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Introduction

“A Blessed Way of Life”

As the year 2000 approached, fanfare and doomsday predictions simultaneously accompanied the arrival of the new millennium and a post-industrial age. Yet, the preeminent technology of the last century’s industrial era continues to loom large. A few minutes after four o’clock in the afternoon on August 14, 2003, when a regional blackout paralyzed eight northeastern states and two Canadian cities, no one in the northeastern United States could doubt the importance of electricity in twenty-first-century America. Computers shut down, trains and subways stopped moving, gas pumps stopped working, and food spoiled by the ton.

Until the lights go out, most Americans take their unrestricted access to electricity for granted, never pausing to consider its profound impact on their daily lives. The novelty of candles and lanterns placate many of us for a few hours, after which we assume bulbs will flutter back on and we will merely have to run around the house resetting the blinking clocks. As exhibited during the blackout of 2003, lengthier power outages cripple the economy and severely compromise the lives of many Americans, regardless of socioeconomic and ethnic background.

This failure of the northeastern regional power grid continued an ongoing twenty-first-century crisis that began across the country in the far West. In 2000 and 2001, shortages of electrical energy in California forced rolling blackouts. Utilities borrowed

power from neighboring Washington and Oregon, consumers were fielding the expensive wholesale electrical power prices set by private companies like Enron, and the nightly news anchors speculated over California's economic future and the possible national impact of the events. The widespread interruption of electrical service and manipulation of the power market marked a national crisis. When a reporter asked if newly elected President George W. Bush would advocate energy conservation as a response, White House spokesman Ari Fleischer replied that high energy use constituted part of America's "blessed" way of life.¹ Other political leaders agreed, referring to electricity as "industrial oxygen" and the "flagship of the American economy." They echoed President Franklin D. Roosevelt, who said, "Electricity is no longer a luxury, it is a definite necessity."² Americans have advocated building electrical distribution lines as a primary tool for extending our values of freedom and democracy, whether to regions like rural America in 1933 or the Middle East in 2003.³ Electrical lines may connect communities to all kinds of power sources, but local characteristics have determined the nature of electricity's role in different communities.

Equity and Electricity in America

Is electricity, by the nature of its production, distribution, and use, different from other commodities? Do the principles of social equality, democracy, and distributive justice apply? Does competition ensure the affordable delivery of electrical power to everyone?⁴ The brownouts and the blackout at the turn of this century spotlighted Americans' socioeconomic dependence on electricity. Electrical power and its wide distribution historically played a vital role in stabilizing America's diverse communities and bringing them, for better or worse, into the industrial era. Americans wielded electrical power to transform, augment, unite, divide, or sustain social, cultural, and economic lives across communities and geographic regions. As the home-

stead acts and railroad accelerated American settlement after the Civil War, electrical power systems, with their elaborate and extensive infrastructure of substations, wires, towers, and poles, soon followed and spread westward across America's cultural landscapes as one of the industrial era's most prominent symbols of progress, power, and a modern lifestyle.⁵ Government agents encouraged these ideas through large federal programs that reached into diverse rural communities across the country to homogenize and assimilate them through urban technologies. Since the 1920s, most Americans have considered electricity essential to living a modern American life, and the production and distribution of electrical power continues to be a controversial political issue that challenges values of free enterprise.

Eight years before the financial crisis of 2008, the electrical industry imploded. The Enron scandal reintroduced a nationwide debate on the regulation, production, distribution, and consumption of electricity.⁶ A jury's conviction of Enron CEOs Jeff Skilling and Ken Lay on numerous fraud and conspiracy charges in 2006 generated article after article trying to make sense of the disaster that was the Enron scandal. Most writers tended to focus on the company's leaders as symbols of corporate greed and corruption: modern-day robber barons whose crimes led to the indictment of other high-profile CEOs. For many, the convictions seemed to close a sordid chapter in American business history. Yet others astutely observed that Enron's legacy raised questions about the company's business philosophy and its practices associated with government regulation of energy, particularly for electrical power. Columnists speculated about how this twenty-first-century company had changed the way American corporations conducted their business since before the Great Depression, subjecting any product or service, even electricity, to the open market.

As the fastest-growing energy company in the 1990s, Enron served as a leading advocate in the drive to deregulate the

electric industry. Enron “was going to replace sclerotic government regulation with Adam Smith’s invisible (and efficient) hand of the free market,” observed Allan Sloan of *Newsweek*.⁷ But as Harvard professor William Hogan argued, “markets only work when they are carefully regulated, not controlled by private companies.”⁸

Deregulation severs the ties between utilities and local communities, divides electrical systems among various parties, and separates the functions of power generation, transmission, and distribution. This leaves no assurance that all Americans will have access to electrical power when they want or need it.⁹ It may still be too early to assess the short- and long-term effects of deregulation on consumers, but the decision to deregulate marked a profound change in how Americans have viewed electrical power since the Great Depression, when the New Deal created a new activist role for government.

