

BOOK REVIEWS

The Citizen's Guide to Climate Success, by Mark Jaccard. (Cambridge University Press, 2020). 295 pages, ISBN 978-1-108-74266-5 (paperback), ISBN 978-1-108-74266-5 (online open access pdf)

In this book Mark Jaccard attempts to fill an important gap in the literature on Climate Change and Climate Change policy. To date, most of that literature fits into two broad categories. (1) Highly technical books and articles dealing with various aspects of the climate science, engineering, or economic issues involved, and (2) Impassioned pleas by either environmental advocates calling for immediate action, or more conservative authors (generally aligned with the fossil fuel industry) cautioning against costly carbon restrictions. Here, by contrast, the author writes a generally non-technical book, which, though advocating strong policies to advance carbon abatement, tries its best to avoid hyperbole in making its arguments. Instead, he calls on his many years of expertise in both climate science and public policy to logically and persuasively argue why certain policies are much more likely to succeed than others, and why some ideas advocated by environmentalists actually run the risk of being counter-productive.

In the opening chapter of the book, Dr. Jaccard briefly summarizes the chapters to come and lays out three of the primary themes that he will return to frequently in making his case. The first of these themes is that human myth making, while useful in building social cohesion, can be manipulated so as to avoid adherence to scientific facts, and that the resulting self-delusion is largely responsible for collective inaction on climate change. Second, if there is to be meaningful climate policies, at the national level they should largely consist of a series of flexible regulatory policies (i.e. flex-regs) specifically designed to eliminate the use of fossil fuels in the energy and transportation sectors. Finally, success at the international level will require compliant developed countries to adopt a carrot and stick approach whereby aid is given to developing countries that adopt “low-emissions technologies” while at the same time punishing “climate laggard countries” by levying tariffs on the carbon content of these countries’ exports.

After a brief description in the second chapter of how the human propensity to cognitive bias can be influenced by self-interested parties such as tobacco companies and fossil fuel interests, Dr. Jaccard proceeds, in the following 10 chapters, to examine the authenticity of “statements reflecting beliefs that are widely held, but range from [being] blatantly wrong to questionable.” In chapter 3 he attempts to debunk various conspiracy theories aimed at climate scientists including the famous so-called “climate gate” controversy and discusses their effectiveness in curbing public support of carbon emissions abatement policy. After reviewing the daunting difficulties involved in coordinating international climate actions in chapter 4 he then turns, in chapter 5, to what he sees as a pervasive problem, namely the threat posed by individual fossil fuel projects in a country or region being approved because they are deemed “essential” to jobs or economic development.

The next two chapters focus on issues which have been heavily examined in the economic literature, carbon pricing, and energy scarcity. In chapter 6 he argues that tools such as carbon taxes, while economically efficient are politically problematic and much harder to enact than flex-regs, while in chapter 7 he presents strong evidence that energy scarcity alone will not limit fossil fuel use sufficiently to curb the effects of climate change. Chapters 8 and 9 examine the effectiveness of policies designed to decrease the demand for fossil fuels through the modification of consumer behavior. These policies include attempts to educate the public to alter their preferences as well as promoting the buying and selling of carbon offsets. To date, he finds that none of these policies have proved to be particularly effective at promoting significant long run change.

In chapters 10, 11, and 12, Dr. Jaccard looks at the efforts by environmentalists to paint their arguments in terms of the profitability of renewable energy, and by social activists to advance

renewable energy as part of their own anti-capitalist agenda. These efforts, he argues, as well meaning as they may be, are likely to be ineffective at best and counter-productive at worst. This is because there is little evidence of any massive cost advantage with renewables and framing arguments in this way gives policymakers little incentive to then actively promote deep de-carbonization legislation. Chapter 13 then concludes the book and summarizes the author's main arguments.

Taken as a whole, the book represents an ambitious undertaking, and Dr. Jaccard is obviously very qualified to write on this subject. Nevertheless, it does have some shortcomings and I have some quibbles with respect to both its form and its content. Although the author makes clear that this is not a technical book *per se* it would, I believe, greatly benefit from more data and numbers to back up its arguments. It would have been helpful, for example, to get some hard figures on the relative (estimated) costs of regulations, flexible regulations, and carbon pricing policies. If it is argued that flex-regs are worth their added efficiency cost because of their political viability, it would be good for the reader to know just how large those extra costs are. Furthermore, since this book covers a great number of topics and is aimed at the general reader, it would be helpful to those readers if the arguments laid out in each chapter were compactly summarized at the end of that chapter, and the main points of the book as a whole were summarized and laid out more clearly at the very end of the book.

That said, this book is a welcome addition to the literature, and I can highly recommend it. It is well written and the arguments it makes are sound, rational, and convincing. The devastating consequences of failing to design policies that are guided by clear thought and scientific evidence have been laid bare by the recent Covid-19 pandemic. One hopes that this failure will not be repeated in the case of climate change and that analyses such as Dr. Jaccard's form the basis for future action.

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Alternative Energy: Political, Economic, and Social Feasibility, second edition by Christopher A. Simon (Rowman & Littlefield, 2020). 256 pages, ISBN: 978-1-5381-1636-4 (hardback). ISBN: 978-1-5381-1637-1 (paperback), ISBN: 978-1-5381-1638-8 (ebook)

Much has changed since the author, who is a Political Science Professor at the University of Utah, wrote the first edition of this book in 2007. Emerging markets, most notably China and India, have continued to emerge. The shale oil and gas revolutions in the U.S. have changed the geological and geopolitical landscape somewhat and have moved near term worries of fossil fuel security onto the back burner. Despite Donald Trump's protestations to the contrary, a U.S. consensus finally seems to be building that climate changes from anthropomorphic emissions of greenhouse gases (dominated by fossil fuel based carbon dioxide) are real, are here, and are now. Costs for solar and wind energy have fallen dramatically. These changes have put alternative energy (here defined as renewables and zero carbon emitting sources) in a much more favorable light. The author lays out some of these changes in his introductory chapter, notes cultural shifts towards more green politics, and summarizes key U.S. legislation relating to alternative fuels since 1973.

