

*Iterative Energy Policy: Resisting An Apology***Book Review****Steve Isser, *Electricity Restructuring in the United States: Markets and Policy from the 1978 Energy Act to the Present* (Cambridge Univ. Press 2015)**

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Most energy law scholars have a general sense of the piecemeal fashion in which energy law and policy have unfolded in the past several decades. Notwithstanding the lack of a unifying policy, markets have opened, for both natural gas and electricity; environmental policy has become increasingly intertwined with the energy sector; and natural gas prices matter.¹ The laws and policies ushering in these developments can be lined up against presidential administrations, economic crises, and major domestic and world events. Indeed, that context aids tremendously in understanding contemporary energy law, and it has become part standard fare, part lore for energy law aficionados.²

In Steve Isser's *Electricity Restructuring in the United States*,³ readers will find a rich resource that delves deeply into the story of energy law's evolution. The book covers the particulars of nearly every development in U.S. energy law and policy related to electricity restructuring from 1978 until about 2014. It documents the kinds of details

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¹ See JOEL B. EISEN ET AL., *ENERGY, ECONOMICS AND THE ENVIRONMENT* 6-8 (4th ed. 2015) (briefly describing eras of energy law).

² See, e.g., *id.* at 8 (“[S]everal distinct themes recur throughout the history of energy law. . . . history often repeats itself.”); William Boyd, *Public Utility and the Lowe-Carbon Future*, 61 *UCLA L. REV.* 1614, 1635-36 (2014) (describing changing conceptions of the public utility); Emily Hammond & David B. Spence, *The Regulatory Contract in the Marketplace*, – *VAND. L. REV.* – (forthcoming 2016), <http://ssrn.com/abstract=2584619> (providing overview of changes in markets and environmental policy since late-1970s); Alexandra B. Klass & Elizabeth J. Wilson, *Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch*, 65 *VAND. L. REV.* 1801, 1814-21 (2012) (describing history of federal authority over transmission); Richard J. Pierce, *The Past, Present, and Future of Energy Regulation*, 31 *UTAH ENVTL. L. REV.* 291 (2011) (describing major developments in energy law and critiquing policy options for the future); Jim Rossi, *The Political Economy of Energy and Its Implications for Climate Change Legislation*, 84 *TULANE L. REV.* 379 (2009) (describing how public choice theory and federalism policy in energy sphere relate to political economy of climate change legislation).

³ STEVE ISSER, *ELECTRICITY RESTRUCTURING IN THE UNITED STATES: MARKETS AND POLICY FROM THE 1978 ENERGY ACT TO THE PRESENT* (2015).

that are lost over time: names,⁴ squabbles,⁵ and strange bedfellows⁶ that contributed to energy law as we know it. For researchers, such details provide texture and an ample array of sources for further exploration. Indeed, I begin this review with an overview of the book's descriptive project and offer a few pragmatic thoughts on the book's utility for legal scholars in the field. Second, I briefly engage a particular issue the book raises: translating complicated scientific, technical, and economic theory into on-the-ground regulatory policy. Third, I suggest that the book's preference for an iterative approach to electricity policy can be analogized to adaptive management, perhaps offering a way of reconciling the traditional tensions between regulatory and market-based policy approaches to electricity. I conclude with a cautionary note of my own.

I. THE DETAILS OF MUDDLING THROUGH

The book's general approach is to provide a deeply descriptive account of the transition from traditional regulation to wholesale electricity markets. For the most part, Isser does not take strong normative positions, which may be unsettling for readers accustomed to such an approach. As Isser explains in the book's Introduction, "This work is an unapologetic economic policy history that is more focused on description than theory."⁷ And indeed, the monograph unfolds largely as advertised. After providing some background on the origins of the Federal Power Act (FPA) and the regulated electric industry today, the book takes the reader headlong through a tour of everything from the Clean Air Act to industry restructuring to the California energy crisis. These "main events" of energy law are accented with tidbits—like which corporation lobbied for the qualifying facility (QF) provisions in the Public Utility Regulatory Policy Act (PURPA), and which law firm provided representation.⁸

Isser consistently applies this exacting attention to detail throughout the book. He carefully attends to the rise of environmental regulation,⁹ investor responses to PURPA,¹⁰ the policy transition to economic modeling for electricity,¹¹ and even the particulars of how electricity dispatch software works.¹² As he lays out the transition to wholesale

⁴ Often, if Isser cites a study, he will also tell you who sponsored it. *See, e.g., id.* at 440 n.23 (noting sponsors of reliability study); *id.* at 443 n.1 (describing studies and listing "self-interested" sponsors).

