Stranded Investments, Stranded Intellectuals

Robert J. Michaels

Even the most inefficient producers can usually devise a rationale for regulations that would keep their competitors at bay. As competition erodes their once-secure monopolies, America's corporate electric utilities have come up with one that they hope will appeal to both statists and libertarians. The utilities contend that their customers should only gain access to the market after they pay off the booked costs of the utilities' uneconomic investments. The utilities justify this shakedown with a claim that regulators insisted that they build the uneconomic plants to carry out their service obligations. Depending on the details of the calculation, the utilities estimate that they own between $100 billion and $300 billion of these "stranded" investments. (Shareholder equity in the industry is $175 billion, and total assets are $600 billion.) Today almost one third of the typical California power bill is dedicated to amortizing stranded plants and power contracts with independent producers whose terms exceed market prices.

A new book from AEI Press, *Transmission Pricing and Stranded Costs in the Electric Power Industry*, makes the case for compensation. The authors, William Baumol, past president of the American Economic Association and J. Gregory Sidak, an attorney with graduate training in economics, have set themselves an unenviable task. They set out to show that compelling electricity users to pay off the strandings is more than just fair play. If users do not cough up the $200 billion, they will actually make themselves worse off, despite the attractiveness of near-term rate relief. Important parts of their argument use analytical tools first devised by Baumol. These advances in economic theory, however, do not provide much insight into the stranding dilemma.

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Metaphor and History

Rather than starting from a conventional economic model, Baumol and Sidak assume that regulators, utilities, and buyers were once parties to an "implicit regulatory compact." Regulators imposed an obligation on utilities to serve all eligible customers and to build plants in anticipation of demand. To exploit economies of scale and scope, they gave a single utility the exclusive right to serve an area. Users agreed to take service only from the utility, and to pay off the expensive, site-specific, and highly durable plants that the utility built to serve them. The utility agreed to recover only its actual expenses plus a

"fair" return that would allow it to attract capital.

Without specifying a benchmark, Baumol and Sidak assert that the compact produced great benefits until the 1970s. In that decade, energy price chaos, rising environmentalism, and the politicization of regulators combined to shatter the implied agreement. According to the fable of the compact, regulators accepted influential opinions (usually of noneconomists) that fuel prices would rise without limit and that conventional plants could not meet new environmental standards. In response, they compelled utilities to meet growing demand with nonfossil plants, often nuclear, and to invest in conservation. Unexpectedly, the oil price forecasts were dead wrong; deregulation produced natural gas in abundance, and coal-fired plants managed to comply with environmental rules at reasonable cost. Even before Three Mile Island, some nuclear projects experienced construction delays of a decade, and most were only completed at costs more than triple the original estimates. The Public Utility Regulatory Policies Act of 1978 (PURPA) unleashed an independent power industry of small gas-fired plants, the costs of which were far below those of utility-owned generators. Attempting to encourage independent power, some states enacted laws and regulations requiring utilities to buy it under long-term contracts, the rates of which were much higher than prices that would actually prevail in the markets of the future.

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Not all utilities made the same mistakes, but as time passed, politics further upset the seeming precision of cost-based regulation. Between 1970 and 1985 average residential electric rates, adjusted for inflation, rose by 25 percent, while industrial rates rose by 86 percent. Rate differences between nearby utilities became as large as 100 percent. Large power users understandably wanted to choose their own suppliers, owners of nonutility power plants (and some low-cost utilities) wanted to meet new customers, and new types of middlemen wanted to bring them together. The price differences suggest the size of the benefits to producers and consumers who can deal directly with one another. Only by keeping them apart, however, can some utilities avoid losses on stranded investment that exceed their shareholders' equity.

