

Introduction

Electricity is perhaps the most necessary and the most revolutionary thing which you can take into the rural areas. The moment you take electricity, all kinds of things begin to move.

Petty industries grow up, agriculture is affected; everything is in fact affected.

The whole life of the people is changed.

—Jawaharlal Nehru, *prime minister of India, 1947–1964*

Since electricity's invention in the late nineteenth century, the spread of electric utilities has come to signify the advance of modernity. The representation of electricity in India is no different. Consider for instance its role in *Swades: We, the People (Homeland: We, the People)*,¹ a 2004 Hindi film that received critical acclaim in India and abroad. *Swades* tells the story of Mohan, a US-based NASA employee who returns to India in search of his childhood nanny. Mohan, played by Bollywood star Shah Rukh Khan, finds her living in a village that is plagued by a host of problems commonly ascribed to rural India: poverty, social discrimination, and a general resistance to ideas of progress. A few turns of the plot and a rising love interest convince Mohan to dedicate his time in India to improving conditions in the village. With his money, technical knowledge, and a few local recruits, he builds a small hydroelectric plant on a hillside just outside the village. Watching as electricity wires are strung along improvised poles, the older women of the village express awe that *bijli* (electricity) is finally coming to them. Mohan gives the signal to release the flow of water through narrow channels, and as the waves hit the turbine, everything changes, both for Mohan and the villagers. The khadi-clad local politicians, who had doubted the project from the start and had contributed neither their own labor nor any of the state's development funds, stand aside as electricity travels through the makeshift grid to light a single bulb in the hut of one of the village's oldest residents. The villagers cheer and embrace the promise of technological progress. Mohan finds romantic as well as patriotic love, leaving his coveted

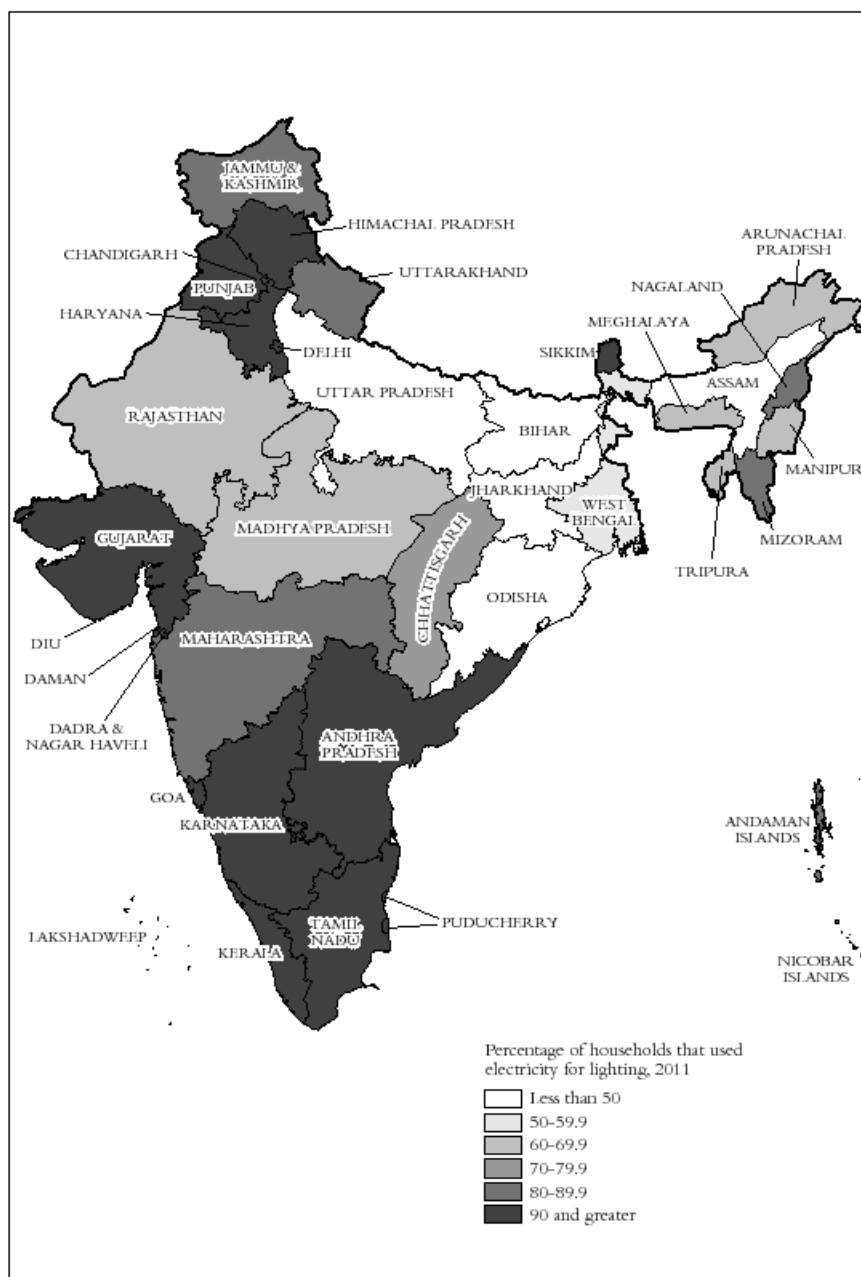
foreign post to resettle in India. We end with Mohan, having devoted himself to developing India through electrification, now himself Indianized as a result of his efforts to modernize the village.

