Daniela Russ
Working Nature: A History of the Energy Economy
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In *Working Nature: A History of the Energy Economy*, Daniela Russ offers a rigorous and conceptually ambitious rethinking of energy as a historical category. Rather than treating energy as a stable material substrate underpinning economic life, Russ interrogates how 'energy' itself has been constituted through scientific practices, administrative techniques, and socio-political arrangements. In doing so, the book positions itself within (and pushes beyond) recent scholarship in environmental history and the history of science that has emphasised the co-production of knowledge, nature and power. Its central claim is both simple and far-reaching: energy is not merely used by societies but historically made.

The opening chapter, 'Does Energy Have History?', lays the conceptual groundwork. Russ argues that energy, far from being directly observable, is an abstraction dependent on measurement, calculation and standardisation. Emerging in the nineteenth century alongside developments in thermodynamics and political economy, energy became a unifying metric capable of translating diverse natural processes into commensurable units. By historicising this abstraction, Russ challenges the apparent neutrality of energy as an analytical category. The effect is to unsettle narratives in which energy appears as a passive input into industrialisation, instead revealing it as an epistemic construct shaped by particular historical conditions.

Chapter 2, 'Electric Resistance', turns to electrification, foregrounding the frictions embedded in the expansion of energy systems. Russ mobilises the concept of resistance in both its technical and social senses, drawing attention to the ways in which electrical infrastructures were shaped by negotiation, constraint, and contestation. Electrification, often narrated as a linear process of modernisation, emerges here as uneven and incomplete, mediated by labour relations, consumer practices and infrastructural limitations. This emphasis on resistance productively complicates triumphalist accounts of technological progress and highlights the situated nature of energy transitions.

In Chapter 3, 'Governing Energy', Russ examines the institutional frameworks that render energy legible and governable. Through systems of accounting, regulation and planning, energy is transformed into an object of policy and control. Crucially, these mechanisms do not simply describe pre-existing realities but actively produce them, generating new forms of expertise and authority. This chapter demonstrates how energy governance operates at the intersection of knowledge production and state power, reinforcing the book's broader insistence on the inseparability of epistemology and political economy.

Chapter 4, 'The Value of Coal', provides a more grounded historical analysis of how particular energy sources acquire economic and social significance. Russ shows that coal's dominance in industrial economies cannot be explained solely in terms of its physical properties. Instead, its value was constituted through labour regimes, market structures and cultural meanings. By situating coal within these relational contexts, this chapter connects the abstraction of energy to the material realities of extraction, labour exploitation and environmental degradation, offering one of the book's most compelling syntheses of conceptual and empirical analysis.

Chapter 5, 'Forces of Nature, Sources of Energy', extends the argument by examining how natural processes are reconfigured as energy resources. Russ traces the transformation of wind, water and heat into quantifiable and exploitable 'sources', emphasising the role of scientific and technological mediation in this process. This reframing, she argues, reshapes human engagements with the environment, rendering dynamic ecological processes calculable and subject to economic valuation. The chapter resonates with broader debates on the commodification of nature, while maintaining a distinctive focus on the epistemic conditions that make such commodification possible.

Taken together, these chapters advance a coherent and persuasive argument: energy is not a pre-given foundation of economic life but a historically contingent category that mediates relationships between humans, technology and the environment. One of the book's major strengths lies in its sustained attention to abstraction, particularly in showing how energy becomes measurable, comparable and governable, an aspect often taken for granted in more materially oriented energy histories. In this respect, Russ offers a valuable corrective to approaches that privilege resources and technologies over the conceptual frameworks that render them meaningful.

At the same time, this emphasis on epistemic construction occasionally comes at a cost. While Russ does address labour and environmental degradation, these dimensions sometimes appear secondary to the analysis of measurement and governance. As a result, the asymmetrical distribution of energy's social and ecological consequences (central to much environmental history) remains less fully developed than it might be. This is particularly evident in the book's limited engagement with non-European contexts. The absence of sustained discussion of colonial and postcolonial energy regimes leaves open important questions about how alternative epistemologies and practices of energy might complicate or challenge the framework advanced here. In foregrounding abstraction, the analysis risks flattening the uneven and often violent material histories through which energy systems have been constituted.

Despite these reservations, *Working Nature: A History of the Energy Economy* represents a significant intervention in the historiography of energy. By shifting attention from energy as a material input to energy as a historically produced and contested category, Russ opens new avenues for inquiry at

the intersection of environmental history, political economy and the history of science. The book not only complicates established narratives of energy transitions but also prompts a reconsideration of the epistemic foundations through which nature itself is rendered calculable and governable. In an intellectual and political moment defined by ongoing energy crises and ecological uncertainty, this is a timely and thought-provoking contribution.

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