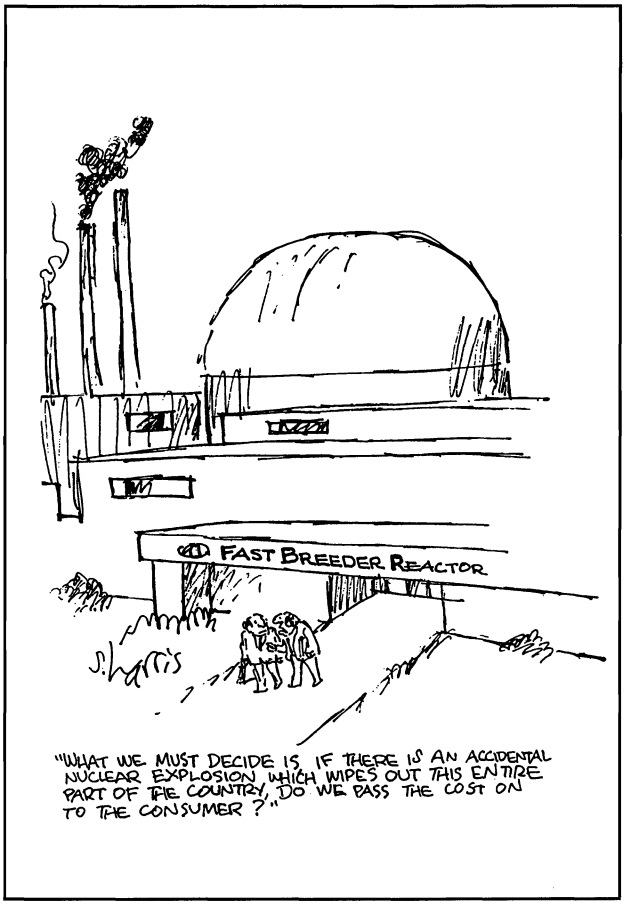
Compacting Reality

Although their arguments depend critically on a preexisting compact, Baumol and Sidak have little to say about its history. Unlike implicit contracts between employers and employees, electrical regulation hardly resembles a voluntary agreement. Rationales based on natural monopoly are both ad hoc and post hoc, since most state regulatory commissions originated at a time (1907-15) when electricity was a highly competitive industry. It could not have been otherwise. Other energy sources (including Rockefeller's kerosene business) were well entrenched, electricity's reliability and safety were uncertain, wiring a building was a costly commitment, appliances were few, industrial electric technology had yet to develop, and power was expensive. Instead of monopolistically restricting output, early electricity suppliers actively promoted their product. Duplicate electrical distribution facilities sometimes existed, but the cost of poles and wires (both of which can be salvaged and relocated) was a small part of the industry's total cost. In a growing industry, efficient generators built by failed companies could easily be used by successful ones, and inefficient ones should have been left stranded.

Academic economists such as the University of Wisconsin's John R. Commons provided regulation's intellectual foundation. Then as now, they enjoyed spotting market "imperfections" and proposing themselves as nonpartisan ameliorators of those inefficiencies. Their ideas would probably have remained on the blackboard without the active political influence of Samuel Insull, the industry's first mogul and creator of the utility holding company. Hardly the person to represent consumers, Insull on numerous occasions endorsed state-level regulation as the best available method to combat the growth of competing municipal utilities. Allied with Insull were the reform-minded leaders of the National Civic Federation, who also seemed more interested in "good government" than in the well-being of consumers. Electricity offers no analogue to the angry farmers whose opposition to monopoly railroads helped to produce the Interstate

Commerce Commission. Believers in a compact need to explain why so little pressure for regulation came from customers upset by utility rates. Economist Gregg Jarrell has shown that regulation came first to states where utility profits were squeezed, rather than to those where rates were exorbitant.

The statutes that implemented electricity regulation look like ordinary special-interest legislation rather than a grand social bargain. Baumol and Sidak treat longstanding cross-subsidies from industrial to residential consumers as normal workings of the compact, but do not explain why industrial users would ever sign on to an arrangement that protected their interests so poorly. All parties would surely have insisted on provisions to terminate or renegotiate regulation if markets or technology changed, and consumers would surely have wanted commissions whose resources were roughly equal to those of the firms they regulated. The term "regulatory compact" first appears in a legal decision in 1983, and "stranded investment," surely a common problem for utilities with departing customers, only turns up in the electrical trade press in 1990.