The film's hero inherits a belief in the capacity of electricity to not only improve material conditions but also catalyze broader social change, and this belief has been a mainstay of the Indian nationalist vision for modern development, and indeed for nationalist modernizers everywhere throughout the twentieth century. When Nehru spoke the words that open this chapter, more than three-quarters of India's population lived in rural areas, and only a small fraction of the total population had access to electricity. Nehru's belief in the power of electricity was a belief in the potential transformation of India in the postindependence era as well as a vision of its unification through modernization. Electricity would make factories hum, irrigate farms, illuminate public spaces, and lengthen the study day of Indian students. Practically, the network would consist of generating plants that could take advantage of India's plentiful coal supplies and ample rivers, and a robust transmission grid to transport electricity over long distances and through dense distribution networks that would penetrate cities, towns, and even the most remote Indian villages. The aim was to electrify India as a whole, bring it fully into the developed world, and in doing so, unify a socially and politically diverse country.

Nehru's ambition has not been realized yet. Despite four decades of planned economic development followed by close to twenty years of dramatic economic growth and despite the fact that electricity is now considered to be essential, today more than 400 million mostly rural Indians have no access to electricity. India, with 17 percent of the world's population, accounts for close to 40 percent of the world's population without electricity. There are thousands of real examples of the fictional village in *Swades*, which was itself based on the story of diasporic Indians who returned to their homeland to create sustainable rural electrification projects.

This book begins by asking why, despite the intentions of national politicians like Nehru and the commitment of development planners, the central state in New Delhi has not exercised its writ across India's heterogeneous federation to make electricity, a quintessential commodity of the twentieth century, available to all Indians. Today there is tremendous variation in electricity access across states; in some, nearly all households have electricity, while in others, it is available to fewer than one in five (see Map 1.1).

The political and social character of India's subnational units vary widely, one consequence of which is that the state looks and acts differently in dif-



MAP 1.1 Household electricity use for lighting in India, 2011
 SOURCE: Census of India, 2011.

ferent places. In *Electrifying India*, I argue that it is this variation in the social and political foundations of the state at the provincial level that accounts for variation in patterns of infrastructural development, particularly in the crucial decades from the 1960s to the 1980s. In those parts of the countryside that were successfully electrified, the gains were due to neither nationalist idealism nor only technocratic plans. Instead, rural electrification occurred either when rural constituencies became politically influential in state governments or when farmers mobilized to demand a larger share of development resources. The initial conduit of electricity into rural India was for its productive impact in agro-industries and for irrigation; household access followed. The results from rural electrification have often been mixed. Certainly, where it occurred, rural electrification profoundly impacted agrarian productivity as well as rural standards of living. But it also has led to ecological crises, eroded the stability of the electric grid, and in some cases, exacerbated inequality between rural citizens.

In this book, I explore a global phenomenon of modernization and development. Building electric infrastructure was one of the signal pursuits of modernizing polities throughout the twentieth century, and India was no exception. Just as railroads were fundamental to the project of state building during the British colonial period, and emblematic of the “positive” effects of a modernizing colonial force, an extended and interconnected electricity grid was at the heart of postcolonial India’s development plan as well as its creation as a unified modern nation. From Nehru’s pursuit of big dams to generate hydroelectric power to his early patronage of a civilian nuclear energy program, electrifying India has been the backbone of the nation’s transformation during the last sixty-five years. As an indication of energy’s centrality, consider that during the first thirty years after independence, despite myriad pressures on public finances, nearly one-fifth of all planned expenditure was devoted to the power sector, making it among the largest categories of public spending.

