BOOK REVIEWS

Hacia El Futuro: Energy, Economics and the Environment in 21st Century Mexico, by Maria Eugenia Ibarrarán and Roy Boyd (Dordrecht, The Netherlands: Springer. 2006), 234 pages, ISBN 1-4020-4770-3.

In the study of climate change and energy policy there are major areas of agreement. For example, anthropogenic climate change is a real environmental concern that will affect many future generations. Another major area of agreement is that any fossil-fuel policy, which aims to significantly affect greenhouse gas (GHG) concentrations over the next century, must consider the contributions of the developing world. Crafting constructive global policy requires a careful examination of political and economic impacts in the major developing regions. This book offers a glimpse at understanding the potential impacts for Mexico. Its contributions include an overview of many of the political and economic challenges in Mexico, and a more tangible quantification of the effects in Mexico of a range of potential policies and their interaction with alternative baseline assumptions. In addition to those who might be specifically interested in Mexican policy, the focus on Mexico as a *cas*e *stud*y of climate policy in the developing world will benefit students, researchers, and policy makers interested in understanding and affecting outcomes more broadly in Latin America (and, indeed, other developing regions of the world).

Chapters 1 through 4 of the book offer the reader a coherent introduction to the energy and environmental issues that surround Mexico's future, including the geopolitical context. In Chapter 2 the reader will find a number of useful details that put the science and politics of climate change in perspective. The authors tend to focus on emissions when it is GHG concentrations that are relevant for climate change. The authors often draw a direct link between emissions and climate change, but different emissions trajectories over time can generate the same concentration levels. We most directly measure and control emissions, so the presentation is understandable. I would have felt more comfortable, however, if the distinction between concentrations and emissions were fully explored in the discussion. It is clearly a critical component of efficient policy.

Chapter 3 focuses on the impact of climate change on Mexico. Particularly useful is the descriptive information on land use, and the effects of drought and desertification. Displayed information (figures and tables) are used effectively, and will be valuable for researchers. Similarly, Chapter 4 includes a great deal of useful and well organized descriptive information on Mexico's current, and historic, energy profile. Chapter 4 finishes with a summary of Energy Information Administration (EIA) data on the energy profiles of other major Latin American

countries. I would probably go straight to the EIA if I needed energy information on the other Latin American countries, but I would go straight to this book as a source for Mexico. The data on Mexico is more detailed and from primary sources. In this regard the authors have made a valuable contribution by summarizing and organizing the relevant data for Mexico.

Chapter 5 delves into the basic economic theories relevant to climate change and potential corrective policies. The authors are, perhaps, trying to do too much in this chapter: first, they are introducing basic theories of public and environmental economics; second, they are introducing various policies that might affect the resulting allocation; and finally, they are relating the ideal policies to the geopolitical context of the Kyoto Protocol. For economists the presentation of the theory will not be new, but its relation with the institutional context might be useful for someone new to the study of climate policy. Students new to both climate change policy and environmental economics are likely to get the most out of this chapter. I would suggest that this chapter might serve as a supplement for students who already have a good public or environmental text book in hand, but I would not rely on it as an independent presentation of the theory.

Part Two of the book, starting with Chapter 6, focuses on the general equilibrium simulations. There is a lot of good work here that is valuable as an empirical examination of Mexico's energy future and as a template for others who may want to do subsequent work on Mexico or other countries. Chapter 6 introduces the dynamic general-equilibrium model. Outlining and documenting these complex models is difficult and never fully complete, but the authors do a reasonable job. The basic dynamic structure can be traced back to Lau, Pahlke, and Rutherford's (2002) implementation of an optimal growth model with putty-clay capital. The authors extend this basic macroeconomic structure to include the appropriate aggregate and sectoral details of the Mexican social accounts. The assumed preferences and production technologies are well documented. Parameterizing these nested constant-elasticity-of-substitution activities (and in fact determining the appropriate nesting structure) is a difficult exercise, but the authors seem to make reasonable assumptions, based on some empirical estimates where they can be applied.

