The introduction to Stephen G. Gross and Andrew Needham’s edited collection begins with Cesare Marchetti’s model for predicting the rise and fall of energy systems over time: “It is as though the system had a schedule, a will, and a clock,” which saw wood replaced by coal, then oil, then natural gas, followed by predictions for nuclear energy and solar power (p. 3).[1] Bringing together the oil shock of 1973 with the context of the Cold War, this punchy opener goes on to remind us how far we have not come, with the models informing current public debate often resembling earlier ones, all “smooth curves of rising renewables and falling fossil fuels.” Energy shifts are, however, “far more human” (p. 6). This has resulted in a recent energy history that examines social, cultural, intellectual, political, and economic facets of energy transitions, something which has driven the compilation of this volume. Focusing on North America and Europe (a geographic constraint which the authors explain thoroughly, noting its limitations as well as strengths), the book taken as a whole demonstrates what historic perspectives can bring to the debate surrounding the shift away from fossil fuels. In so doing, the contributors not only succeed in integrating energy history into broader social narratives; they also explore how this same history can be used to meaningfully inform responses to the current climate emergency.

This volume is part of a growing body of scholarship moving energy history beyond the fringes of environmental history toward its own discipline, one triggered not only by climate change but by capitalism: looking back to its role in energy generation and consumption, and forward to the equality of a just transition. Perhaps most pointedly, and in acknowledgement of the complexity of the history addressed, we are reminded that such transitions are not linear. One form of energy is not replaced neatly by another—they coexist, part of society’s ecosystem. In addressing this evolution, the contributors raise questions that can help us address uncertain energy futures.
The volume is split into four parts, taking the reader from oil’s rise and coal’s transformation, through the crisis of transition in the 1970s, to the political and environmental upheaval of a one-time atomic future, before concluding with the challenges and possibilities of the move away from fossil fuels in the second half of the twentieth century—evidence of “a future foreseen” (p. 203). Joseph Bohling’s opening chapter restores “conflict to the historiography” of crude oil’s rise to dominance after World War I (p. 47). The author immediately draws focus away from the traditional dialogue of crude oil as king, toward one which spotlights the role of alcohol fuels as an early challenger. In keeping with the strengths of this volume, Bohling challenges the standard narrative as he takes the reader to France—oil-poor but alcohol-rich—in his examination of the state’s investment in alcohol fuel. This was a fraught process, setting the tone for a volume that is at once technical, political, social, economic, and environmental ... and one that is full of surprises.

In the following chapter, Gross introduces the reader to another level of tension during the “Great Acceleration” years of 1950 to 1973: the decline of coal during a period of economic growth and increased energy consumption. This decline was at its height in West Germany’s hard coal heartland in the Ruhr, where, Gross notes, the new nation experienced an unprecedented turnaround, switching from the continent’s largest consumer of coal to its largest consumer of oil. This transition “threatened to shatter the social fabric of the nation and pushed politics to its limits” (p. 49). With statements like these, it is easy to see exactly how socially entangled such studies can be, with Gross expertly teasing out influential factors and how they relate to today’s transitions. Trish Kahle’s chapter, which explores the conditions endured by Appalachian coal miners, brings the body into the discourse of transitions. As electricity use increased in the United States, the human cost of high energy demand—not least a long series of disasters—led to new legislation in the 1960s and 1970s that installed “a moral economy negotiated between the workers who produced the overwhelming majority of electric power ... and the nation that consumed it” (p. 63). Workers’ lives became part of a body politic. How this translates into a just transition, Kahle reminds us, remains a moral challenge. The consequences of the expansion rather than contraction of coal are picked up in Ryan Driskell Tate’s chapter, with transition constituting “reinvention rather than replacement” (p. 78). The Powder River Basin moved the geography of mining from Appalachia to the rural West, strip mining necessitated high levels of mechanization, and new technology altered the labor force, with corporations employing agrarian, non-unionized workers, which resulted in a significant shift in energy culture and employee identity.

