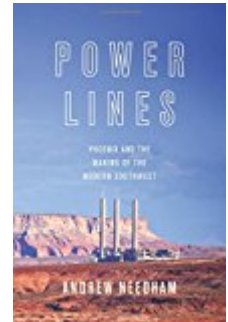


**Andrew Needham.** *Power Lines: Phoenix and the Making of the Modern Southwest.* Politics and Society in Modern America Series. Princeton: Princeton University Press, 2014. Illustrations. 336 pp. \$24.95, paper, ISBN 978-0-691-17354-2.



**Reviewed by** Ben Ford

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Andrew Needham's *Power Lines: Phoenix and the Making of the Modern Southwest* is a remarkably complex, sophisticated look at the causes and consequences of metropolitan growth in the American Southwest in the mid-twentieth century. Needham contributes original research based on newspapers and magazines of the era, governmental reports, and archival research, especially the archives of the Arizona Historical Foundation and the Arizona History Society in Tempe, Arizona. However, Needham's major original contribution is more about perspective and arrangement. Though the author does not describe it this way, *Power Lines* attempts something like a bird's-eye view of the growth of Phoenix. Needham identifies his innovation to be his investigation of the consequences of metropolitan growth on the Navajo, on whose land coal was mined and burned to provide electricity to metropolitan centers. Needham goes "beyond the crabgrass frontier," as he titles the introduction, signaling both his reliance on, as well as his intention to go beyond, Kenneth Jackson's look at suburban Ameri-

ca in *Crabgrass Frontier: The Suburbanization of the United States* (1985). However, Needham underestimates his originality. He could have simply written a book about energy development on Navajo territory that identified metropolitan growth as its cause. What Needham accomplishes is far richer: a synthesis of the history of energy usage in Phoenix at midcentury that incorporates the experiences of the Navajo. Along the way, he touches on environmental history and the history of environmentalism, business history, the history of technology, the history of the Navajo in the middle of the twentieth century, and the rise and fall of the Bureau of Reclamation. However, at its core, *Power Lines* is a history of energy. This includes its natural history, consisting of its role as a shaper of landscapes, the generation and transmission of electricity, and policy decisions regarding energy.

*Power Lines* is divided into four parts. In part 1, Needham describes a region whose people lived in relative isolation from one another and shows how that isolation ended with the construction of

Boulder Dam, which imposed relationships on the peoples of the Southwest (thereby creating the modern Southwest, as Needham would have it). For instance, Boulder Dam made the Colorado River more manageable, which made it feasible to divert its flow. To divert the flow, Parker Dam was built downstream. Parker Dam diverted the Colorado to Southern California, and this outraged Arizonans, leading to the deployment of the “Arizonan Navy,” a comical debacle that nevertheless demonstrated that a new relationship had been created between Los Angeles and Phoenix, a relationship imposed by the creation of Boulder Dam (p. 25). Similarly, exhausted soil from Navajo territory had long been carried by the wind into the Colorado River. After the construction of the dam, this soil threatened to accumulate in the reservoir the dam created. In response, Bureau of Indian Affairs imposed a traumatic policy of stock reduction upon the Navajo.

Part 2 describes the combination of local, state, and federal actions and policies that transformed Phoenix from a small agricultural community into a manufacturing metropolis between the 1930s and 1960. Building on New Deal programs that had promoted debt-driven consumerism, postwar policymakers promoted growth liberalism, which regarded the growth of cities and their suburbs as the drivers of the national economy. Needham’s contribution is largely in using archival research, as well as newspapers and magazines of the period, to describe the role of Phoenix business leaders in making use of these policies to reshape Phoenix.

Part 3 describes the development of coal resources and the construction of power plants on Navajo territory. US policymakers needed a dramatic increase in energy development in order to provide for the household electrical consumption of metropolitan areas, such as Phoenix. Federal policymakers turned to coal because there were massive reserves in the West and because advances in electrical transmission technology had

rendered it unnecessary to transport the coal itself, an expensive endeavor. Instead, coal could be burned near its source and the electricity cheaply transmitted to remote metropolitan areas. For the Navajo, the mining and burning of coal on Navajo land seemed to promise an antidote to poverty.

Part 4 describes the emergence of the modern environmentalist movement and the American Indian movement, and specifically Navajo nationalism, in the late 1960s and 1970s. The environmentalist movement encouraged coal development on the Colorado Plateau by stridently opposing the construction of additional dams on the Colorado River. However, the environmentalist movement also brought about legislation that required a thorough and public reporting of the impact of development on federal land. Coal development had catalyzed a youthful Navajo nationalist movement that opposed the development of Navajo energy resources by outsiders. These Navajo were able to use information in Environmental Impact Statements to help defeat a proposal for coal gasification plants to be built on tribal lands in the late 1970s. Metropolitan growth had stimulated a need for additional energy resources, and the development of those resources helped spur movements opposed to the consequences of that development.

Needham portrays metropolitan energy demands, and the federal policies that favored metropolitan growth, as the drivers of these new relationships, but he does not neglect the role of technology in making these relationships possible. For instance, the postwar revival of coal development was made possible by the introduction of 345-kilovolt transmission lines in the late 1940s, the advance in transmission capability mentioned above. However, the history of the development of this technology and others is left unexplored. Vital technological advances are mentioned only insofar as they enabled particular policy decisions. “Electrical engineers” step forward to place

a new capability at the disposal of political and business leaders and then return to obscurity. They do not have names or affiliations or anything to say about their work. Of course, Needham is juggling an extraordinary number of actors and developments, and he goes above and beyond what might be expected in terms of incorporating technology into his narrative. Yet it is striking that the electrical engineers and others who contribute insufficient but necessary components of his web of causation are the only major group of actors in *Power Lines* that are not treated in depth. We meet Phoenix boosters, federal officials, Navajo political leaders, myriad governmental agencies, several energy companies, and countless projects. The only names associated with technological developments that appear in *Power Lines* are Edison and Westinghouse. They are mentioned in passing, do not appear in the index, and moreover belong to an earlier period than that under consideration.

*Power Lines* contains about a dozen well-selected, black-and-white images (my personal favorite being that of the public celebration in Los Angeles in 1936 when Boulder Dam electricity was first used to light the city's streets). However, there is no list of images, nor is there a bibliography, which means that you have to go searching for the original citation of a work in order to find its full details. Additionally, hopefully future editions will contain a list of abbreviations used in the text. Their sheer quantity makes it necessary to often flip through the book searching for an abbreviation's first usage in order to recall precisely what it stands for.

Nonetheless, *Power Lines* achieves a very impressive, relatively concise synthesis of the expansion of the use of electricity in Phoenix in the mid-twentieth century while at the same time introducing original research.

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