Fairness and Compulsion

The legitimacy of stranding claims depends critically on exactly what regulators compelled utilities to do at the time the stranded plants were built. Here, too, Baumol and Sidak neglect important facts. According to *Public Utilities Fortnightly*, "almost all" stranded nuclear investment comes from 34 plants that went into service after 1984. All of them were either begun or committed to completion following the slowdown in demand growth that began in the early 1970s. Most utilities in fact recognized the slowdown and reacted accordingly. Between 1974 and 1981 the industry canceled 108,000 megawatts (three times California's load) of plant construction, and a disproportionate 81,000 of the canceled megawatts were nuclear. Available substitutes included coal-fired plants (relatively fewer of which were canceled), conservation, and purchases of power from other utilities. Any utility that claims a nuclear stranding should show that regulators gave it no choice but to build or complete the plant despite the utility's preference for an alternative. Construction permits entitled "orders" will not by themselves tell the whole story.

Nor is it clear why regulators would compel most utilities to invest at all. Engineers recommend that utilities hold generation reserves of 20 percent, but in every year from 1975 to 1988, the industry's margin exceeded 30 percent. Reserve-short utilities were not the only builders of nuclear plants. Possibly aware of these issues, Baumol and Sidak justify recovery on the grounds that regulators "approved" these now-stranded investments. Regulators, however, also approved the investment plans of nonnuclear utilities and granted requests by others to abandon nuclear construction. In some cases, they certified billions in write-offs of uncompleted plants that were borne by shareholders. Do Baumol and Sidak want recovery only for those utilities that refused to admit their mistakes to the market?

Recovery on above-market PURPA contracts between utilities and independent generators poses another difficulty. For example, California's problem contracts were the outcome of so complex a process that responsibility for their length and inflexibility is unclear. Their

high "avoided cost" payments, however, came from fuel price projections that regulators and utilities agreed on with little difficulty.

Investors and Captives

Like others before them, Baumol and Sidak favor stranding recovery on grounds that regulation forces investors to accept an odd structure of returns. Investors allegedly forego the high returns from successful projects, but in exchange they do not lose from projects that turn out badly. Utilities' real performance has been otherwise. Between 1977 and 1991 the annual total return to investors (dividends plus capital gains) in *Public Utilities Fortnightly*'s sample of 81 utilities was 13.3 percent per year, while Standard and Poor's 500 unregulated industrials made 13.2 percent. Postwar, electric utility stocks have been less risky than the market as a whole (their financial beta averages 0.6), and their riskiness fell significantly after 1974 (beta dropped to 0.4), as fuel cost adjustments became universal. Electric utilities beat the market on both return and risk, while their managements were putting in place about $200 billion of unneeded capacity whose economic value would turn out to be zero.

Competitive product markets will surely make electric companies riskier. Competitive capital markets, however, will allow them to attract funds for productive investments at prices that reflect their actual risk.

Since strandings are sunk outlays from the past, any economic case for recovery must show that paying them off will somehow impact the future. Noting that investors who do not recover strandings will foresee a riskier utility industry, Baumol and Sidak conclude (without numerical evidence) that "the community will regret" not paying them. If only the rest of us knew the effect of denied compensation on the cost of capital, the authors expect that we would willingly agree to foot the bill. Even if they are right about the cost of capital, however, they do not explain why markets function more efficiently if investors can insulate themselves from risk by throwing it onto power users who cannot.

Instead, Baumol and Sidak offer an apocalyptic scenario. They claim that if a utility is denied compensation for strandings, "the market mechanism dooms such a firm to deterioration and extinction." Worse yet for consumers, a utility so afflicted will not make the investments that are necessary to maintain reliability. Utility managements no longer make such threats, and economists well understand that reliability at any price reflects utility corporate culture rather than economic reality. Reliability has a value, and consumers with choices will be able to choose the level they want, as industrial users do now under interruptible and time-of-use rates. Competitive product markets will surely make electric companies riskier. Competitive capital markets, however, will allow them to attract funds for productive investments at prices that reflect their actual risk. Few would recommend that competitive industries be turned into regulated monopolies because doing so cuts their cost of capital. The experience of electricity makes it clear that there are many more costs at issue.

