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BOOK REVIEWS

Greenhouse Economics: Value and Ethics

By Clive Spash, Routledge, London, New York, 2002. 298 pp.; ISBN 0-415-12718-1

Global climate change, along with the related issue of worldwide biodiversity loss, is the major environmental concern of the 21st century. Clive Spash's book not only presents a scientifically rigorous and balanced account of the enhanced greenhouse effect as a physical phenomenon, it is also the best exposition to date on the political economy of climate policy. The standard welfare economic approach to climate change is fairly presented and its irrelevance as a policy guide is clearly shown. In *Greenhouse Economics*, climate change modeling and policy is examined using contemporary economic theory as well as insights from disciplines as diverse as environmental ethics and probability theory. The book is well-organized with helpful aids such as a list of acronyms at the front and a glossary at the back.

The first two chapters present the history of climate change as an international policy concern. These chapters present a wealth of information about the landmarks in our understanding of climate change, from a 1827 article by Fourier to the assessment reports of the Intergovernmental Panel on Climate Change (IPCC). Information about the mechanisms of climate change and the contributions of the major greenhouse gases is clearly and concisely presented.

Chapter three discusses the regional and temporal effects of climate change. This chapter emphasizes discontinuous effects on regions, by latitude, and through time. The careful presentation of current data and the discussion of areas of uncertainty keeps the material in the chapter fresh in spite of the rapid flow of information about specific climate-related phenomena. For example, in a discussion on the Larsen ice shelf Spash points out that after a retreat beyond a certain point ice

shelves may disintegrate rapidly. As I was writing this review an article appeared in *Science* (De Angelis and Skvarca, 2003) citing new evidence suggesting that the disintegration of the Larsen B shelf may trigger a glacier surge causing a substantial increase in sea levels worldwide. This gives credence to Spash's emphasis on uncertainty and discontinuous change.

Chapters four and five discuss risk and imperfect information (dubbed weak uncertainty) versus ignorance and indeterminacy (dubbed strong uncertainty). Standard climate models assume weak uncertainty, and these models are analyzed in chapter four. The discussion includes examples of the misuse of the probability density function and the use of averages, which obscure the importance of variability, threshold effects and critical values. The discussion of the much-maligned Nordhaus optimization model is excellent. Chapter five carries the discussion into the realm of Keynesian uncertainty using the examples of agricultural impacts, sea level rise, forced migration, and catastrophic surprise. The chapter ends with a discussion of "post-normal" science (Funtowicz and Ravetz, 1993) characterized by strong uncertainty together with very serious consequences of making wrong decisions.

Chapters six and seven discuss the economics, values and ethics of the leading climate change models including those of Nordhaus, Manne and Richels, Cline, and Fankhauser. The theoretical difficulties inherent in the welfare economics foundation of cost-benefit analysis are clearly presented. The ethical questions inherent in the climate change debate are nowhere more apparent than in the various attempts to value the loss of human lives in developed and undeveloped countries. Whether economists use willingness-to-pay or lifetime earnings, the value of an American or European life is worth several times that of an African, Indian or Chinese. Questions of value

necessarily involve ethics and interpersonal comparisons of well-being.

Chapter eight presents the economic rationale for discounting the future and discusses the problems with using a private discount rate to make social decisions about the future. The issue of discounting leads naturally into the discussion of ethics and future generations presented in chapter nine. Various inter-generational ethical rules are discussed including utilitarian, egalitarian, elitist, and Paretian approaches. The book ends with a summary of the major issues involved in the science, economics and policy of global climate change.

Greenhouse Economics is a model of interdisciplinary scholarship. It would be an excellent text for a class on greenhouse policy or a supplement for a course in environmental economics or environmental science. Many of the chapters are suitable for stand-alone introductions to the most important topics in environmental valuation including discounting, cost-benefit analysis, and the treatment of risk and uncertainty. Global climate change is only one of many long-term consequences of the human domination of planet earth. The issues raised in this book are relevant to a wide variety of environmental problems such as biodiversity loss and unsustainable resource use. The book is essential reading not only for ecological and environmental economists, but also for anyone interested in developing realistic alternatives to the standard neoclassical welfare model.

References

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Dead Heat: Global Justice and Global Warming

By Tom Athanasiou, Paul Baer, Seven Stories Press, New York, NY, 2002. 173 pp.; ISBN 1-58322-477-7

This short book provides a compelling, urgent and unabashedly blunt argument for a climate protection treaty on the scale of a global Marshall Plan. The authors postulate that an equal emissions rights based climate regime will be the lynchpin to a series of battles over global common property resources. While their main proposal—that an equal human right to emit greenhouse gases is the only fair and effective basis for cutting emissions in the long run—has been around for over a decade, it has rarely been argued so forcefully.

The book has ten brief chapters, plus a list of climate equity-related groups and websites. There is a logical progression from the science including average temperature change targets and global emissions budgets to a discussion of social justice, North–South differences and perspectives, emissions trading and development funds (which are dismissed as hidden taxes) and globalization. The penultimate chapter sketches three scenarios: “business as usual”, where the world barely holds together; “barbarism and the fortress world”, with severely strained institutions and ecosystems, hopelessness and warfare; and “the great transformation”, which will require enormous reforms of political and economic institutions, plus widespread recognition that humanity must truly live within its ecological and social limits. The authors close the book by arguing that the atmosphere should rightfully be treated as a global commons, controlled by new practices and institutions. However, this designation should be made as regulated common property, not as unregulated, open-access private property.

Dead Heat succeeds in presenting a clear and convincing case for a climate treaty based on equal emissions rights as the best (and perhaps only) way to build upon the requirements of the Kyoto Protocol. The book is well written, although its casual, advocacy style will not be for everyone. Indeed, with all that has been written on global warming science and policy in the past 15 years,