As California’s energy crisis escalated, the Energy Information Administration (an independent agency within the U.S. Department of Energy) authored a far less publicized but startling report revealing gross violations of democratic equality and distributive justice. The March 2000 report disclosed that more than 14 percent of Native American households on reservations lacked access to electricity, compared to 1.4 percent of non-Natives. In addition, Native Americans paid the highest electrical rates in proportion to their income, while consuming the least energy per household. The report cited the tribes of the West, and particularly those in Arizona, as having the greatest problems accessing electricity. Hydroelectric dams, coal deposits, oil, and uranium mines have made many Native American reservations regional centers of power production, but communities like the Navajo Nation have the highest percentage of unelectrified homes in the country (37 percent).¹⁰ The findings suggest links between what the government determines as an acceptable standard of living in America and the accessibility, distribution,

and use of electrical power (a sequence hereafter referred to as “electrification”).

The Department of Energy report illustrates the sharp divide between California and its neighboring western communities in their access to and use of industrial-age technology. Chronologically, western expansion and community building coincided with industrialization and the emergence of the electrical industry, yet few scholars have examined the interaction of these historical processes and explored electrification in the American West.¹¹ Historian Richard Lowitt indicated that the production of hydroelectricity, especially after the New Deal, essentially broke the West away from its “colonial” status to the industrial East. In 1989, historian David Nye asked others to acknowledge electricity along with the railroad as a technology that transformed the region’s settlement.¹² Yet the disparity of its distribution and use poses a challenge to historical notions of a democratic lifestyle, economy, and culture.

With the decision of many states across the West and the nation to deregulate the electrical industry by opening electrical power production, and possibly distribution, up to free-market competition, the importance of equal access to electrical power and modern technologies has become increasingly relevant. Congress held hearings in 1998 and 1999 to determine the impact of deregulation on some of the country’s most economically vulnerable communities: those in rural areas. Witnesses like Glenn English of the National Rural Electric Cooperative Association warned politicians that the high costs of rural service would “overwhelm the competitive benefit” and asked that flexibility be maintained in any federal legislation to account for local or regional differences.¹³ These events indicate a need to review the history of regulation within the electrical industry. Who has controlled the process of electrification and its impact? What influence has government oversight had on providing access to and encouraging the use of technology across the nation’s diverse communities and regions?

A Historical Review of Electricity in the American West

Throughout the twentieth century and even today, reformers and government officials have argued that those who gained access to the new technology became part of an emerging modern, industrial era in America. In the years following the Civil War, technological innovation, the rise of big business, immigration, urbanization, and the massive trans-Mississippi migrations in and around the American West transformed the United States from an agrarian nation into an industrial one. Technological innovations and mechanization spawned new economic structures, fueled new types of corporations, created new aesthetics, and inspired new ways of thinking, living, and working. Historians have long characterized this period as the Gilded Age, a phrase coined by Mark Twain to indicate an era of excess. The emergence of political movements like Populism and Progressivism, which emerged largely out of the southern and western regions to challenge and reform the power shifts of the industrial age, indicated that not all Americans shared in the wealth of the era. Decades earlier, socialist theorist Karl Marx characterized technology as “a weapon in the struggle between classes.” Under laissez-faire capitalism, private parties determined who received the benefits of urban, modern technology and when. Marx advocated public control of technology in order to eliminate economic competition and ensure equal access to technology across class lines.¹⁴

The public regulation of utilities and other urban services was a prominent political issue in the early twentieth century. Some historians have enlisted the phrase “power wars” to describe the highly charged political debates over who should control the distribution of electricity in America during the 1920s and 1930s. Since the Great Depression, state and federal governments have maintained a strong regulatory hand in the electrical market by determining who has access to power lines and how much con-

sumers pay for its delivery. Under the assumption that building reliable electrical systems necessitated the formation of natural monopolies, the 1935 Public Utility Holding Company Act granted state and federal governments the power to regulate utilities in the interest of consumers and to established a type of “regulatory compact.”¹⁵ In an effort to encourage environmental responsibility and alternative energy, the 1978 Public Utility Regulatory Policies Act opened up wholesale power competition for industrial customers and paved the road for retail competition.

Mark Rose and Jay Brigham have specifically explored electrification in communities throughout the early twentieth century, emphasizing the importance of localism in the electrification process.¹⁶ Literature about local electrification efforts outside major urban centers has primarily revolved around the New Deal’s Rural Electrification Administration (REA), which provided loans and guidance to rural communities to build electrical systems when investor-owned utilities considered such communities unprofitable. Most studies about the REA have taken a broad agency overview or focus on the Southeast or the Midwest. Others have also claimed that the REA had less impact in the West than in other regions, based largely on the idea that hydroelectricity and irrigation presumably already made electricity more available to farmers.¹⁷ Yet, as historians of the region attest, the West deserves examination specific to its own historiography, history, and geography.