Sunk costs also affect the application of Baumol's theory of "efficient component pricing" to stranding recovery. Assume that a user wants its local utility to deliver power that the user has purchased from someone else. According to the theory, the delivery charge should equal the sum of (1) the cost of operating the lines and (2) the revenue the customer would otherwise have paid the utility. (On top of this, the customer must also pay for the power.) As others have noted, the scheme is only efficient if the utility is originally operating in a competitive market. Because regulated prices equal competitive prices only by accident, the theory does not justify recovery of the booked cost of nuclear plants as a precondition of bypass. Had utility customers enjoyed choices, the market would long ago have written these plants down. Such payments deter economically warranted bypass and reward most richly the utilities with the biggest strandings.

Readers will get more out of Baumol and Sidak's book if they always bear in mind that regulated prices that recover historical costs will seldom equal prices in competitive markets. Since cost-of-service regulation gives utilities larger amounts of profit when they invest more, the opportunities for uncompetitive outcomes are abundant. Whatever today's difficulties, nuclear power nearly doubled the rate base on which America's utilities could earn income. After not-

ing that his new desk was in the rate base, Erroll Davis, CEO of Wisconsin Power & Light, told *Fortune* that "this is the only industry I've ever seen where you can increase your profits by redecorating your office." Baumol and Sidak believe that "the regulator's task is to serve as a proxy for competition," but cost-of-service regulation virtually ensures that regulated industries will not perform competitively. If regulated prices really did equal competitive prices most of the time, utilities could never have made the mistakes that precipitated today's stranding crisis.

The Future of Utilities

Baumol and Sidak seem to believe that after utilities receive stranding compensation they will continue operations at roughly their current size. While they will bear additional risks of bypass, they will retain an "obligation to serve" so-called core customers (if any) who are too small to find economic alternatives. It is hard to sympathize with the authors' sentiments that utilities deserve special consideration because they have service obligations that their competitors do not. Utilities fought for most of the territory they now serve, and instead of trying to shed obligations, they continue to resist competition for municipal franchises. Utility complaints that competitors only want profitable customers are little more than admissions that those customers' bills are too high and their rates are poorly designed. (Baumol and Sidak's examples of "inefficient" bypass assume that utility rates do not equal marginal cost.)

Baumol and Sidak's concern with the potential inefficiency of denied stranding compensation goes unmatched by a concern for the potential inefficiency of paying it. The desirability of stranding payoffs will depend critically on what utilities intend to do with the money. Everyone agrees that tomorrow's utilities will obtain more of their power supplies from the market and less from their own production. As competition reduces the economic scale and scope of utilities, almost surely the best policy for investors is to shrink the company by using stranding compensation to retire debt and buy back stock. Because utilities are uniquely protected from takeovers by the Public Utility Holding Company Act, their managements may have more freedom than those of unregulated companies to spend the compensation as they wish. The last time utilities had substantial free cash came in the mid-1980s with the completion of nuclear plants. They spent those flows on seemingly reasonable diversifications whose aggregate return was roughly zero. Today's utilities intend to go into the telecommunications and information business, presumably with the help of stranding compensation. Having lost an ironclad monopoly that they themselves created, utilities intend to enter customer-driven, competitive markets that are already beyond anyone's control. With luck, $200 billion in wasted resources just might double.

Selected Readings

Baumol, William J.; Sidak, Gregory; and Michaels, Robert J. "Stranded Investment: Pay Up or Mark Down, A Point-Counter-Point." *Public Utilities Fortnightly* (May 15, 1995).

Black, Bernard S. "A Proposal for Implementing Retail Competition in the Electricity Industry." *The Electricity Journal* 7 (Oct. 1994).

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Michaels, Robert J. "Unused and Useless: The Strange Economics of Stranded Investment." *The Electricity Journal* 7 (Oct. 1994).