⁵ *E.g., id.* at 292 (describing unwillingness of North American Electric Reliability Corporation (NERC) to real-time generation and transmission data with FERC, because NERC members "did not want FERC staff to have the data").

⁶ *E.g., id.* at 53 (referencing the combination of environmental idealists and industry groups that supported the Clean Air Act Amendments of 1977).

⁷ *Id.* at 2.

⁸ It was Wheelabrator-Frye Corporation, a waste-to-energy facility developer, represented by Van Ness, Feldman, and Sutcliffe. *Id.* at 82.

⁹ *Id.* Ch. 2.

¹⁰ *Id.* Ch. 4.

¹¹ *Id.* Ch. 5.

¹² *Id.* Ch. 7.

electricity markets,¹³ Isser makes sure to describe the politics,¹⁴ the players,¹⁵ and the phenomenal shifts in both the electricity industry's organization and the regulatory structures that accompanied the transition.¹⁶

At the book's conclusion, Isser does not attempt to reconcile these rich details into any overarching theory. Rather, he frames the book's journey as an apology for "muddling through."¹⁷ To be sure, Isser shares his opinions at the end of the book. He concludes that muddling through is superior to radical restructuring; that promises of dramatic cost savings through restructuring proved to be "so much hype and hot air"; that stronger regulation of transmission is necessary to reap the gains of restructuring; and that retail competition "has been grossly overrated."¹⁸ Yet the book as a whole seems more detached than these strong concluding opinions suggest. Isser offers only glimpses of his own views in most of the chapters, making these concluding observations seem more an afterthought than a set of overarching themes on which a reader might engage.

This descriptive approach, however, has the benefit of inviting the reader to draw her own conclusions. Scholars wishing to support public choice theory in energy policy development, for example, will find mountains of examples permeating the book.¹⁹ Environmental law as a driving force in energy policy is also amply demonstrated.²⁰ The interplay between natural gas prices and the electricity fuel mix is likewise shown to be a perennial issue for energy policy.²¹ The book's factual richness prompts many sparks of ideas and supplies information that is otherwise difficult to find.

II. ITERATIVE REGULATION AND THE FALLACY OF MODELS

An issue that Isser engages more thematically, albeit somewhat tacitly, is that of translating complex scientific, economic, and technological concepts to working regulatory models. This is perhaps best demonstrated in the chapter entitled "The Economists are Coming, The Economists are Coming." As the title suggests, this is one topic regarding which Isser cannot really hide his own perspective. Here he explains how

¹³ *Id.* Chs. 8 – 12.

¹⁴ *Id.* Ch. 11.

¹⁵ *Id.* Ch. 10.

¹⁶ *Id.* Chs. 13 – 25.

¹⁷ *Id.* at 460.

¹⁸ *Id.* at 461.

¹⁹ *See, e.g., id.* Ch. 2 (describing environmental regulation of electricity generation), Ch. 6 (describing events leading to Energy Policy Act of 1992).

²⁰ *See, e.g., id.* Ch. 2 (describing environmental regulation of electricity generation), Ch. 25 (describing recent Clean Air Act initiatives).

²¹ *See, e.g., id.* at 87 ("The decline in the price and the increased availability of natural gas due to deregulation made natural gas a more attractive fuel for electricity generation during a period when there were significant advances made in turbine and power plant design.").

it was that economic theory infiltrated the public policy of electricity regulation.²² First, he notes the role of economic concepts as political “rhetoric,” stating that some of the terms are used “promiscuously,” suggesting more than can be delivered.²³ “Efficient market,” for example, suggests a sort of perfection that cannot be obtained in the real world.²⁴ Efficiency is an ideal, while a market is a “mechanism for organizing economic activity” rather than an end in and of itself.²⁵ Nevertheless, competing economists—many of whom Isser calls biased and self-interested—engaged in a “battle of the experts” in which the winners were proposing deregulation with little supporting evidence.²⁶ As competing academics disseminated arguments to consultants, who translated the information to lobbyists, who once again translated information to politicians, complex issues became grossly oversimplified.²⁷

These observations dovetail with others’ criticisms of how scientific and technical information is managed by, and incorporated into, the U.S. legal system. From concerns about “hired-gun” expert witnesses at trials²⁸ to the politicization of science in federal agencies,²⁹ there is intuitive appeal to the view that, in order for the law to be fair, legal institutions must get the science “right.”³⁰ From a pragmatic perspective, this is not a controversial goal; however, it is extremely limited in operation because science is neither static nor certain.³¹ Instead, most science is accompanied by varying types and

²² *Id.* at 102.