A compelling body of work has shown that the process of electrification, while highly technical, is never neutral. In every instance, social and political contexts shape the way that electricity becomes embedded in a given place. In turn, the modalities of electrification—whether state owned, privately owned, or mixed sector; whether highly local or highly centralized; whether produced by water or fossil fuels—determine what kind of impact electricity will have.² For example, in the mostly state-owned electric systems of Scandinavia, the Netherlands, and Germany, most homes were electrified by 1930. By contrast, levels of household electrification in America,

where private utilities predominated, were far lower in the same period. Instead, American cities benefited from more public lighting and commercial advertising, spectacular displays that were much more rare in Europe at the time.³

In India, too, the process of electrification has been conditioned by social and political contexts that vary from state to state. I explore these processes and contexts in Chapters 2–5. My analysis is bracketed by two pieces of legislation: the Electricity (Supply) Act, 1948, and the Electricity Act, 2003. The first established the massive state-owned utilities—State Electricity Boards, or SEBs—which the second dismantled, clearing space for private firms, independent regulation, and market competition. Chapter 2 examines debates and conflicts throughout this period from the vantage of New Delhi. In the subsequent chapters, I turn to three Indian states—Maharashtra, Odisha, and Andhra Pradesh—to explore the conditions and consequences of electrification in each, from the time of their formation until 2003.⁴ Together the four chapters show how a single set of rules emanating from Delhi was implemented with divergent effects in federal India.

In exploring the politics and history of electrification in India, this book also thinks through two sets of larger debates. The first explores the political economy of market reforms. I probe the longer politico-historical connections across two time periods that are usually treated as distinct: the period of state oversight and ownership from the 1950s to the 1980s, and the period of market reforms from roughly the early 1990s onward. I argue that the earlier period of an advancing state apparatus conditioned in important ways the manner of the state's retreat in the following period. My aim here is to historicize market reforms across these two political-economic periods in India.

A related concern is to understand the role of the Indian state in development. Despite the inordinate authority of the central Indian state to determine the country's development agenda, collect and disperse revenue, and wield military power, India's states have commanded authority in vital domains, including key pieces of the social and physical architecture of the Indian state and economy. I demonstrate this through the empirical lens of electricity, which I suggest is a quintessential piece of the modern infrastructural state as well as a critical feature of the national imagination of Indian development and modernity. State-level regimes produced and allocated goods in sectors like electricity in ways that attempted to advance distinct political economic visions, albeit sometimes unsuccessfully. These political economic ideologies were the product of the character of the regional

state and its interactions with regional constituencies, both rural and industrial. In no case was electricity simply provided; where electricity appeared, a politics of development and differentiation was at play.

In the next section, I position my book by briefly surveying the theorists and debates that have most influenced my thinking in this project. I do not expound at length on these literatures in order to give more space to the empirical substance of the book. However, these bodies of scholarship have been instrumental in shaping my understanding of the politics of market reforms and the role of the Indian state in development.

Historicizing Market Reforms

Why and how do nation-states vacate economic spaces to the forces of competition and private ownership? This question has inspired a voluminous literature on the global turn to the market, with books and articles published almost continuously on the topic from the early 1980s to the present. In India, it is increasingly provincial governments and not the central government that dictate the speed and direction of market reforms. Examining the process of change in the electricity sector—the purview of the state, not central, governments—then, is a useful entrée to the dynamics at work in the broader arena of India’s market reforms. And yet here, many of the dominant insights about market reforms fail to fully make sense of why electricity restructuring and privatization in India has been so uneven across states.

When have market reforms occurred and who has pushed them forward? Multiple explanations have been offered in recent years—none of which comes to grips with the uneven process of privatization and restructuring in the electricity sector. Even with key politicians and technocrats backing privatization, some states have stumbled badly in effecting reforms, while others have unaccountably succeeded. Much of the work on the political economy of market reforms has focused on prevailing institutions, coalitions, and ideologies to explain the timing and manner of market reforms. Many of the theoretical differences within this body of literature pivot around how both the state and state-society interactions are conceptualized, and whether economic policies are believed to be driven by social interests, the initiatives of political elites, or some feature of their interactions.

