

BOOKS

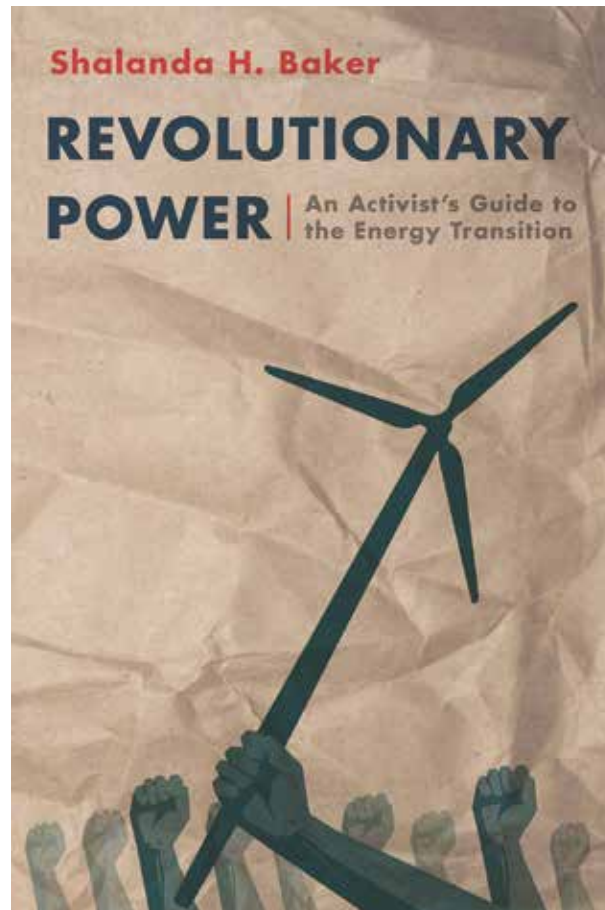
Power's Real Challenges

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Electricity is a quicksilver element of everyday life. Although essential for many day-to-day activities, power generation is a major source of greenhouse gas emissions; at the same time, electricity is at the center of plans to tackle climate change via broad deployment of renewables and the electrification of transportation and other sectors. Given its importance, access to and the cost of electricity is also a potential vehicle to address inequality—although most consumers have little choice over where to buy power.

The central assertion of Shalanda Baker's *Revolutionary Power: An Activist's Guide to the Energy Transition* is that the existing system must be overturned in the pursuit of social justice. Identifying energy as an aspect of the widening inequalities that play an important role in the nation's current troubles, her book describes the unfairness besetting poor and minority communities in their access to electricity. To address these inequalities, she calls for "an energy system grounded in broad participation and community-led management of local resources," relying on "strict requirements for locally sited, small-scale energy projects that [include] incentives for energy storage."

Baker's influence in decisionmaking is not to be underestimated. Formerly



Revolutionary Power: An Activist's Guide to the Energy Transition

by Shalanda H. Baker. Washington, DC: Island Press, 2021, 212 pp.

a law professor at Northeastern University, she is now a senior adviser on equity at the US Department of Energy and the deputy director for energy justice at the agency. Hers is a voice that goes beyond advocating for social justice; it will help to shape the Biden administration's ambitions for climate and energy decisions—including the aspiration to reduce

greenhouse gas emissions from electric power production to zero by 2035.

Baker comes to her policy role with firm convictions. As she recounts her life story, growing up in modest circumstances in the American South, Baker describes the visceral reality of environmental injustice: the material, physiological, and psychological inequalities that have characterized and blighted America. In a land where personal freedom and democracy are celebrated (sometimes in the breach), these imbalances seem particularly shameful.

However, the author makes a crucial omission in *Revolutionary Power's* analysis: the fact that the electric power system is an economic undertaking of extraordinary complexity and interconnectedness. As with other progressive rallying cries, there are legitimate complaints in the call for

a new order. But this book elides practical considerations that few people, poor or rich, understand—or would willingly trade away if the slogans were turned into poorly crafted policies.

"The [energy] system," she asserts, "represents the sum total of a series of political and economic choices that concentrate power and wealth in the hands of utility companies and their investors, often at the expense of utility customers." This description ignores the long-standing "regulatory

compact”—specifically designed to benefit utility customers—between the government and for-profit electric utility companies: utilities are granted monopoly service territories and authorized rates of return in exchange for taking on an obligation to serve all customers within that area with reliable power available on demand. The prices charged for electricity are subject to extensive oversight by regulators.

There is legitimate criticism of this arrangement, the utility rates that result, and the coziness that is sometimes apparent between regulatory bodies and those they regulate. Yet it is essential to recognize that today’s rates reflect a complicated mix of the costs of past investments in power plants, wires, and transformers; the fuel needed to run power plants; and the regulated return allowed to the utilities’ shareholders. An additional check in this system comes from bond markets, which provide financing for utility infrastructure, just as homeowners rely on bank mortgages. This complex scheme is one that virtually no consumer understands in detail. It is an arrangement where poor public policies can easily lead to unintended consequences.

