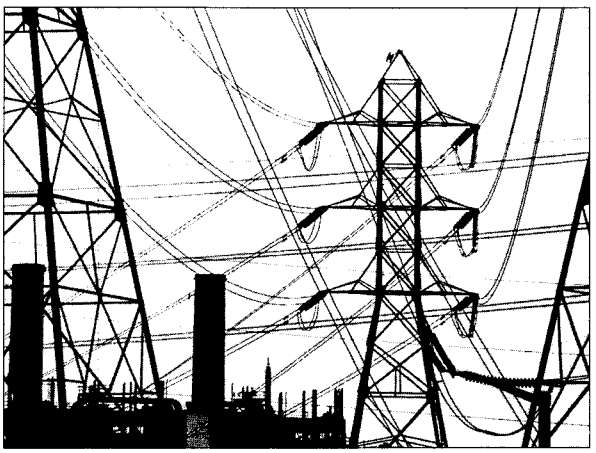
Power Moves

By Matthew C. Hoffman

The electricity superhighway means the end of the local utility company's monopoly.



Power Play: Will environmentalists' determination to use monopolies to subsidize conservation block competition on the electricity superhighway?

AMERICANS HAVE BEEN BARraged in recent months by prophecies of an emerging "information superhighway," a national telecommunications grid that promises everything from instant visual communication to long-distance sex. But there is little awareness yet of the burgeoning *electricity* superhighway, a sprawling network of power lines that links most Americans to hundreds of electricity producers.

Growing demands for consumer access to the electricity superhighway could soon revolutionize the power business, replacing the old system of regulated monopoly utilities with a competitive electricity market. In such a market, customers could shop around for the best deal. A factory in Michigan, for example, could buy power from a plant in South Carolina, which would transmit the electricity over the national network and through the local utility.

But an emerging coalition of electricity utilities and environmentalists opposes deregulation. Both groups are fighting to maintain the old regime—the former to preserve their protection from competition, the latter to maintain energy conservation programs subsidized through the monopoly system. The two forces are fighting a state-by-state battle to block consumer access to the superhighway.

The increasing pressure on the industry to relax or eliminate the monopoly system stems not from new technology but from a growing awareness among industrial power consumers that open competition through transmission networks has long been technologically feasible. Public utilities have maintained small local networks or "power pools" among themselves since the 1920s, and in recent decades they have become increasingly interconnected in a national system. The development of efficient long-distance transmission lines has allowed utilities to link together in a patchwork of local grids, power pools, and pool interconnections. Most utilities in a region are ultimately joined to one another through this superhighway, as are their customers.

Hundreds of utilities and wholesale power producers buy and sell electricity over the superhighway every day, in an increasingly competitive wholesale market. The system can be envisioned as a complex of water pipes, in which pressure must be maintained within a certain range. In a typical transaction, an electricity seller increases its level of power production, raising the "pressure" and causing electricity to flow into the network, while the buyer decreases its power production proportionately, lowering its "pressure" and thereby drawing a roughly equivalent amount out of the system. The process is known as "wholesale wheeling."

The main impetus for the rapid development of this national wholesale power market was a series of federal regulations imposed on the industry during the early 1980s. In an attempt to subsidize "alternative" energy sources, the government required electricity utilities to purchase power from independent producers using solar, wind, and cogeneration sources. This program drew the attention of utilities to the possibility of avoiding risky power-plant projects by purchasing new power from wholesale suppliers. Independent power producers, which exist solely to provide electricity for public utilities, proliferated rapidly over the next decade and now represent more than half of new electricity production in the United States.

Wholesale competition was further encouraged by the Energy Policy Act of 1992, which requires utilities to let other parties wheel electricity over the transmission grids in their service territories. The law also allows utilities to provide electricity to the wholesale market through "exempt wholesale generators," which are free of many federal utility regulations. Today hundreds of independent power producers, exempt wholesale generators, and public utilities can sell electricity to one another over a relatively unobstructed network.

LARGE INDUSTRIAL ELECTRICITY BUYERS have recently begun to demand access to the superhighway. They want what electricity utilities and other power producers already have: the right to purchase power from any producer in the system. "Retail wheeling" would allow electricity consumers to purchase power from the seller of their choice through the local utility. The seller would transmit the electric-

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ity to the buyer's local power company, which would reduce its own electricity production proportionately. The retail customer would continue to consume power transmitted by the local utility but would be charged only for electricity consumed in excess of the amount wheeled from the seller, plus a small transmission fee. This would mean the end of the local utility monopoly.

Industrial electricity purchasers, represented by the Electricity Consumers Resource Council, are particularly impatient with the inefficiencies of the current system, which are illustrated by dramatic rate disparities among utilities. Some industrial consumers pay only 4 cents per kilowatt-hour, while others pay up to 12 (the national average is 6 cents). Gerhard Stein of General Motors estimates that his company would save more than $1 billion a year if electricity rates fell by a third. Electricity consumers as a whole would save $59 billion a year, or $614 a household.