One thing that is not exactly clear, to me, is the treatment of international capital flows. Are the transfers in equation (5) p.121 endogenous or exogenous, and does the trade balance equation hold period by period? Basically, are the summations in equation (5) p.121 over both goods and time, or just over goods? The particular assumption might be quite important for Mexico. It is usually not necessary, or appropriate, to publish the actual computer code in journal articles, but for this book a technical appendix that included the GAMS code would have been beneficial for advanced modelers. My question about capital flows, and other minor gaps in the model description, could have been easily answered by a glance at the code.

Chapters 7 through 9 present the simulation analysis. The scenarios are well thought out and the comparisons relevant. The scenarios include sensitivity

over baseline assumptions (e.g., technical change and resource depletion), and then interact these assumptions with carbon (e.g., carbon taxes and carbon permit systems) and non-carbon policies (e.g., the removal of subsidies in the electricity market). The authors find that technical change is fundamental to achieving environmental and development goals for Mexico. This is probably not surprising to economists, but it does indicate to policy makers where public investments might be focused. The key advantages of the computational simulations is that we get a sense of the relative magnitudes of the various assumptions and policies.

Maria Eugenia Ibarrarán is Associate Professor in the Department of Economics at the Universidad de las Américas–Puebla, Puebla, Mexico. Roy Boyd is Professor of Economics at Ohio University in the Department of Economics. Both authors have experience in the analysis of environmental, energy, and development policy. With this book the authors make an important contribution that highlights details about Mexico's place in the energy and climate-change policy landscape.

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Lau, Morten I., Andreas Pahlke, and Thomas F. Rutherford (2002) "Approximating infinite-horizon models in a complementarity format: A primer in dynamic general equilibrium analysis." *Journal of Economic Dynamics and Control* 26(4), 577-609.

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Electric Choices: Deregulation and the Future of Electric Power, edited by Andrew N. Kleit (Lanham, MD: Rowman & Littlefield Publishers, Inc. 2006) 242 pages, ISBN-10: 0-7425-4875-9, ISBN-13: 978-0-7425-4875-6 hardback, ISBN-10: 0-7425-4876-7; ISBN-13: 978-0-7425-4876-3 paperback)

By most accounts, electricity restructuring has turned out to be quite a bit different from most predictions. While the most libertarian free-market advocates urged that things proceed along the lines of trucking, banking, natural gas, or airlines, regulators preferred to follow the advice of those who believed in a telecommunications model of limited liberalization. The results have been no slam dunk for either position. While California's restructuring was a calamity, PJM and New York are solid examples of success. Installed-capacity markets have not devolved as some thought but instead have evolved to be more complicated and sophisticated. Retail access has not taken off in many states along with the associated innovation in energy services that many had predicted. However, all in all, restructuring has not been the unmitigated disaster the naysayers anticipated.

The California catastrophe is only one of many rationales for revisiting electricity restructuring. Marginal costs are now above average costs in parts of the country, due in large part to increases in natural-gas prices. Add to the mix the removal of rate caps that were implemented as part of state restructuring issues, and cost-of-service regulation looks pretty good, particularly through rose-colored glasses. The blackout of August 2003 raised further questions about restructuring–along with amnesia about blackouts prior to restructuring. Layer on top concerns about global warming and the growing desire for substantial reductions in electricity demand, and some have come to see utilities – not "energy service companies" – as a preferred mechanism to deliver energy efficiency and demand reduction services.

Electric Choices, with the Independent Institute as the driving force behind this edited volume, is in the pro-market wing of the pro-restructuring camp. The editor, in his introduction, presents a balanced and qualified case for restructuring, acknowledging both its opportunities and challenges. While the book clearly leans in favor of markets over regulation, the theme is not consistently advocated throughout the book and fades somewhat as it progresses.

