On Barak. *Powering Empire. How Coal Made the Middle East and Sparked Global Carbonization*. Oakland: University of California Press. 2020. 321 pages. ISBN-13: 9780520310728.

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The discovery of crude oil in Khuzestan on the Persian Gulf, in 1908, played a major role in the formation of the region we now call the Middle East. Since then, the region has been associated with oil. Oil has brought wealth and prosperity as much as conflict and instability to the Middle East, as it has accelerated the race to seize control of the region's oil reserves. Furthermore, as a non-renewable fossil fuel, it has contributed to climate change. In his latest book, *Powering Empire*, On Barak revisits the narrative that oil has transformed the region like never before, and foregrounds coal in the modern history of the Middle East. Based on extensive research that includes material from private and state archives in the UK, India and Turkey, from newspapers and periodicals in English, Arabic and Turkish, as well as from numerous secondary sources, he suggests that coal has not received the attention it deserves in the pre-colonial, colonial and post-colonial histories of the region, although it 'served as the main building block for the Middle East, both physically and conceptually' (p. 2).

In *Powering Empire*, Barak makes two major points, while tracing the history of coal in its techno-political, social, cultural, environmental and religious contexts. Firstly, he confronts imperial and colonial histories of subjugation, control and exploitation, whose main protagonists were usually Europeans. He posits that the mutual interdependence of imperial expansionism and energy – 'coalonialism', in his coinage – enabled the British Empire to thrive in the Middle East and develop 'landscapes of intensification' (p. 4), which concurrently stimulated an increase in coal production in the British Isles. Export coal generated technological change, promoted commercial growth and fostered agricultural development in the Middle East, which in turn fuelled industrialisation and capitalistic accumulation in Britain. He likens the British coal empire to 'a giant octopus', whose tentacles 'through which much of the British Asia traffic flowed from the nineteenth century, were narrow channels composed of coal depots, artificial canals, and deep-water ports, as well as elaborate new political, legal, religious, and economic arrangements' (p. 10).

Secondly, Barak makes the point that coal and its infrastructures cannot be analysed, understood and explained in isolation from other energy sources. He points out that coal was a power-generating fuel and a 'mineral' energy source that coexisted with, complemented, and eventually replaced the existing 'organic' energy sources, including water, human and animal labour. He also shows that oil-fuelled infrastructures in the present-day Middle East, such as power and desalination plants, owe their

existence to coal and coal-fuelled infrastructures that were built in the nineteenth and early twentieth centuries.

Powering Empire consists of six chapters, each documenting 'a transformation that begins with the adoption of coal and ends with the arrival of oil in the early twentieth century' (p. 10). In the first three chapters, 'Water', 'Animals' and 'Humans', Barak interrogates the notions of 'energy regimes' and 'energy transition' and suggests that coal was interconnected with other energy forms. 'Animals, coal, and water', he claims, 'constantly carried one another as fuels and prime movers, frequently shifting roles, imitating each other, collaborating and competing' (p. 52). In this first part, the author offers several interesting connections. For example, he shows that desalination by means of coal-powered steam engines supplied drinking water and increased irrigated food production in arid settings. Under 'coalonialism', animals were no longer needed to draw water from wells, for field work or for transportation; rather, they were raised for their meat. The industrialisation of meat enabled and gave rise to the emergence and use of new technologies such as ice-machines and refrigerators, which transformed and modified the slaughtering, transportation and consumption of animals.

The second part of the book also contains three chapters: 'Environment', 'Risk' and 'Fossil'. Each chapter focuses on a certain – material, financial or spiritual, maritime or subterranean – environment shaped and reshaped by coal. Barak also points out in this section important relationships between coal, global capitalism and the history of the modern Middle East. For example, he demonstrates that coal, which has been associated largely with industrialisation in Britain and Western Europe, played a critical role in 'the extension of British military and commercial power through interconnected maritime footholds and dryland enclaves, and the construction of the 'artificial archipelago' that enabled it' (p. 117). He offers unique insights into the role of coal in the movement of materials, people, species and ideas across the world, and explores the social, economic, environmental and cultural impacts of coal mines, coal depots and light houses – or what he terms 'coalonial infrastructure' – on the places they were built.

Powering Empire brings political, social, economic and environmental histories of the Middle East together and speaks to several audiences: colonial and post-colonial historians of the Middle East and the British Empire, energy historians, environmental historians, historians of science and technology, and more importantly, researchers of environmental and energy humanities. Barak situates coal at the intersection of different histories, geographies and contexts, and shows its historical significance to the Middle East, the British Empire and beyond. While gaining a different perspective and acquiring new information, each audience may find a lack of general information on a specific political, economic, social, cultural or ecological aspect of coal. Environmental historians may complain that the book barely touches upon the socio-ecological impact of steam-powered locomotives and riverboats. Climate researchers and historians of climate science may protest that the author has not addressed emissions related to powering, heating and cooking with coal.

However, in my view, a significant deficiency of the book is that it provides a history of coal not for the entire Middle East, as the title suggests, but for parts of the Arabian Peninsula and the Red Sea. It is admissible that Barak chose to focus on territories under the British Crown, but surprisingly, he leaves out of the account the Persian Gulf, Iraq and Iran. Nevertheless, considering the many strengths in Barak's analysis of, and approaches to, the historical entanglements between coal and global capitalism, it would be unfair to belabour this point. In all, *Powering Empire* is a valuable and ground-breaking work and should be of interest to any scholar working in the fields of the history and culture of the modern Middle East and British Empire.