Many electricity utilities oppose deregulation for the same reason power consumers support it: The current system allows inefficient power companies to stay in business, despite the availability of cheaper electricity. Many utilities are producing electricity at rates significantly higher than the national average. Some are stuck with inefficient plants and warn that if large electricity consumers are able to bypass local utilities in favor of competitors, residential customers will be forced to pay for those plants through higher rates. But the real threat is that the utilities themselves will sustain the losses, just as many power companies did when they suffered cost overruns in the 1970s.

Although utilities generally oppose opening the superhighway, several have embraced the prospect of competition. Louisville Gas and Electric has appointed ex-phone company executive Roger Hale as its new president in an attempt to gain from the experience of telecommunications deregulation. "I believe there will emerge in the near future a fungible, price-competitive electric highway transportation system that includes point-to-point and network routes," says Hale. He has already split LG&E into two divisions, one for traditional monopoly sales, the other for aggressive buying and selling on the burgeoning electricity market.

ENVIRONMENTALISTS HAVE A DIFFERENT reason for keeping the superhighway off-limits to retail consumers. They want to protect "demand-side management," an increasingly popular scheme that uses the utility monopoly as a tax-and-subsidy system to promote energy conservation. Demand-side management programs seek to improve the energy efficiency of utility customers and thereby reduce their electricity consumption. The programs

typically offer subsidies for the purchase of energy-efficient heating, air-conditioning, and ventilation systems, low-energy fluorescent lighting, and additional building insulation. Often the utility will send coupon books to customers, giving them substantial discounts on the devices, financed by the utility. In some programs, the utility actually installs the devices for the customer.

The utility pays for the improvements in energy efficiency by raising its rates, in effect taxing all customers to subsidize energy efficiency for a few. Proponents of demand-side management dismiss this as "neutral transfer" between individuals. Such rate increases don't seem "neutral" to the people who pay them.

Demand-side management surcharges impose a substantial burden on energy-intensive businesses such as steel and paper, for which electricity bills represent up to one-third of operating expenses. In New York state, some companies have paid more than $1 million in demand-side management surcharges in a single year, while receiving almost no energy efficiency subsidies. A Michigan program will cost General Motors more than $10 million over the next decade. Firms that had already invested in energy-efficient equipment are largely ineligible for the subsidies and may be forced to pay for energy efficiency improvements for their competitors. Ultimately, such costs are passed on to consumers.

ADVOCATES OF DEMAND-SIDE MANAGEment argue that their approach is more cost-effective than the traditional practice of simply meeting the electricity demands of customers. But as Larry Ruff, an economist with the consulting firm of Putnam, Hayes, and Bartlett, points out, no utility planner can possibly account for all of the costs involved in improving the energy efficiency of consumers. "The cost-effectiveness of any specific DSM device," he says, "depends on the details of the device, the consumer, the application, the timing, the delivery method, etc., in ways that are not directly observable or controllable by the utility."

The cost-effectiveness of energy-efficiency improvements has been vastly exaggerated by their proponents. In a recent study published in *Science*, MIT economists Paul Joskow and Donald Marron estimate that utilities pay, on average, 500 percent more to reduce their customers' demand than the estimates of energy-conservation advocates would suggest. Furthermore, demand-side management invite free-riders—companies that receive subsidies for improvements they would have made even without the program. Some programs have free-rider rates of 80 percent. Joskow and Marron found that many utilities simply ignore this issue.

Given the inherent problems of demand-side management, a competitive electricity market would spell doom for the concept. Any power producer that attempted to raise its rates to pay for such programs would quickly lose customers. And a recipient of energy-efficiency subsidies would be able to switch suppliers at will, in which case state regulators would not allow the utility to recover the cost of the subsidies through rate increases. Demand-side management and competition simply cannot coexist.

In a March press conference, a coalition of environmental groups, including the Natural Resources Defense Council and the Sierra Club, announced their intent to block consumer access to the electricity superhighway. Parroting a common argument advanced by power companies, they denounced retail-wheeling arrangements as "fictional," because "in actual fact the power from generators attached to a transmission system is totally intermingled throughout the grid."

John Hughes of the Electricity Consumers Resource Council scoffs at such criticism, observing that the same argument could be applied to the existing wholesale electricity market. "The lights are still on," he notes. "Something is happening in those wires."

Furthermore, a fully competitive electricity system already exists for large power purchasers in England and Wales, which began deregulating their system in 1988. Today, any electricity buyer who consumes more than one megawatt of power each year can purchase electricity from any power producer on the England-Wales superhighway.

The process is coordinated through a massive spot market, the "power pool," in which all electricity is bought and sold. The spot price fluctuates on a daily basis, but individual buyers and sellers can set long-term contracts at a specified price. The two parties buy and sell to the pool at the spot price. If the spot price is higher than the contract price, the seller refunds the difference to the buyer; if the spot price is lower, the buyer compensates the seller. The government plans to relax the one-megawatt minimum requirement soon, allowing small electricity buyers to exchange through the pool as well.

UNDAUNTED BY SUCCESSFUL EXamples of wholesale and retail electricity competition, the Natural Resources Defense Council is conducting a state-by-state campaign with local utilities to convince state regulators to prohibit retail wheeling. In 1993 the NRDC declared victory in New Mexico, when a bill to open the state superhighway to retail-wheeling arrangements was shunted off to an interim committee for a two-year study period. But other states, including Nevada and Minnesota, are seriously examining competition as a way to retain large industrial firms that threaten to leave in search of cheaper electricity.

