
Hirsh offers a historically grounded technology-policy analysis of the American electric utility industry since World War II. The key problem he explores is how technological stagnation contributes to industrial decline. He argues that the utility industry’s crisis in the 1970s resulted not from governmental regulation or foreign oil but from technological “stasis.” Stasis, for Hirsh, is a framework for assessing managerial, technological, sociological, and economic factors; it is a heterogeneous concept that deals with the cessation of technical advances. This is a historiographic advance. Quotations from 108 interviews unveil the assumptions of utility decision-makers. Still, this compact volume often puzzles the reader in its search for an audience.

Part I, “Progress and Culture,” is an excellent historical analysis of the technological and cultural foundations of the utility industry, and its consumers. From the 1890s to the 1960s, electric power equipment manufacturers exploited technical advances to achieve thermal efficiencies and economies of scale that produced ever-more electricity at ever-lower unit costs. Utility managers enshrined a “grow-and-build” strategy predicated upon these technical advancements. And Americans obligingly consumed ever-more electricity. Appliance-packed Medallion homes and Reddy Kilowatt symbolized better living through modern electricity. Equipment manufacturers responded to utilities’ insistent demand for ever-larger stations by abandoning traditional “design-by-experience” for the novel “design-by-extrapolation.” Before 1950, substantial operating experience informed the design of new plants; by the 1960s, manufacturers used computer modeling to “leapfrog” from 200 MW plants to 600 MW plants (and beyond) without intermediate experience. Hirsh details the multiple motives behind the drive for ever-larger plants. He also clearly explains how regulatory policies that encouraged capital expenditures, by tying rates to them rather than to overall costs, reinforced the values of engineer-managers who focused on technical efficiency rather than economic return. All these participants, Hirsh observes, “had forged an implicit consensus concerning the choice, management, and regulation of a technological system.” (p. 86)

“Stasis,” the theme of part II, will appeal to historians but it appears aimed at business policy makers and industry analysts. Stasis, Hirsh maintains, occurred in the mid-1960s when the industry reached apparent limits to technical progress--and before stagflation or OPEC. Thermal efficiencies, climbing steadily from the 2% of Edison’s 1882 Pearl Street Station, plateaued at around 33% in 1965. But more than Carnot- and Rankine-cycle limits were at issue. Subsequent theoretical advances like “supercritical” steam became metallurgical nightmares and engineering disasters. The excessive operational downtime of supercritical-steam plants negated their thermal efficiencies. Similarly, the necessary safety equipment and extended maintenance downtime of fossil-fuel fired plants above 1000 megawatt (MW) capacity negated their economies of scale. For the same reason nuclear power plants, economically viable only at massive scale due to inherently low thermal efficiencies, were stillborn. Aggravating these technical problems were faulty and unreliable systems, the shortcoming of “design-by-extrapolation.” Consider Consolidated
Edison’s 1000-MW turbine generator, the largest ever built, which, four months after its installation in 1965, blew an oil pump and crashed the Northeast power grid. Galloping inflation, insurgent regulation prompted by enraged consumers, and a conservative mindset in the industry’s executive offices compounded these problems. Investors dumped utility stocks, halving their average value from 1970 to 1974. Sadly, writes Hirsh, “these financial and regulatory problems masked the problem of technological stasis.” (p. 140)

“Accommodating Stasis” presents the author’s optimistic assessment of the utility industry in the 1980s and beyond. Hirsh underscores the necessity to create a “new consensus” around a different complex of technologies, business strategies, and societal values. The old—centralized steam plants, grow-and-build management, and limitless consumption—is simply not viable. Hirsh also sketches the development of new technologies (fuel cells, cogeneration, and integrated gas-coal cycle) as well as associated management practices and industrial structures (load management and de facto deregulation). These are the elements of a new consensus.

Hirsh’s balanced analysis informs the reader, but it does not inspire. If a new (ultimately political) consensus is necessary, then passion and vision are needed, too. Hirsh aims his conclusion at utility managers, urging them to understand their history. Fine. But say he had assessed and updated the “soft energy path” arguments of Denis Hayes and Amory Lovins? Or say he had developed a full-blown model of technology-based industrial decline? Different, perhaps broader, audiences might have resulted. Still, Hirsh’s crisply written volume provides solid ground for thinking hard about our energy future.

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