After demonstrating a certain back and forth between coal and oil in part 1, part 2 focuses on the intricacies of the 1970s, a decade marked by “oil shocks” in 1973-74 and 1978-79. These geopolitical moments saw oil prices rise as the availability of supplies dropped. Running alongside was the fear that fossil fuels might run out, the development of environmentalism as a movement, and a new impetus toward international energy planning that saw large American and European projects, including increased investment in nuclear and other alternatives to oil. All of these aspects are insightfully drawn out by the section contributors. Victor McFarland brings many of these threads together in chapter 5, emphasizing how US policy decisions of the 1970s and the quest for energy independence continue to impact today’s world. An increase in research and development funding for alternative energy sources during the period sits alongside a pro-fossil fuel agenda—each influenced by different presidential administrations—with the latter remaining difficult to overcome. Duccio Basosi consolidates the turbulence of the decade in his critical review of the decade’s global energy debates. Most presciently, both for the chapter, the volume, and current ana-
yses, he contextualizes the term “energy transition” as having first gained traction during the 1970s, explaining that it was a problematically vague term from the outset. In the following chapter, Henning Türk moves the discussion beyond the national or continental to reflect the internationality of the transition. Türk highlights the significance of the Organization for Economic Cooperation and Development as a vehicle for discussing the impact of transitions between the Western industrialized countries, as well as the formation of the International Energy Agency in 1974 and its role in the coordination of their energy approaches. Reducing dependence on imported oil was key, with nuclear, gas, and above all coal recommended as alternatives. The agencies advocated energy conservation, but renewables were not prioritized as they were not well enough developed to help in the short term. Energy conservation and increased efficiency are again the focus in chapter 8, by Thomas Turnbull, who encourages historians to engage with the history of economic thought as an analytic tool for shifting energy policy. The act of saving rather than using energy, Turnbull argues, deserves greater attention from energy historians. Conservation is to be carried through in practical terms, with efficiencies offering “a seemingly painless solution to reducing our energy dependencies” (p. 148).

Nuclear energy, mentioned briefly in previous sections, is covered in depth in part 3. The nuclear utopianism of an energy that would be “too cheap to meter” could not be further away from the dirty, dangerous processes of the extractive industries (p. 148). The potential of this transition, however, was never fully realized, as rising costs, accidents and disasters, awareness of risk, and the actions of motivated protest movements limited expansion. Yet the prospect of nuclear energy fundamentally changed society, introducing us to time scales beyond immediate comprehension as radiation and the long-term consequences of nuclear waste were brought into public consciousness. Sonja D. Schmid’s chapter provides ready insight into the complex entanglement of modernity, social betterment, and political machinations amidst Soviet control in Central and Eastern Europe. The once hoped-for independence from Soviet oil and gas turned into a dependence on Soviet reactor systems, uranium, expertise, and spent-fuel handling—all problems that were intensified once access was lost following the Soviet Union’s collapse. Schmid’s argument that nuclear energy “cannot be explained by reference to price and efficiency alone” becomes increasingly clear (p. 158). Although taken along a different track, this statement is at its most powerful in Natasha Zaretsky’s chapter on fetal citizenship and atomic power in the United States, which brings energy history and gender history together as a revelatory category of analysis. The author examines three instances across the postwar period whereby the “unborn” was considered by many to be “atomic power’s most defenseless and vulnerable victim” (p. 169). Zaretsky explains how the politicization of the unborn began with the atomic age and its radiation threat, which spanned generations, resulting in a gendered activism that resonates with current environmental concerns. The following chapter, by Dolores L. Augustine, picks up on anti-nuclear power activism, with a focus on the influential West German movement, which grew alongside the country’s desire to expand its nuclear power program to reduce its reliance on oil and coal. Augustine charts the role of “counterexperts,” who gave a diverse movement consistency and focus amidst a series of large-scale protests, providing an educational role away from official channels. When related to Germany’s current transition away from nuclear, the contemporary relevance of the new social movements of the 1970s is immediately clear.

The concluding section consolidates the volume with its focus on the never-more-pressing need to transition away from fossil fuels. Here, I could not help but stop and think: global warming, history shows, is nothing new. The oil shock of 1973 opened up an opportunity for governments
to invest in the research and development of renewables, although relatively little progress was made. The exploitation of alternative oilfields—such as those under the North Sea—took precedence over alternative forms of energy, and in the ensuing decades a litany of privatization and climate denialism proved exactly what a challenge this transition would be. Benjamin Franta’s chapter examines the period before 1988, after which more fossil carbon had been emitted “than in the entire previous history of humankind” (p. 204). Even so, industry was increasingly aware of the environmental risks during the earlier period, with companies like Shell and Exxon undertaking research to predict global warming models in private, while publicly concealing projections, effectively delaying the replacement of fossil fuels. As the editors point out in their short introductory section, the volume’s final chapter “gives grounds for optimism” (p. 202). Eva Oberloskamp’s comparative study of renewable energies in the United Kingdom and (West) Germany explains how renewable energies began to be developed in the 1970s at the same time as headline-grabbing nuclear power. This phase of transition, Oberloskamp argues, laid the groundwork for the present day. This protracted process had much to do with the political mix, with the strength of the West German Green movement and Green Party standing out “from the complex maze of contexts,” leading to legislation being passed that “sparked a renewable boom in Europe” (pp. 234, 201). As a fitting end to the volume, this chapter outlines the challenges and obstacles in making this most necessary of transitions, leaving the reader in no doubt that society has a long way to go. When paired with the rest of the volume, what results is a meticulously researched and presented collection that sets the agenda for future energy transitions research.

Note