The two most noted contributors are Professors William Hogan and Vernon Smith; they both have rather dated chapters (Hogan's is a reworked 1999 paper and Smith's is a 2002 reprint). Of the remaining contributors, the largest group hails from George Mason University.

In Craig Pirrong's chapter, which discusses transaction costs in electricity markets, the professor makes two important points. First, although all markets have substantial transaction costs, those in electricity are particularly pronounced given a bulk-power system's reliability requirements, the large number of actors, and the grid's geographic scope and scale. He also points out that consumers will not know if the system operator reduces reliability – unless, of course, the lights go out as a result. Many argue that system operators overemphasize reliability at the expense of efficiency. Like reliability, the efficiency of markets is difficult to measure, but if the lights do go out, the senior management of a system operator will have a lot of explaining to do.

If system operators favor reliability over efficiency, is Pirrong's concern backwards? Not necessarily. During extreme peak hours, the system operator can choose between disconnecting firm load in a controlled manner and thus maintaining sufficient levels of operating reserves or reducing operating reserves but not disconnecting firm load. It is analogous to the decision faced so often by Civil War surgeon: when do you amputate the arm to save the body? Disconnection of firm load – not reducing operating reserves – results in a call from the governor. So, a system operator may willing to take the reliability risk of a large-scale blackout to avoid the public outcry of firm load curtailments that are not socially optimal. While Pirrong provides no evidence that this occurs in practice, it is a theoretical possibility.

The chapter by Kiesling and Giberson analyzes reliability policy post August 14, 2003. Within the same context of the Pirrong analysis, the authors

probe the intersection of reliability policy with economic incentives. Their specific conclusion is that the forty-six recommendations in a blackout report issued by the U.S. and Canadian governments erroneously emphasize supply-side solutions, regulation, and centralization rather than a more decentralized and distributed approach. They point out correctly that reliability rules unintentionally create conflict between private incentives and system reliability and cite the inadequate cost-based payment for reactive power as a prime example.

At the public policy level, reliability has gained the trump card status that "it's for the children" has in other policy debates. Reliability is seen as a hard constraint that should be untouched by economic considerations–a mantra that becomes more pronounced after every major blackout does not jibe with actual system operations or planning. System operators do not operate systems as if reliability rules are hard constraints for one very good economic reason: it makes no sense. The problem is that when reliability is threatened, system operators have almost only non-market actions to address the problem, and these will undercut potential market responses. Understandably, system operators are not willing to take the chance that the market will respond in time.

Enabling retail consumers to respond to wholesale prices and giving them the incentives to do so can reduce the system operator's need to ration power uneconomically during tight system conditions. Professor Dismukes addresses the demand side of electricity markets in a chapter that discusses distributed energy resources (DER) in the context of restructuring. DER includes distributed generation (DG) and demand-side management.

Dismukes makes the standard case for DER. Achieving the efficient DER level requires having an efficient wholesale market against which DER can compete. It also requires getting transmission and distribution rate design correct. Dismukes sees a troubling trend of distribution companies shifting the recovery of much of their revenue requirements from variable to fixed charges. From a retail customer's point of view, this shift reduces DER's attractiveness because a smaller percentage of the bill can be avoided when DER is installed. From the utility's perspective, transmission and distribution (T&D) assets have large fixed costs that need to be recovered from customers with DER even if their use of T&D decreases. Dismukes' point is that current rate design does not account for the avoided T&D costs that DER can provide.

Dismukes focuses on DG. In my view, increasing the amount of demand response is more important than DG in achieving an efficient power system. Although electricity markets are not a prerequisite for demand response, they are extremely helpful because they provide a real-time price of the cost of producing and transmitting electricity. For decades, utilities have had a variety of demand-response programs with different levels of success.