Consider the case of net energy metering (NEM) for rooftop solar energy, where the consumer pays the utility for the difference between the amount of energy they produce via solar and the amount they consume. Baker puts NEM at the center of her “revolutionary” vision of “customer-owned energy, battery-operated microgrids” that bring “true freedom from the weight of the fossil fuel-based energy system.” The cost of small-scale solar generation has been declining, falling by more than 60% over the past decade alone. As with other technologies built around semiconductors, increased production volume lowers the cost of individual units and spurs additional innovations that also lower costs.

The deployment of rooftop solar

has been driven in large part by retail rate design; policymakers have offset the utility bills faced by the owner of a solar unit by the *full retail* value of the power generated on the roof. This retail rate is designed to cover not just the generation of electricity but investment in all of the wires, substation equipment, and systems necessary to ensure that power is available to all customers at all times. By allowing households with the wealth to install solar cells to bypass paying for any of the grid while continuing to provide grid power when the sun isn’t shining, costs are being shifted to other utility rate payers. In California, a leader in NEM and in solar installations, the consumer benefits by roughly a quarter for each kilowatt-hour produced by her solar panels, but the utility’s costs decline by less than a dime. So the utility either loses money or raises its rates. In practice, both are occurring.

Who loses out when the rates increase? It is disadvantaged communities—those who do not own their own homes, who reside in multifamily dwellings, or who do not have access to the capital needed to install solar. These are the same customers whose power bills already make up a larger fraction of their budget than is the case for those who are accessing NEM incentives. This leads the University of California, Berkeley, energy economist Severin Borenstein to conclude that net energy metering “hurts the poor. It’s that simple.”

Baker recognizes this situation, but her discussion focuses on the motives of the utilities and state regulators who are only now challenging the wisdom of NEM—after the cost of solar has fallen low enough that disadvantaged households can finally afford it. Yet whatever the motives, spending a quarter to save a dime remains a losing proposition, and California is

running out of customers upon which to shift the costs.

Baker argues accurately and convincingly that there are opportunities to leverage the utility system to advance public policies. The shift toward climate-friendly renewable energy in the Infrastructure Investment and Jobs Act of 2021 will spur very large investments in both generating facilities and a power grid capable of connecting millions of solar panels and windmills to the existing network. The Princeton University-based Net-Zero America study estimated in 2020 that augmentation of the grid alone will require nearly \$400 billion in the current decade.

Investment at this scale can be done in ways that either address or exacerbate the inequalities that persist across the country. The Biden administration has taken a step forward in inviting environmental and social justice advocates to take a seat at the federal policy table. Yet the grid, utilities, and other entities across the electric power industry are all regulated by overlapping layers of governmental bodies operating at the federal, state, and local levels, pursuing sometimes incompatible policy goals. As legal scholars Alexandra Klass, Joshua Macey, Shelley Welton, and Hannah Wiseman argue in a forthcoming paper, “This segmentation renders the full convergence of clean energy and reliability goals nearly impossible: reliability-focused organizations operating within their silos routinely counteract climate policies.” The answer, they propose, is “calibrated reforms ... that shift authority ... to integrate the twin aims of low-carbon, reliable energy.”

An approach that coordinates and achieves calibrated reforms among dozens of policymaking bodies could reasonably be led by the Department of Energy, with legal and policy scholar Baker taking an important role. But *Revolutionary Power* takes a more simplistic view,

summarized in a fictional scenario set in Hawaii, with an imaginary tropical cyclone striking the islands in 2035. Strengthened by warmed ocean waters, the storm eviscerates the power grid. So extensive is the damage that the power company and its financiers sell out cheaply. Local communities build decentralized microgrids, replacing the cumbersome, extractive, corporate system with a just, plentiful, and reliable supply of energy from the sun. The community activists, she writes, “obtained grid infrastructure at a steal.” Baker does not explain how any of this is paid for, although one might infer that federal disaster relief funding would play a major role.

Important economic questions aside, a deeper problem is that Baker does not explain how a community of consumers would develop the stamina and knowledge to manage both the individual microgrids and the wholesale grid by which the power supply could be made reliable enough to assure that hospitals, for example, would be able to count on the power needed in their operating rooms. This is why the book’s scenario is a fairy tale, even if the threat of a cataclysmic storm is not.

Throughout this book, Baker dismisses the economics of a transition to a climate-positive energy system, scorning “an overemphasis on technology and finance.” But she is an expert, and one would expect *Revolutionary Power* not to omit discussion of the real challenges ahead. This simplistic and utopian view of electric power takes aim at the wrong target, and thus risks delivering little to the people who need it the most. And that’s a shame.

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