Economists, who focus on the efficiency of policies, should find the next two chapters, which focus on making public policy happen, of interest. For infeasible policy is of no use. He outlines the steps in the policy process—setting an agenda, forming the policy, implementation, evaluation, and changing or ending policy. How the process evolves likely depends on such overlapping cycles as election, public attention, budget, and economic. He continues with some description of policy types: distributive, constituent, regulative, and redistributive categorized by the likelihood implementation will require coercion, whether the policy is focused on shaping individual behavior

or providing an environment that facilitates policy implementations and whether the policy is partisan or based on specific special interest groups. Policies can come from state and local governments (bottom up), from the Federal government (top down), or from a collaboration of governments at more than one level. Bottom up policy, supported by Bill Clinton, has the advantage of allowing small scale innovative experimentation at the state and local level. The more successful can then be disseminated to other states or even up to the national level. This theme appears more than once later in the book.

Chapter two concludes with a description of five policy models and examples of their applicability. The institutional analysis and development model, pioneered by Nobel Laureate Elinor Ostrom, focuses on the distribution of shared scarce resources at the local level. The key concepts and evaluation dimensions of this model are outlined. Next, the multi streams model may be appropriate for policy situations with more ambiguity and possibility for different interpretations of the situation. In such a situation, a crisis may be a catalyst to promote policy choice but such choice requires the convergence of three streams: agreement there is a problem requiring government action, enough agreement to enact the policy among elected and appointed government officials, and politics represented by the national mood and pressure groups. The advocacy coalition framework model highlights the need for technical information and the role that policy brokers and their coalitions play in influencing political decisions. Punctuated equilibrium models may also be applicable with periods of relative stability that become punctuated with rapid policy change during crises. With the policy diffusion model, we return to the theme of state and local government experimentation with renewable portfolio standards (adopted by 37 states as of 2018) as an example. The narrative policy framework uses storytelling to explain how and why policy forms and its outcomes.

Chapter 3 focuses on policies to promote alternative energy and fuels as a public policy innovation. It begins with definitions of alternative energy and alternative fuels, which may differ by political jurisdiction. It then provides a useful chronicle of provisions relating to alternate energy in U.S. federal legislation. Despite the perception that the U. S. does not have a coherent climate policy at the federal level, there has been consistent and increasing federal support for alternative energy in major energy legislation since the 1970s. With Biden's election and the change in composition of the U.S. Congress, which happened after the book was published, I expect the former federal trend towards alternative energy is likely to resume at an accelerated pace.

Chapters 4-7 include discussions of alternative energy sources—solar (chapter 4), wind (chapter 5), geothermal (chapter 6), and new fuels including biofuels and fuel cells (chapter 7). We learn what they are, how they work, sample costs for various technologies, some of their advantages, disadvantages, and applications, related legislation, and case studies of successful and innovative policy initiatives. These are my favorite chapters and I especially appreciated the very accessible discussions of fuel technologies including photovoltaic through 3rd generation, solar thermal, wind turbine materials and design, new wind tracking technologies, flash steam geothermal using underground steam, binary systems using underground hot water, and heat pumps. The most appealing parts of chapter 7 on new century fuels were the succinct descriptions of technologies for the following fuel cells: alkaline, direct methanol, molten carbonate, phosphoric acid, and solid oxide.

Public acceptance is an important ingredient to a switch to alternate fuels, which may change as public perceptions of alternate fuels change. What starts out as new-fangled and subject to suspicion may become comfortable and socially acceptable with resistance to further change. After a somewhat confusing discussion that attempts to relate certainty to knowledge and perceived risk to the level of public consent, the author illustrates changing perceptions of two well-established energy sources in chapter 8- hydroelectric and nuclear power. Both were promoted by government with initial strong public consent, only to later fall into disfavor. Simon includes some discussion of how they may come back into favor.

Hydroelectricity has been with us since 1882. The associated dams that provided flood control and electricity were accepted for many decades. The private sector, as well as large federal

projects such as the Tennessee Valley Authority or Bonneville Power Administration, and smaller state and municipal projects were all involved. However, ecology movements in the Pacific Northwest and elsewhere have called attention to hydro dam threats to native fish migration and damage to ecological systems. Suggestions to return hydro to a more favorable light include retrofitting dams in place rather than new hydro projects so as to not further damage the ecosystem. Other water based technologies suggested include storage, micro-hydro run of the river projects, and ocean thermal energy conversion.

Nuclear's fall into disfavor is quite familiar with waste disposal being the most salient issue. Here I appreciated the nice historical overview of U.S. policy failure in providing for waste disposal. Suggestions to reduce the environmental footprint of this low carbon alternative include reprocessing of nuclear fuel to reduce waste and safer nuclear technology such as modular pebble bed reactors.

The book's concluding chapter considers alternative energy policy and the future. Simon lays out some of the principles (sustainable environment and social justice), politics, and U.S. players in the Green New Deal. If and how such a deal will play out will depend on the interplay of political coalitions (greens, liberal democrats, conservatives) along with public opinion. Some attention is given to the affordability and funding of the deal. Economists will be disappointed that only a couple of sentences are devoted to pricing carbon.

I enjoyed this book and believe it is deserving of its award from the American Library Association Winner for Outstanding Academic Title of 2020. It is accessible to a general audience. Parts of the book would also provide nice introductions to alternative fuels and the policy process for a variety of classes related to energy in social science, engineering, and natural science.

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