²³ *Id.* at 97.

²⁴ *Id.*

²⁵ *Id.* at 102.

²⁶ *Id.* at 101.

²⁷ *Id.* at 102.

²⁸ See generally PETER W. HUBER, *GALILEO’S REVENGE: JUNK SCIENCE IN THE COURTROOM* (1991); Edward K. Cheng & Albert H. Yoon, *Does Daubert or Frye Matter? A Study of Scientific Admissibility Standards*, 91 VA. L. REV. 471 (2005) (studying admissibility outcomes under two most prominent admissibility regimes).

²⁹ See Emily Hammond Meazell, *Super Deference, the Science Obsession, and Judicial Review as Translation of Agency Science*, 109 MICH. L. REV. 733, 744-56 (2011) [hereinafter Hammond, *Super Deference*] (discussing this issue).

³⁰ See Emily Hammond Meazell, *Scientific Avoidance: Toward More Principled Judicial Review of Legislative Science*, 84 IND. L.J. 239, 242 (2009) [hereinafter Hammond, *Scientific Avoidance*] (“With society’s faith in science comes an inherent belief that scientific “truth” is inextricably linked to fairness.”).

³¹ See NAT’L ACADEMIES PRESS, *RESPONSIBLE SCIENCE VOLUME I: ENSURING THE INTEGRITY OF THE RESEARCH PROCESS* 38 (1992) (“Although [science’s] goal is to approach true explanations as closely as possible, its investigators claim no final or permanent explanatory truths. Science changes. It evolves. Verifiable facts always take precedence.”). It is in fact difficult to find examples of courts or agencies getting scientific *facts* wrong (as opposed to “best science” or state-of-the-art). A possible, if disputed, example, is *Wells v. Ortho Pharm. Corp.*, 788 F.2d 741, 742 (11th Cir. 1986) (upholding district court’s credibility-based determination that spermicidal jelly caused birth defects, even though scientific consensus was otherwise). See also Wendy E.

degrees of uncertainty, making it a fallacy to state that science can provide answers.³² The decision what to do in light of science and uncertainty—and other relevant factors—is inherently a decision of policy.³³

Isser's emphasis on the weaknesses of economic models resonates with these principles. As he succinctly puts it, "It is our models that are simple, not the real world."³⁴ This is no condemnation of modeling; rather, it is a plea for policymakers to resist the urge to blindly rely on theory and models without explicitly confronting their accompanying uncertainties. By itself, this is a problem of transparency. Rhetorical appeals to superficially objective models often obscure the real rationales for decisionmaking, undermining participatory values at the heart of democratic processes.³⁵ But consider also this passage from the *Economists* chapter:

Economists and consultants were both guilty of understating the difficulties and oversimplifying the complexity of building real-world electricity markets. This in turn encouraged politicians to support overly ambitious timelines for restructuring markets, resulting in software and market structures that contained serious design flaws. At best, this meant numerous software iterations, as market flaws were identified and desired functionality was added to stakeholder and regulator wish lists. The worst case scenario was the California market meltdown, where poor market design, rushed implementation, and a "perfect storm" of events lead to an economic disaster.³⁶

Isser's critique is not so much one involving democratic norms and the fallacy of models as a warning against haste. His competing-expert and uncertainty-based critiques are not borne of concerns about decisionmaking as a *process* so much as decisionmaking *outcomes*.

Wagner, *The Bad Science Fiction: Reclaiming the Debate over the Role of Science in Public Health and Environmental Regulation*, LAW & CONTEMP. PROBS., Autumn 2003, at 72-87 (exhaustively demonstrating that there are very few examples of agencies getting positive science wrong).

³² Hammond, *Super Deference*, *supra* note 29, at 744-48.

³³ Hammond, *Scientific Avoidance*, *supra* note 30, at 250-51.

