

Powering Up Canada: A History of Power, Fuel, and Energy from 1600. Edited by R. W. Sandwell. Montreal and Kingston: McGill-Queen's University Press, 2016. xx + 482 pp. Map, figures, tables, bibliography, appendices, index. Cloth, \$120.00; paper, \$37.95. ISBN: cloth, 978-0-7735-4785-8; paper, 978-0-7735-4786-5.

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Reviewed by Matthew N. Eisler

Why write a history of energy and power in Canada? Few societies have been more recently and thoroughly altered by the shift from low to high consumption or consume more energy per capita. So the economic and environmental implications of Canadian energy production and consumption are surely global, and therefore of broad interest. However, the goals of this edited volume of essays, organized around a symposium held in 2013 under the auspices of the Network in Canadian History and Environment, are decidedly closer to home. Intended as a corrective to the supposed dearth of studies of Canadian energy and near-invisibility of energy in Canadian historiography, this volume attempts what symposium organizer R. W. Sandwell refers to as a fine-grained analysis of the role of all energy forms in every aspect of Canadian life from the earliest days of European colonization until the present.

It is an ambitious goal, and the result is a richly detailed account replete with insights. Food energy in the form of pemmican was used as a weapon by competing fur traders in the late eighteenth and early nineteenth centuries, fueling expansion and the ultimate demise of bison. Wood biomass persisted in home heating far longer than hitherto assumed, well into the mid-twentieth century. Falling water accounts for a much larger proportion of electricity in Canada (60 percent) than in the United States (9 percent). And despite being plentifully endowed with natural resources, Canada has never been energy independent. Coal and oil from the energy-rich province of Alberta were never exported to the coal- and oil-poor provinces of Ontario and Quebec, which imported these fuels from elsewhere.

What these findings mean for Canada and the world is less clear. Some of this incoherence stems from the diffuse nature of edited volumes. The real problem is that absent a strong grounding in sociopolitical and economic history, energy histories can easily veer into geographical and environmental determinism. And *Powering Up Canada* largely lacks such grounding. The volume hinges on the claim of the economic and demographic historian E. A. Wrigley that the industrial revolution was characterized by a shift from “organic” (biomass and human and animal muscle) to “mineral” (fossil fuel and nuclear) energy. Unsurprisingly, Wrigley is set up as a straw figure; the Canadian reality, the

reader is told, is more complex than the organic-mineral dichotomy implies. Hence, the importance of wood biomass well into the so-called “mineral” era.

But Wrigley is never really dispatched, or even meaningfully problematized. Indeed, each of the volume’s chapters are devoted to an energy form and divided into organic and mineral sections. And this single-resource treatment of energy perpetuates the very teleology the organizers of this project say they are trying to complicate, reinforcing the myth of clear-cut energy successions. The fact is that most advanced industrial countries eventually came to exploit all available primary energy forms concurrently, a condition the Obama administration termed “all of the above.”

So the volume’s theoretical and conceptual claims are not always consistent. For example, the introduction highlights the belief of the energy historian Roger Fouquet that energy transitions are driven by a search for “cheaper and better” energy, with the suggestion that this is no less true in Canada (p. 15). Elsewhere in the volume, however, the reader learns that national security, corporate welfare, and nation building were significant factors in Canadian energy politics. Laurel Sefton MacDowell notes, for example, that the nuclear sector was stimulated more by the federal government’s interest in protecting mining interests following the decline of the U.S. military uranium market in the early 1960s than in satisfying growing demands for power.

The volume’s take on oil and gas is uneven, particularly as regards the relationship between provincial, federal, and transnational interests. In the chapter devoted to petroleum liquids, Steve Penfold suggests that the bifurcation of the Canadian market into zones supplied by Alberta oil (points west of the Ottawa River) and foreign, mainly Venezuelan, oil (points east) was the result of a hidden hand operating according to “economic sense” (p. 287). In the following chapter, by Sandwell and Colin Duncan, on manufactured and natural gas—one of the volume’s best and most comprehensive—the reader learns that this ostensibly natural oil geography was largely the contrivance of the transnational companies that had long dominated the Canadian market and shaped it in their own interests.

For a volume whose stated ambit is so large, moreover, there are some unexpected lacunae. The book has little to say about Alberta’s tar sands, the source of most current Canadian oil production and one of the world’s worst sites of environmental despoliation. Nor is much made of the continental integration of energy resources, especially in the years since NAFTA. As core themes of contemporary studies of Canadian energy and environment, these topics also align with broader concerns in many fields of social science inquiry.

To their credit, the volume authors admit they have not been able to address all issues and promise to take them up in subsequent works.

Nevertheless, a number of important, if not entirely surprising, take-aways can be gleaned from this book's thirteen chapters. Patterns of Canadian energy use have been determined by irregular resource distribution across a vast hinterland, relatively late and regionally asymmetric industrialization, and the economic and political dominance of the United States. Comfort and convenience have come at a tremendous environmental cost very often borne chiefly by indigenous peoples, a subject the volume treats well in reference to megaprojects of hydroelectricity and nuclear power but, strangely, not oil.

Surely one of the most comprehensive treatments of energy in Canadian society to date, this book breaks some new ground in exploring material culture in this context. What is missing is interpretation, a sense of what practices of energy use reveal of the values of the energy-consuming society and its place in the world. The volume is relatively weak on the history of the business of energy, a shortcoming that stems in part from its narrow national focus and reluctance to discuss the implications of the dominance of transnational and particularly American capital and expertise in the Canadian industry, especially in its Alberta heartland. In this regard, the book does not really exist in a vacuum and might have benefited from engagement with authors like Andrew Nikiforuk (*Tar Sands* [2010]), Paul Chastko (*Developing Alberta's Oil Sands* [2004]), and John Richards and Larry Pratt (*Prairie Capitalism* [1979]). For specialists in Canadian history, *Powering Up Canada* offers plenty of fascinating information, but as a comprehensive energy history, the whole is less than the sum of its parts.

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Engines of Empire: Steamships and the Victorian Imagination. By Douglas R. Burgess Jr. Stanford: Stanford University Press, 2016. 342 pp. Figures, bibliography, notes, index. Cloth, \$35.00. ISBN: 978-0-8047-9806-8.

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Reviewed by Susan Barton

Douglas R. Burgess's book, *Engines of Empire: Steamships and the Victorian Imagination*, is both entertaining and scholarly; its narrative