At the 1893 World’s Fair in Chicago, Frederick Jackson Turner, arguably the most influential interpreter of the American West, linked the West with the values of technological progress and equality in his famous thesis on the “significance of the frontier.”¹⁸ Referred to as “The White City,” the Chicago exposition featured fantastic displays of electricity to celebrate the idea of technology as progress and as America’s future. Still Manifest Destiny and Thomas Jefferson’s dreams of an agrarian nation continued to penetrate the hearts and minds of millions of eigh-

teenth- and nineteenth-century Americans, including Turner. According to the essay, the self-sufficient yeoman farmer had embodied the cherished republican values of independence, equality, and democratic opportunity. As long as the western regions offered “free land,” Turner argued, America could remain democratic and farmers would continue to preserve and transplant those yeoman traits on the frontier as they “progressed” — politically, culturally, and geographically — across the Great Plains, the Rocky Mountains, and the southwestern deserts to the Pacific Ocean. However, Turner argued that the 1890 census revealed (at least statistically) that the frontier had “closed.” The plow, the railroad, electricity, and other products of industrialization had encouraged so many settlements that the new demographics threatened to end Jefferson’s pastoral ideal and America’s rural tradition, even in its western lands.

In his classic work *The Machine in the Garden*, Leo Marx recognized the complexity of interpreting the modern American West in strictly rural, agrarian terms.¹⁹ Many historians of recent years even argue that the West has become more urban than rural since the nineteenth century. “Cities do more than tie together open spaces and isolated individuals of the American West,” claims Carl Abbott in *The Metropolitan Frontier*. “They also link the continental space into national and international systems for the exchange of people, products and ideas.”²⁰

As others departed from writing about the West as only a rural place, some historians initiated discussions about the state of the rural West in the twentieth century.²¹ Technological infrastructure had connected people living on farms and in isolated towns to urban dwellers. Technologies like electricity broke down traditional rural community networks and created new relationships. While rural residents moved en masse to the cities, urbanites also migrated into rural communities to escape the city. When they got there, they demanded urban services.²²

The fluidity with which people moved (and move) between

“rural” and “urban” residences opens the definitions of those terms to wide interpretation. And electricity further complicates the matter. The U.S. Census Bureau historically identified a rural community by population density (less than 2,500 people), but one might consider cultural attributes as well. In 1960 a government study of rural life in America observed: “The industrial society in which we live is urban through and through, especially in the United States, where the farmer is a businessman who keeps a sharp eye on domestic and world markets, applies scientific methods in seeding and feeding, owns a car and a television set, and has his wife and daughter dressed according to the latest fashion. Ecologically speaking, the American farmer does not live in a city, yet his ways are citified. He is of the city even though he is not in the city.”²³

Adopting this view, the arrival of modern technology like electricity—and more recently cable, computers, and the Internet—in rural areas in many ways “urbanized” them by providing miners, ranchers, farmworkers, and Native Americans access to urban information, services, and living standards. To a significant degree, such technologies accelerate the disappearance of a distinct landscape and lifestyle between cities and their surrounding hinterlands. Technology’s impact on a community was and is complex. This study follows the view advanced by Hal Barron that rural areas became “urbanized” only to the extent that rural people used similar technologies and services. They did not wholly adopt urban values and cultural practices.²⁴ One can question whether the impact of electricity upon rural communities was progressive, beneficial, appropriate, or even detrimental to particular rural communities, but those communities largely determined the need for, access to, and use of electrical power.

Considering the historiography of both the American West and technology raises interesting questions for examining electrification and its role in redefining the rural community and

lifestyle. Many of the “New Western Historians” have assailed Turner’s notions of “progress” when it came to white settlement of the region and instead emphasized how diverse groups responded to that settlement. And likewise, recent historians of technology have placed less emphasis on stories of “progress” and the assumption that technology alone, irrespective of political or social influences, inevitably drives change in people’s lives (a notion known as technological determinism). Rather, signature works in both fields undermined the notion of progress, Manifest Destiny, and determinism by arguing that building technological systems to support white settlements reflected political hegemony. Donald Worster’s argument in *Rivers of Empire* focused on the idea that oligarchic men of means built large irrigation systems in the West to encourage settlement, urban growth, and economic development unsustainable by the region’s environmental realities. Likewise, Thomas Hughes points out in *Networks of Power* that although technological systems may have defined a nation, these systems involved people as well as technology.²⁵