³⁴ ISSER, *supra* note 3, at 99; *see also* Robert L. Glicksman, *Bridging Data Gaps Through Modeling and Evaluation of Surrogates: Use of the Best Available Science to Protect Biological Diversity Under the National Forest Management Act*, 83 IND. L.J. 465, 479 (2008) ("[Models] are capable neither of providing a completely accurate representation of reality nor of eliminating the scientific uncertainty that induces the decision maker to resort to modeling in the first place.").

³⁵ *See* Hammond, *Super Deference*, *supra* note 29, at 736 nn. 9-10 (collecting sources).

³⁶ ISSER, *supra* note 3, at 109.

These observations offer a provocative lens for evaluating the recently released Clean Power Plan.³⁷ Opponents and supporters alike have emphasized the significant changes that the Plan heralds for electricity policy.³⁸ A fundamental building block of the Plan—replacing coal-fired power with natural-gas fired power—is sure to bring changes in the electricity fuel mix.³⁹ Another building block anticipates further fuel-switching to low-carbon fuels.⁴⁰ EPA has expressly disavowed any intention to interfere with electricity dispatch, but it has also emphasized that the fungible nature of electricity enables “shifting dispatch from steam generators” to lower-carbon units.⁴¹ Critics of the Plan argue that it will severely reduce grid reliability,⁴² while EPA downplays any such impacts.⁴³ The point here is not to resolve these competing views. Rather, the point is the acute relevance of what Isser has identified: over-generalizing incredibly complex policy efforts risks significant flaws in the implementation phase.⁴⁴

IV. ADAPTIVE MANAGEMENT AND ITERATIVE POLICY

This note of caution brings us full circle to Isser’s framing device: the apology for muddling through. Isser suggests that the antidote to this problem of incorporating economic principles into regulatory policy is incremental change. He recognizes that such an approach is “out of fashion” given “the illusion in economics and management decision science that large complex problems can be modeled and solved.”⁴⁵ But he argues the fallacy of this illusion, and supports gradual changes and incremental policy implementation.⁴⁶

³⁷ Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 40 C.F.R. § 60 (2015) [hereinafter Clean Power Plan].

³⁸ Barack Obama, Remarks by the President in Announcing the Clean Power Plan (Aug. 3, 2015), <https://www.whitehouse.gov/the-press-office/2015/08/03/remarks-president-announcing-clean-power-plan> (calling CPP “single most important step America has ever taken in the fight against global climate change”); cf. Scott Segal, *Lots of Pain with Questionable Benefits*, U.S. NEWS DEBATE CLUB, Aug. 13, 2015, <http://www.usnews.com/debate-club/is-obamas-clean-power-plan-a-good-idea/lots-of-pain-with-questionable-benefits> (“We can expect significant potential threat to the electric reliability upon which our modern way of life depends.”).

³⁹ Clean Power Plan, *supra* note 37, at 7 (listing building block 2 as “[s]ubstituting increased generation from lower-emitting existing natural gas combined cycle units for reduced generation from higher-emitting affected steam generating units”).

⁴⁰ *Id.*

⁴¹ *Id.* at 593.

⁴² E.g., Segal, *supra* note 38.

⁴³ Clean Power Plan, *supra* note 37, at 51.

⁴⁴ These potential flaws are the subject of a current project with co-author Richard J. Pierce.

⁴⁵ ISSER, *supra* note 3, at 460.

⁴⁶ *Id.*

This view calls to mind the concept of adaptive management, which has received considerable attention in the environmental law literature. The goal of adaptive management, as described by Professors Craig and Ruhl, is to “reduce uncertainty through integrative learning fostered in a structured, iterative decisionmaking process.”⁴⁷ It is an oversimplification to call this approach “learning by doing,” but its point is to permit agencies to revise their policies as new information emerges, rather than requiring an irreversible commitment to a particular course of action.⁴⁸ Professors Craig and Ruhl provide the example of an agency managing a river system that includes numerous impoundments and other ecological resources.⁴⁹ Although there may be significant uncertainty regarding the impact of releasing particular amounts of water from the impoundments, the agency can easily control that impact by altering the releases.⁵⁰ An adaptive management approach would use monitoring to provide feedback on the ecological impact of the releases and to adjust the releases before serious ecological problems arose.⁵¹

Of interest for this Review is that adaptive management is viewed as belonging on the opposite end of the spectrum from market-based regulatory solutions because the former relies on regulatory discretion while the latter seeks to minimize regulatory decisionmaking in favor of market-driven outcomes.⁵² The picture painted by Isser in favor of iterative decisionmaking, however, invites speculation whether adaptive management and *actual* (as opposed to theoretical) regulated markets are really in such opposition. The story of electricity restructuring, at least, reveals not a true open market but a collection of market-type principles being constantly tinkered with by federal and state regulators and legislatures, and other quasi-governmental actors like Regional Transmission Operators (RTOs) and Independent System Operators (ISOs).