Perhaps the most telling indication of the future of the superhighway can be found in the reports of investment houses, which have millions riding on the outcome of the debate. Merrill Lynch has already conducted an extensive survey of utility operating costs to sort out the utilities that can compete on an open network from those that can't. The survey's cover declares, "Competition Comes!" For consumers languishing in a stagnant and inefficient monopoly system, that will be welcome news. ®

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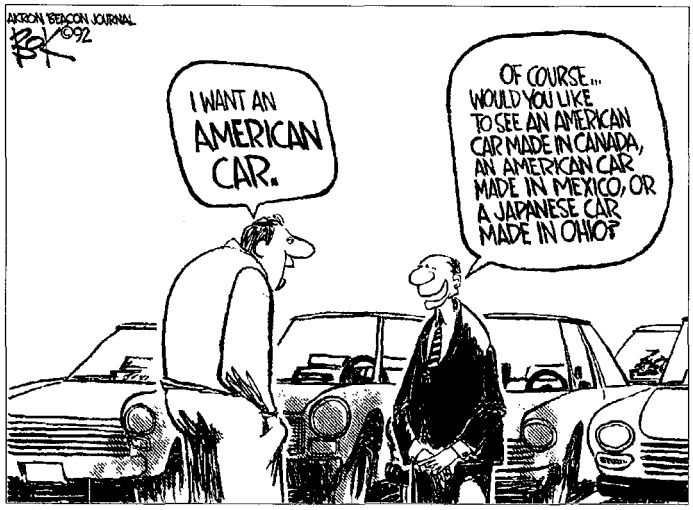
As the One World Turns

By Martin Morse Wooster

The global economy is a lot more complicated than conspiracy theorists predicted.



TWENTY-FIVE YEARS AGO the conspiratologists of the right and left had competing theories of what would happen to the world economy. The right-wingers were worried about "one-worlders" who would use the United Nations to chain America in the bonds of world government. It was unclear who these one-worlders were, or what power they had, since it was a first principle of right-wing eschatology that all changes the conspiracy theorists did not like—communist advances in Southeast Asia, the New York Mets' winning the World Series—were the fault of the nefarious "insiders" who wanted America enslaved under a world government that they would secretly control.

The left, for its part, was busily blaming multinational corporations for the plight of the Third World. These multinationalists were the Cheshire cats of commerce, all teeth and no face. They were supposedly gobbling up Third World economies—Botswana for breakfast, Brazil for brunch, Sierra Leone for a snack—at a fearsome pace. These corporations were, in left-wing theology, stoppable only by revolution.

These competing visions have been proven partially true. The world in 1994 *is* closer to being "one world" than in 1969, but this global integration is due to corporations, including multinational ones, not to governments or "insiders." It's hard to imagine any command that the Council on Foreign Relations or the Trilateral Commission might give that would cause thousands of East Germans to smash the Berlin Wall. And while these multinational corporations are powerful, the falling cost of information and computer power has done more to change the world than any activity of a big enterprise.

In the December 13 *Fortune*, Thomas A. Stewart compiles some interesting statistics on how the falling cost of information has affected the world economy. Some examples:

- The number of international telephone calls to and from the United States quadrupled between 1981 and 1991.
- The amount of computer power in the world (measured in millions of instructions per second) tripled between 1988 and 1992.
- U.S. corporate investment in foreign companies increased by 35 percent between 1987 and 1992, to $776 billion.
- Foreign direct investment in American firms more than doubled in the same time period, reaching $692 billion.
- In 1991, for the first time, American firms spent more for communications equipment and computers than they did for such traditional improvements as new machinery and new construction.
- For the last 20 years, the amount of energy needed to produce 1 percent of a nation's gross national product has fallen, on average, by 2 percent a year.

These changes, says Stewart, do not just mean the end of thousands of middle-management jobs; they also mark the end of traditional methods of distribution. General Electric's lighting division, for example, closed 26 of its 34 warehouses since 1987. "In effect," Stewart writes, "those buildings and stockpiles—physical assets—have been replaced by networks and databases—intellectual assets."

In the Winter *Media Studies Journal*, Walter B. Wriston, the former CEO of Citicorp, predicts that this shift to information-based capitalism will mean a gradual end to trade barriers and to war. "The pathways open to the transformation of data and information are now so prolix as to make national borders totally porous," Wriston writes. "Intellectual capital will go where it is wanted and stay where it is well treated. Any teen-age computer nerd knows this."

"The Information Standard," says Wriston, "has replaced the Gold Standard." With information as the standard by which wealth is measured, he argues, there will be less need to conquer territory, since such an act will not give the expanding power any better information than it had before. And if a country attempts a policy of economic autarky, "the giant vote-counting machine that is the global market" will cause that nation's currency to plummet in value, ensuring that "central-bank intervention is doomed to expensive failure as the size and speed of the market overwhelms governments. Governments do not welcome the Information Standard any more than absolute mon-

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