binmore, *Natural Justice*. 2005. P5

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1.3 Accessibility supported by examples and graphic explanation

To be accessible, useful and the best for the most in least time, the report needs to be written in an academic way and also illustrated with examples of economic concepts the untrained reader can relate to. We believe that if the report can communicate in diagrams, drawings and map based methods this will support a high degree of accessibility. The concept of externalities, marginal change, fairness, game theory etc are meaningless except to the highly specialized reader, even more so if diagrams⁸ or maps are not used. For example, the origination of game theory, micro-economic and behavioral-economic thinking is nearly always based on intimate social observation. The concept of negative externalities is available to anyone who shares a house with a partner or has noisy neighbours!

A very high percentage of people we interact with in the sustainability, local government, property and construction sectors have only a fleeting glimpse of the tools and structured approaches economics can bring to everyday design challenges. If the report could communicate how the following sub subject areas are relevant to resources use, pollution and fairness this would improve accessibility and usefulness of the report no end. Macro economics, Micro-economics, Econometrics and Behavioural Economics are the most relevant subjects to refer to. Stigler wrote of the weakness of cross disciplinary understandings and work in 1962, as did Le Corbusier in the Athens Charter in 1933⁹. Their insights are still relevant today.

*Many people fear economics because they fear capitalism—a concern we have tried to put to rest—and don't understand what economists do. "It is a fact painful to record," writes George Stigler, "that the level of economic literacy has not risen noticeably in the twentieth century."*¹⁰

1.4 Negative or Pecuniary externalities

Using the best information available the report needs to identify if scenario outcomes are negative, or if there are pecuniary externalities, or indeed a global rise in temperature capped with best risk assessments at 2 -3 3 degC is positive for society and ecology. For example, a 2 deg C rise in UK average temperatures leads to around a 20% reduction in UK heating demand and a marginal increase in air conditioning and other adaptive measures on peak load days. What are the costs and benefits at the point of CO₂ stabilisation?

Growing seasons could be improved for vast swathes of Canada, USA and Russian plains, and desertification is a real risk in many other parts of the world. Are these impacts and opportunities balanced out or are there a worse quantifiable negative impacts, and where? The use of maps would be very useful to communicate visually the anticipated impacts and opportunities.

Urbanization patterns indicate that 65% of the world's population will be based in cities by 2030. Maps would be very useful in explaining your analysis of marginal impacts and they would be useful in communicating how local externalities will

⁸ For examples, see Edward de Bono, The Greatest Thinkers, Wiedenfeld and Nicholson Ltd. 1976

⁹ Charter published by Congrès International d'Architecture Moderne. In 1933. Le Corbusier called for a variety of professionals to be involved in social urban decisions, including Architect, Town Planners, Politicians, Economists and Sociologists.

¹⁰ George J. Stigler, "The Intellectual and the Market Place," Occasional Paper #1, Institute for Economic Affairs, 1963 (London); address by Stigler to the student body of Carlton College, Northfield, Minn., November 1962, p.11.

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probably be the predominate cost for the most with the least. If you could put the negative externalities of CO₂ pollution into context with rapidly increasing local externalities, I think this would be highly useful in “framing” the right balance of investment priorities in the future.

1.5 Who suffers unfairly, definitions of fairness?

We support the documentation in concluding so far that fairness is a core issue in existing circumstances and future outcomes. There is no definition of “fairness” given in the work so far nor is a framework for reference suggested. Clearly some work is needed here. Will you be using a Pareto assessment of “fair” or suggest Marshallian improvements, or both? Fairness differs from society to society¹¹ and how do you accommodate differences? We believe there are some straightforward definitions and choices the report needs to highlight and without these ambiguity and indifference will prevail.

1.6 Opportunities and limits of taxation and regulation

The evidence from Game Theory suggests that Pigouvian taxation would be useful in some local circumstances as would regulation in creating fair and efficient outcomes. However, by setting a priority on a “game outcome” the report would need to demonstrate how and why taxation or regulation is the lowest social and ecological cost solution in anything but selective environments. The theory supports an understanding that centralized enforcement supports inefficient and unfair outcomes with the opportunity costs being paid by the vulnerable and ecology.

The question remains, is the burden of proof on the report team to highlight in what circumstances taxation is the best option or is further research needed? How does the report demonstrate in a transparent way the fairest policy choices rather than choices made for political expediency and status seeking opportunities? Is the likely outcome the best practical choice, within the time constraint set by the science, between an inefficient market and an efficient government solution or a variety of inefficient alternatives, private and governmental? What are these? For example, what is the baseline cost of implementing clean carbon scrubbing on all UK gas and coal power stations, who pays for it and when? Historically societies have managed pollution at the point of emission¹², why is the present challenge any different?