Admittedly, a closer look suggests some mismatches. Adaptive management theory suggests that the most favorable conditions for that approach involve high uncertainty, high controllability, and low risk.⁵³ The river system example above, for instance, meets these criteria.⁵⁴ By contrast, the wholesale markets—at least those Isser describes as representing incremental change—do not fit these criteria so neatly.

⁴⁷ Robin Kundis Craig & J.B. Ruhl, *Designing Administrative Law for Adaptive Management*, 67 VAND. L. REV. 1, 20 (2014); *see generally id.* (providing comprehensive review of literature and theoretical underpinnings).

⁴⁸ *Id.* at 16-17.

⁴⁹ *Id.* at 20.

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.* at 3-11.

⁵³ *Id.* at 19-21. Some regulatory decisions, by contrast, are binary, that is, yes/no actions such as whether to grant a license or approve a tariff. *Id.* at 19. These are not amenable to adaptive management because they require a single decision meant to minimize uncertainty and control risk, though subsequent monitoring may be amenable to an adaptive approach. *Id.* at 21.

⁵⁴ *Id.* at 20.

Although the markets in practice do involve high uncertainty, Isser contends that decisionmakers' overreliance on economic models led to the false assumption that there was low uncertainty. In other words, it is important that a decisionmaker accurately understand the degree of uncertainty inherent in a regulatory approach.

Moreover, unlike the gates of a reservoir, the markets are not particularly controllable, as evidenced by the history of consumer worries about widely fluctuating rates and regulators' insistence on price caps.⁵⁵ Further, market design risks can be quite high—as demonstrated by blackouts costing millions of dollars.⁵⁶ At the same time, the failures to which Isser points took place within regulatory contexts that were certainly not adaptive; his whole point is that state restructuring especially was undertaken too quickly.

Still, reconciling Isser's argument for incremental change with adaptive management theory may be a worthwhile exercise.⁵⁷ Perhaps there is a kernel possibility for aligning the theory of regulated markets with traditional regulation in hopes of developing a more accurate model of modern regulatory theory generally. And, perhaps, there are lessons inherent in that exercise for making progress on the best way to incorporate uncertain science, economics, and technology into regulatory decisionmaking. Isser identifies the problem; adaptive management aims at least in some circumstances to account for evolving scientific knowledge rather than freezing the state of knowledge in time.⁵⁸

V. CONCLUSION

I conclude with one additional thought, drawing from the philosophy of science. Consider Thomas Kuhn's view: that science is normally a cumulative exercise of evolving consensus, punctuated by occasional paradigm shifts.⁵⁹ A loose analogy can be made to law: there are periods of incremental, iterative policymaking, punctuated by major shifts like the New Deal and the environmental, health, and safety statutes of the late 1960s and early 1970s. The starting place for *Electricity Restructuring* fits neatly within the latter period and may be best viewed as such a punctuating shift. Isser's apology for muddling through involves the long process of learning and implementing since that time. History, however, suggests that another paradigm shift may be due. Climate change may well be the motivating force; the urgency of mitigation and

⁵⁵ Cf. Richard J. Pierce, Jr., *Completing the Process of Restructuring the Electricity Market*, 40 WAKE FOREST L. REV. 451, 482 (2005) (describing how price ceiling have negative effects on market efficacy).

⁵⁶ ISSER, *supra* note 3, at 407.

⁵⁷ Regrettably, a full analysis here is beyond the scope of this Review. It promises instead a rich area of exploration for future work.

⁵⁸ See Robert L. Glicksman & Sidney A. Shapiro, *Improving Regulation Through Incremental Adjustment*, 52 U. KAN. L. REV. 1179, 1185-87 (2004) (describing benefits of "back-end" regulatory adjustments).

⁵⁹ THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* 36-42, 52 (3d ed. 1996).

adaptation are only increasing. Even if incremental change is at times the best path for regulatory decisionmaking, one hopes that in the next several decades, we are not apologizing to our children and grandchildren for our inability to do more than muddle through.