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The Science and Politics of Global Climate Change: A Guide to the Debate (second edition)

By Andrew Dessler and Edward A. Parson,
Cambridge University Press, 2010,
211 pages, ISBN 978-0-521-73740-1,
Paperback \$33, Kindle \$29, US.

REVIEWED BY D. JAMES BAKER

The quantity 350 ppm has become an iconic number for the safe upper level of concentration of CO₂ in the atmosphere, promoted widely by environmentalists, scientists, and policymakers. But the simplistic focus on a single number, no matter how laudable for ease of communication, clouds the reality of the scientific complexity and the enormous political challenge of re-engineering the world's energy supply.

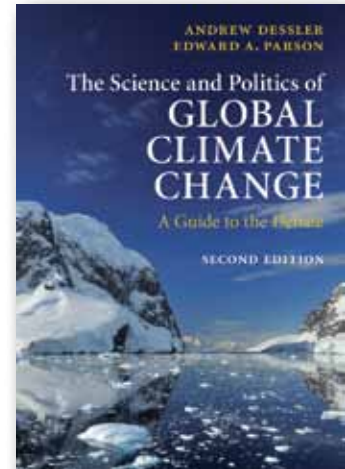
Thus, it's important to have books like the one under review and others that expand on these points. The Intergovernmental Panel on Climate Change (IPCC) assessments, the Stern Report, and scores of other recent books by experts provide detail on the science, policy, and economics of climate change. Dessler and Parson's refined second edition offers one of the best summary backgrounds of this complex topic now available. They carefully describe what we know about the science of climate change, and why we can make some overall global forecasts with confidence. And they underscore that there is much that we don't know—for example, that the kind of regional to local forecasts most useful to policymakers are, in fact, the most uncertain.

The authors bring impressive credentials to their task—Andrew Dessler has a long list of publications in atmospheric

science with a focus on ozone, and Edward Parsons brings equally strong credentials from the policy analysis world. Both have worked with the White House Office of Science and Technology Policy, so have a practical knowledge of the science/policy interface. This understanding is evident throughout the book in its organization and explanations.

The science of greenhouse-gas-induced climate change is a challenging problem that in the normal course of events would, like any other frontier science issue, have a range of scientific views, from the enthusiasts to the highly skeptical, all in the context of a scientific debate. But, as the authors note on page 3: "Because the potential risks of climate change are so serious, and the fossil fuels that contribute to it are so important to the world economy, we would expect to hear strong opposing views over what to do about climate change." They go on to note that "even given the issue's high stakes, the number and intensity of contradictory claims advanced about climate change is extreme." Then they provide some very nice summaries of the deniers' arguments and show how they rest on weak premises. The book is worth it just for these concise short explanations.

In structure, the book starts with a short scientific primer, followed by a background summary on climate change policy. Chapter 2 focuses on science, politics, and science in politics, using the authors' experience of the ozone issue as a guide. Chapter 3 outlines the present state of scientific knowledge and



uncertainties of human-induced climate change. This discussion is presented clearly, and culminates in Figure 3.12, which shows, to the best of current knowledge, why since the 1970s the temperature rise is consistent with CO₂ warming. Chapter 4 covers impacts, mitigation, and adaptation.

For those interested in how society can deal with this problem, the real meat of the book—and also its major shortcomings—come in Chapter 5 on the state of climate policy. Section 5.2 provides an insightful analysis of climate-change politics and another succinct summary of why the remaining arguments against action are weak. But I think the authors go too far when they assert that IPCC "may not be speaking clearly enough on points of high policy significance." The fact is that IPCC was designed to be a scientific body, and in my view the panel is actually doing its job correctly here, by not asserting confidence in areas where there is little confidence. In his recent book *The Climate Fix* (Basic Books, 2010), Roger Pielke Jr. explores this issue in detail, providing an insightful summary about how such poorly based assertions can lead to bad policy. Pielke's book is worth reading on this topic

because it shows the risks of simplifying science for policymakers.