1.7 The significance of Price in efficiency and co-ordination

It seems that the primary role of the Report is to get a political framework in place such that pricing (allocation) and distribution systems fairly reflect harmful CO₂ emissions locally, nationally and internationally. The primary objective is we believe to identify the most effective and lowest social and environmentally sustainable way forward. If the report responds to Hayek’s understanding of the relevance of price and equally divided knowledge in the context of fairness and efficiency norms, we believe price can have a stronger

¹¹ Ken Binmore, Natural Justice, p. 15. Oxford University Press, 2005

¹² Burning wood in London, wooden cobbles in C19th roads (noise pollution), WC systems and sewerage drainage, car catalytic converters.

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role in local choices about social and technological adaptations to CO₂ pollution. Fair prices for goods and energy would assist the construction sector greatly in reducing administration costs and form filling that accompany many sustainable checklists¹³. Further, it will be easier to integrate the present methods into existing accountancy and reporting systems for owners, shareholders and Planners.

To this effect we are reminded of Friedirk Heyek's¹⁴ observation that *"the price system is just one of those formations which man has learnt to use (though he is still very far from having learnt to make the best use of it) after he stumbled on it without understanding it. Though it is not only a division of labour but also a co-ordinated utilization of resources based on equally divided knowledge has become possible"*¹⁵

1.8 Historical precedent will make the report more accessible

We believe a section of the report could frame the issues and recommendations by illustrating previous examples of social and technological solutions to negative externalities. You acknowledge that there are a number of academics with relevant research and their work would be useful to frame the report.

We illustrate this suggestion with one salient example. The Magna Carta can be interpreted as social framework to resolve negative externalities. It would be a highly relevant example to frame and reinforce the significance of conflict resolution and the duties of land stewardship that form incentives for negotiating and practicing agents. For example, Section 5 is the basis for understanding what a sustainable future is.

(5) For so long as a guardian has guardianship of such land, he shall maintain the houses, parks, fish preserves, ponds, mills, and everything else pertaining to it, from the revenues of the land itself. When the heir comes of age, he shall restore the whole land to him, stocked with plough teams and such implements of husbandry as the season demands and the revenues from the land can reasonably bear¹⁶.

If we look at a recent example to explore a lack of expressed knowledge of historical precedent the review panel could read Lord May's address to the Royal Society in November 2005, who concluded with clarity:

Ahead of us lie dangerous times. There are serious problems that derive from the realities of the external world: climate change, loss of biological diversity, new and re-emerging diseases, and more. Many of these threats are not immediate, yet their nonlinear character is such that we need to be acting today. And we have no evolutionary experience of acting on behalf of a distant future; we even lack basic understanding of important aspects of our own institutions and societies¹⁷.

We know of countless examples of externality challenges acting on behalf of distant futures as well as effective, fair and efficient solutions. Examples of social weaknesses supporting unsustainable outcomes¹⁸ that were overcome by

¹³ For example, the UK's BREEAM method, see <http://www.breeam.com/>

¹⁴ Hayek, The use of Knowledge in Society. 1945.

¹⁵ Ibid, H.26

¹⁶ British Museum web site, <http://www.bl.uk/treasures/magnacarta/translation.html>

¹⁷ Lord May of Oxford. Threats to Tomorrow's World. Royal Society. 30 November 2005. P.23

¹⁸ Stern Review discussion paper, 31 Jan. 2006. P.19

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adaptive behavior include drains in houses in Skara Brae between 3200 BC and 2200 BC, The Gortyna Code in Crete, The Magna Carta ¹⁹, Bazalgette's sewers in mid Victorian London, SO₂/Acid rain pollutin, UK Building Regulations and Planning System and London's clean air legislation over hundreds of years. Clearly some are social, some technological. What is the best mix of solutions that citizens, scientists and politicians can understand in a meaningful context?

2.0 Conclusion

Clearly there are some excellent examples of how to overcome the impacts of externalities created by status effects, biological competition, poor information, high transaction costs, complexity and geographical scale. In the context of the Stern Report outcomes will be market based, some regulatory, some legal, some tax based.

Lessons from the past are that solutions imposed centrally and with higher than bearable social and environmental impacts are unsustainable within the adaptive constraint of time. We believe that the test of the report's success will be how it identifies and communicates, both visually and in writing, the means by which local and regional solutions can be fairly and efficiently implemented over different timescales.

Different constraints are decisive for different situations, but the most fundamental constraint is limited time. Economic and medical progress have greatly increased length of life, but not the physical flow of time itself, which always restricts everyone to twenty-four hours per day. So while goods and services have expended enormously in rich countries, the total time available to consume has not.²⁰

We look forward to the publication of the Stern Report in 2006 and if there are any interim reports we would be delighted to support your work with further comments and feedback in relation to the design, architecture, planning and construction sectors.

¹⁹ Both France and England thus opted for a system that was more efficient for each country at the time. In fact, we argue that the English Magna Carta was a Coasian bargain supporting the efficient outcome. Legal Origins Edward L. Glaeser Department of Economics, Harvard University Andrei Shleifer* Department of Economics, Harvard University December 2001

²⁰ Gary Becker, Nobel Prize speech. Stockholm. 1992. P.1