Having more customers with interval meters, two-way communication, and real-time rates determined by efficient wholesale markets would significantly improve the efficiency and reliability of the electric power system. This does not mean that these customers will actually pay real-time rates and adjust their con-

sumption every five minutes as prices change. Instead, many will enter into bilateral arrangements with third parties that offer a range of pricing options and capabilities to manage the customer's demand. Under the right rate design, utilities could use DR to delay or replace T&D investments, and under the right wholesale-market design, the system operator could have access to a range of DR options–including advance notification–to respond to changing system conditions.

Electric Choices has some interesting and thought provoking chapters, accessible to specialists and generalists alike.

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The Economics of Public Utilities, edited by Ray Rees (Cheltenham and Northampton: Edward Elgar, 2006) 2 vol. 560 and 473 pages, ISBN-13: 978 1 84064 908 6; ISBN 10: 1 84064 908 9 hardback

The Political Economy of Regulation, edited by Thomas P. Lyon (Cheltenham and Northampton: Edward Elgar, 2007) 683 pages, ISBN 978 1 84376 620 9 hardback

Over the last few decades, an evolving group of companies has become established as publishers of scholarly books. Typically, these publishers aim for limited sales at high prices, mainly to libraries; a few titles with possible wider appeal are priced to attract purchase by individuals. Among the outputs are anthologies of leading journal articles. The chief provider of such collections by far in economics is Edward Elgar; it has produced well more than 200 such anthologies. Curiously, the flow continues unabated although the original journals are now readily downloaded on the Internet. The two examples under review prove to have four or more Elgar predecessors concerned directly with regulation; other anthologies include articles related to regulation. While the two efforts examined here have no overlaps, the works do duplicate material in earlier Elgar anthologies. (The contents of most, but not all, Elgar anthologies are included with the Internet material on the books; only authors and titles are listed.)

The two anthologies have very different focuses. Lyon presents a selection of 24 articles involved with the principles of regulation and their realization. Rees's concern is the vast literature on properly pricing public-utility output from which he culls 64 works. Lyon goes beyond public utilities to cover environmental and safety regulation. As a result, his shorter effort is more diverse than Rees.

Lyon's effort apparently was constrained somewhat by the prior efforts and includes nothing by Stigler or Posner. Lyon limits himself to four areas–targets of regulation, causes and consequences, political control, and self-regulation. The first two areas contain classic overview articles such as Demsetz on

"Why Regulate," Oliver Williamson's use of experience with cable television to cast doubt on Demsetz's position, Coase on Social Cost (which has appeared in several prior Elgar anthologies), Weitzman on "Prices vs. Quantities," Tullock on "Welfare Costs," Peltzman's "More General Theory," and Becker on "Competition…for Influence." The causes (second) section ends with classic papers by Maloney and McCormick, Pashigian, and Peltzman on the theory and practice of environmental and product safety regulation. The control section has seven papers with four dealing with specific areas–the Federal Trade Commission, telecommunications, electric power, and OSHA–being regulated and the others treating general issues of control. The last section contains two articles.

Rees distinguishes and presents writings on six pricing issues and then devotes three final sections to applications to specific sectors–rail, electricity, and telephone. His concept areas are marginal-cost pricing, Ramsey pricing, peak-load pricing, pricing under uncertainty, two-part tariffs, and game theory approaches. The choices are as they should be. The marginal-cost section includes J. M. Clark, Hotelling, Vickrey, Ruggles, Coase, and Turvey. Similarly, the Ramsey section has Ramsey, Boiteux, Baumol and Bradford, and Feldstein. In peak loads, we get Boiteux, Steiner, Williamson, Panzer, and Crew and Kleidorfer. (These are highlights, not complete listings.) The other theory sections and those on the applications have similarly stellar selections. For example, Oi and Willig are in the two-part tariff section, and the electricity section includes Bohn, Caramanis, and Schweppe, Turvey, and Telson. The rail section is dominated by an 1891 article by Taussig, Pigou's 1913 comment, and Taussig's reply.

In short, these and their predecessors provide a good selection of the vast literature on regulation. Thus, they are a source of precisely what those interested in the subject need to examine. The library prices at about $225 a volume are problematic for the individual reader.

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