Dessler and Parson are on even weaker ground when they suggest “a substantial departure from recent practice” with a first priority for near-term action being the “announcement of a coherent, effective mitigation strategy by the United States, matching or surpassing the climate leadership thus far exercised by the EU.” Unfortunately, events over the past 15 years make it clear that the United States is far from having anything like a coherent, effective mitigation strategy, and whether it will ever do so is doubtful. Any strategy that depends on US leadership in this area is doomed to fail—at least in the foreseeable future.

Some interesting and useful insights into the difficulties that the United States has in shaping climate policy can be found in Eric Pooley’s recent book, *The Climate War: True Believers, Power Brokers, and the Fight to Save the Earth* (Hyperion, 2010). Pooley spent three years with the major advocates for a climate bill, and shows in detail why the latest push failed. In this most recent case, a remarkable coalition of environmental and energy representatives came close to overcoming Senate objections to a climate bill, but lost partly because of internal divisions but mainly because the White House wanted to focus on a health bill. Now, with a Republican majority in the House, it’s highly unlikely that there will be any action on climate from the United States in the near term.

To give the authors some credit, their proposal for next steps, where “serious near-term action should be pursued through some smaller forum, in which there are no bystanders: those

participating and shaping actions are the same as those undertaking actions” is not an unreasonable plan. As the authors note, both the George W. Bush and Obama Administrations have supported this course of action. The results at the latest meeting of the UN Framework Convention on Climate Change in December 2010 in Cancún, Mexico, are consistent with smaller groups coming together for the kind of linked climate and energy commitments to form the core of a global climate negotiation that the authors call for. So, some small progress is being made.

But, in the end, I believe that the basic time constraints of energy infrastructure capital turnover will be the driver for how society will respond to this global issue. Even though the authors are aware of the issue—on the very first page of the preface to the second edition, they state that “the basic dynamics of capital turnover and technological change operate over decades”—they have an overoptimistic view of how policy changes could reduce this turnover time. The best detailed analysis of energy shifts over time has been done by Vaclav Smil—his latest book, *Energy Transitions: History, Requirements, Prospects* (Praeger Publishers, 2010), documents the inherently gradual nature of fundamental shifts in using primary energy resources. Pielke (cited earlier) gives an insightful summary into how decarbonization actually takes place.

The fact we have to face is that we are adding greenhouse gases at a rate that is causing climate change faster than we can change our energy supplies from greenhouse-gas-emitting to carbon-neutral. It is wildly improbable that nations will come together, act, and put

massive investments into energy infrastructure to speed up this change. It is much more likely that in a few decades we will live in an atmosphere somewhere between 600 and 1000 ppm of greenhouse gases. Certainly, we should continue all the mitigation, carbon sequestration, and carbon-free energy development that is feasible, and maybe there will be the bio-engineered super carbon-eating trees that Freeman Dyson suggests (“The Question of Global Warming,” *NY Review of Books*, June 12, 2008). But overall, the case seems clear: society must learn to adapt and do what geo-engineering seems sensible—I would call this the “realistic” approach.

This realistic view is now being explored by a number of authors. One recent good exposition is by Stewart Brand of *Whole Earth Catalog* fame; his *Whole Earth Discipline: An Ecopragmatist Manifesto* (Viking, 2009) tries to bring together climate change, urbanization, and biotechnology—recognizing the inevitable changes to the planet by global warming, and what can be done. Another is Bill McKibben’s *Eaarth: Making a Life on a Tough New Planet* (Times Books/Henry Holt, 2010). McKibben subtitles his book: “A guide to living on a fundamentally altered planet.” He, like Brand, understands that society’s ability to curb emissions in the short term is limited.

With an altered atmosphere, we’ll see many losers, some winners, but all of us will live in a fundamentally changed environment. The focus must be on adaptation.

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