Among those who emphasize the importance of social forces and state-society interactions, much of the debate revolves around understanding how winners and losers of reforms align themselves politically vis-à-vis a market-reforming state, yielding several sets of contrary insights. On the one hand,

we can expect that when groups in society experience the inevitable costs of reforms, the losers will push back and force once-radical measures to be tempered and hence made less effective.⁵ On the other hand, we know that market reforms too have distributional implications, and coalitions of actors who stand to benefit will push them forward if possible.⁶ A focus on social alignments is useful to understand the dynamics at play in the electricity sector, the distributional implications of which are often loud and clear. Without an explicitly historical analysis, though, we are left taking social alignments as a given rather than understanding how they are produced by previous eras of state intervention.

Shifting the focus from social interests and their interactions with the state to the state itself more directly, a body of literature specifies which types of state elites, operating under what kinds of conditions, are likely to drive market reform. Some scholars emphasize that political outsiders, whose tenure is not associated with the origins of existing institutions, act with greater decisiveness.⁷ Related to this is the idea of a “change team,” made up of a set of willing and capable technocrats who are politically isolated but have the crucial backing of the head of state.⁸ To further highlight the importance of political elites and their cognitive frames, some scholars suggest that an ideological sea change is an essential prerequisite for new policy initiatives.⁹ Running through many of these accounts is the importance of economic crisis as a proximate cause of the market reforms of the 1980s onward. Such a crisis clears space for a new wave of political actors to enter the scene and dismantle the existing institutional architecture.¹⁰ A less political version builds on the idea that technocratic rationality can guide political and policy change in the aftermath of economic crises.

Many of these theories of market reforms have illuminated aspects of the Indian experience.¹¹ And yet the unevenness in market reforms in the electricity sector remains unexplained even by this substantial tool kit of causal arguments. In electricity, because market reforms threaten to take away valuable subsidies from politically influential constituencies, reform by “stealth” is not as viable as in other sectors.¹² The most committed advocate of reforms in India during the 1990s at the state level was arguably Andhra Pradesh’s chief minister, N. Chandrababu Naidu. Although he commanded a great deal of respect from international financial institutions as well as like-minded policy makers in New Delhi, his plans to restructure and privatize his state’s public utility fell short against popular protests and opposition. Likewise, a purely technoeconomic reckoning of the electric utility industry cannot help us to explain which state governments chose market strategies

and which rejected them. Although the first state to embrace utility privatization—Odisha—did not have the strongest utility, neither was it the worst off.¹³ Although many existing accounts of that state's privatization emphasize the financial straits of the state government, my research finds this fact to be important but not determinative.

Despite the obvious as well as subtler differences across this scholarship on the political economy of market reforms, one feature that much of it shares is a temporal focus on the years, months, and electoral cycles that just precede market reforms. My proposition in this book is that how and with what effect states intervened in the economy in a much earlier period of state expansion will add to our understanding about whether and how states retreat in the contemporary period. Such a perspective can contribute to explaining the substantial variation that persists in how states have gone about turning to the market, despite the pressures of policy convergence in a globalizing world. My aim is to put market reforms into longer genealogies of Indian states' variable engagement with economic sectors and spaces.

To get traction on this question of how the past constrains and informs the present, I analyze three constitutive units of federal India: Maharashtra, Odisha, and Andhra Pradesh. For the past two and a half decades, India has been, like so many other countries around the world, in the midst of what is variously described as a neoliberal economic reorientation, a market transition, or a deepening integration with a globalized world economy. By looking at one sector of the economy—electricity—I can isolate more clearly the variables and mechanisms conditioning state retreat in the era of economic reforms. Specifically, I argue that the differential manner of state intervention in the electricity sector from the 1960s through the 1980s configured subsequent state retreat. Rather than viewing utility privatization and restructuring as a function of political will or ideological reform-mindedness, I show that precisely those subnational political regimes that had used the tool of electricity quite successfully to transform agricultural production from the 1960s to the 1980s were the least likely to carry out market reforms in the 1990s. Instead of pursuing the model of restructuring and privatization favored by both the World Bank and the India central government, these states opted to maintain the basic structure of their utilities while finding alternative ways to augment electricity supply and utility profitability. By contrast, subnational units with the weakest record of rural infrastructure development in the earlier decades were paradoxically best positioned to pursue market reforms in the 1990s.