Engaging histories explore the complex social process of electrification, in which people manipulate new technology to continue old practices. Recent scholars have shifted examination from the “inventors” to the users. People ultimately decided how to incorporate electricity into existing social patterns and landscapes. When the new technologies of the industrial age began to emerge, a technologically literate elite hoped to guide social change in a rapidly changing era. Race, class, gender, and rural status further marginalized certain groups from “insider” status. Early-twentieth-century progressive reformers believed that access to technology was a key factor separating rural people from their urban counterparts.²⁶

As America entered the industrial era, urban life threatened to overwhelm the nation’s cherished rural heritage. Urban progressive reformers convinced legislators that plumbing, refrig-

eration, sanitation, and electricity made it more desirable to remain in rural areas. They also argued that the “democratization” of electrical service would contribute to sacred values of equality by extending urban tools and services to rural people.²⁷

Ronald Kline, a historian specializing in technology, presents further evidence that both the media and reformers increasingly associated “the inferiority of rural life” with the lack of electrical power. The reformers of the Country Life Movement (c. 1900–1920) believed that access to and proper use of new technology would improve rural lives. True social democracy would only occur with equal access to technology, and the reformers’ ideas would have a large influence on government policies toward rural America. However, Kline argues that rural communities did not wholeheartedly embrace urban infrastructure and technologies as the reformers hoped. Rather, a “contested interaction between producers and consumers” determined the impact of new “urbanizing technologies,” including electricity. Like many New Western historians, Kline stresses the idea that various groups exercised agency and resistance in the face of the changes others imposed, often controlling the impact of a particular technology on their lives. Rural people were active in incorporating the new technology into “existing cultural patterns.”²⁸

Similarly, social, political, and economic factors determined the electrification process. Kline’s view of consumerism complements that of Lizabeth Cohen, who writes that various socioeconomic traditions and constructions of gender determined the influence of various new technologies, consumer goods, and appliances in the home. Other scholars, such as Ronald Tobey, Jay Brigham, and Mark Rose, stress that politics played a large part in the mass adoption and use of technology. Such literature suggests useful models with which to examine electrification within the context of the history and demography specific to the rural American West and Southwest.²⁹

Historians of the American West have long argued that place

and landscape have dictated the region's unique history and development. In his classic work *The Great Plains*, Walter Prescott Webb introduced the view that "culture grew from place" and that the environment of the West—"its geology, climate, and landforms—differs fundamentally from the East." Aridity and flat, treeless expanses of land shaped all the creatures and societies that have inhabited this environment. Webb's critics argue that he placed too much emphasis on environmental forces and failed to account for cultural maintenance and the power of humans to shape their environment.³⁰

As with other products of the built environment, the development of large energy systems was a confluence of cultural choices transmuted into legal mandates. Political ideas and federal programs encouraged electrification, modernization, and industrialization. If urban infrastructure contributes to an understanding of municipal development, as many public and local historians have attested, then surely that same infrastructure in rural regions would contribute to an understanding of those communities.³¹ Electrical power systems physically connected traditionally independent rural communities with transmission and distribution lines, creating new technologically defined regions. The wires that eventually crossed rural farms, mountains, valleys, and ranges linked isolated settlements and brought them new tools, appliances, and electrical lighting.

Place, landscape, race, class, and gender typical of the American West complicate traditional discussions of rural electrification. Overcoming economic, cultural, and physical barriers, formerly isolated settlements developed ties to a wider regional culture and economy, often extending beyond politically defined borders. But rural communities maintained their sense of identity and place by accessing electricity in ways that allowed them to integrate these changes on their own terms. In consideration of all this scholarship, this study examines the electrification process as an intrinsically local one involving change,

adaptation, and community organization and reorganization.³² Communities designed electrical systems specific to their local and regional needs. In other words, technology is physically and functionally a product of a place and its people.

Rural consumers of various ethnic and cultural backgrounds may not have responded all that differently to electricity's new challenges and opportunities, but the experiences of various groups are highly relevant if those differences influenced the scope of a region's electrification, as seen in areas dominated by a single group such as Native Americans.³³ David Rich Lewis observes that "rural sociologists seem more interested in the experience of rural blacks or women than in Indians," when "in many ways their situation parallels that of the larger rural West."³⁴ However, local factors such as geography, historical experiences, culture, economic conditions, and legal status ensured that the electrification process would follow a path specific to Native American communities, among the poorest and most rural in the West. Like other groups, Native Americans had a nuanced response to electrification and the industrial values it introduced, but for Native communities such changes would present greater challenges than they would for non-Native communities.³⁵

Rather than isolate ethnic communities into separate works, this book emphasizes the diverse experiences of a multicultural West within a shared rural experience and setting.³⁶ Eastern Arizona serves as a useful region for exploring how modern forces brought discrete, detached, and diverse communities together to share new cultural platforms.

Arizona as Case Study

Driving across eastern Arizona, one cannot help but notice that power lines and telephone poles are often the only man-made structures for miles. Sometimes they run alongside the road and stretch out for miles into the horizon, at other times they disap-