Deregulating Electricity

What Stands in the Way

Robert J. Michaels

Electricity was once the textbook model of a regulated industry. Since its production and distribution were natural monopolies, a single supplier was best. Regulation (or possibly public ownership) would then restrain any monopolistic behavior. Unregulated competition would be unsustainable, since competitors could enjoy economies by merging into ever larger firms. Competition, however, was undesirable since competitors would needlessly duplicate each other's facilities. A single supplier could both serve at lower cost and plan its system more efficiently.

Economists originally found such arguments compelling, but by the 1970s their force had faded. Scholars became critical of regulation; they usually found it either ineffective or pernicious. Their findings were disturbing, but the policy implications were unclear. In industries such as trucking or airlines, the rationale for regulation was weak because markets were normally competitive or contestable. In electricity, however, natural monopoly seemed pervasive. Economies of scale in the generation of power were extensive, both for individual plants and for a reliable network. For high voltage transmission a single line minimized the cost of delivery per kilowatt-hour. To distribute power to final users a single network was better than two.

The academic critics may have been first, but by the 1980s an increasing volume of informed opinion had come to favor deregulation. The case for competition is premised on more than dissatisfaction with regulation. Changes in technology, law, and energy markets have greatly expanded the potential for competition in electricity. In response some scholars, without having examined the limits of what can be deregulated, now favor extreme deregulation. Some of those limits originate in electrical technology. Others are embodied in laws and regulations that politics probably cannot change. If the case for regulation is not open and shut, the case for deregulation is not either.

Regarding technology, deregulation will require some opening of access to high voltage transmission, which is mostly owned and operated by large corporate utilities. Transmission is necessary to effect the movement of power, but electrical technology will not allow extremely open access or uncoordinated construction of new facilities. Technology also poses obstacles to the market pricing of transmission services.

Regarding the law, electricity differs from other regulated industries in that all levels of government are important power suppliers, alongside private firms. Federal law subsidizes certain governmental utilities by tax exemptions and by preferentially allocating underpriced power to them. The legal division between federal and state transmission regulation inhibits effective network design and allows jurisdictions to inflict detrimental exter-

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nalities on one another. The usual methods of regulatory rate setting can encourage customers to bypass utility service when doing so is economically unwarranted. Such laws and practices will probably not vanish with the liberalization of transmission access. Because of this, some of the increase in postderegulation market transactions will not be economically desirable. Rather than economizing on society's resources and producing widespread benefits for consumers, some of the apparent growth in markets will be no more than a fight among interest groups over transfers of wealth.

The Critics and the Crisis

Academic revisionism on electricity regulation began in 1962, when the late George Stigler (later to win a Nobel Prize) and Claire Friedland provided statistical evidence that rates in regulated jurisdictions early in the century did not differ substantially from rates in unregulated ones. Shortly thereafter, Harvey Averch and Leland Johnson showed mathematically that regulation gave utilities incentives to overcapitalize and "gold plate" their systems to be excessively reliable. Other theorists showed that profit regulation gave executives little reason to watch costs closely and gave shareholders correspondingly little reason to monitor executives. The incentives of regulators were also weak. Even if they could spot inefficiencies by reading the regulatory paperwork, they would not share in any benefits resulting from their orders. Commentators from Stigler to Ralph Nader came to portray regulators as captives of regulated firms, when not simply incompetent. Some economists found little difference between the operating costs of regulated corporate utilities and similar publicly owned entities. Either public agencies were as efficient as regulated corporations or regulated corporations were as inefficient as public agencies.

For all of the problems suggested by the economists, some important facts stood out through the 1960s. America had an extremely reliable electric system, which reached virtually every consumer at prices most people considered reasonable. Although economists theorized that regulated monopolies would lack incentives for innovation, productivity increases in electricity were among the highest in industry. These increases stemmed both from new technologies and from the exploitation of economies of scale. Before the 1970s, utilities frequently initiated regulatory proceedings to lower their rates. It was, in the words of former Federal Energy Regulatory Commissioner Charles Stalon, a golden age of regulation. There was little pressure to seek out new organizational forms and regulatory methods when the existing ones were, at least to the untrained eye, working well.

The 1970s challenged the institutions and strained the politics of regulation. By the end of the decade, the cost shocks of environmental regulation and fuel prices had escalated into planning fiascos. New regulations delayed construction and restricted the choices of fuels and plant locations. Fuel prices not only rose, but also became more volatile. Fuel cost adjustment escalators in rates became common, and utilities, reversing prior practice, petitioned regulators for rate increases to recover their increased capital costs. Regulators were often not so compliant about increases as they had been about decreases.

Beyond the cost crunch, utilities were in many ways less flexible. Planning and construction times for conventional power plants increased, and utilities building nuclear plants faced even greater delays and cost overruns. Bowing to consumer pressure, some regulators disallowed significant amounts of those costs. Planning itself went awry. The seeming lesson of the golden age was that electricity demand would always grow. Rate increases to cover the cost shocks, however, led to unexpected drops in consumption. As delayed facilities came on line, some utilities found themselves with plants whose outputs could not be sold locally but whose costs still had to be paid off. Others found themselves chronically short of economic capacity.

Changes in technology, law, and energy markets have greatly expanded the potential for competition in electricity. There are, however, limits of what can be deregulated that originate in technology or are embodied in laws and regulations that politics probably cannot change.

The Bulk Power Market

Exchanges of power were a clear solution to some aspects of this crisis. Natural monopoly or not, mutually gainful trades are possible if two utilities have different costs and transmission is available. Both gain from a price that is more than the seller's production cost and less than the buyer's cost of self-supply. Consumers share the benefits, since regulation usually adjusts rates to account for the savings.

Electricity exchanges take place in what has come to be known as the bulk power market.

In the bulk market utilities may contract for firm (reliably backed-up) energy or for interruptible service. Agreements may be long-term, seasonal, or restricted to certain hours of the day. Interruptible service might reflect resource availability (a hydroelectric facility avoiding spill conditions) or sporadically available transmission capacity. Only a small amount of power is traded on spot markets, and most of that is interruptible. Bulk power competition is primarily precontractual. Potential trading partners make competing offers, the best of which are memoralized in agreements. There are currently no organized futures markets in electricity. Beyond simply purchasing energy, a buyer may own some right to the capacity of the plant that generates it. Joint ownership or assignment of transmission capacity is also possible. Capacity transactions capture scale economies by allowing the construction of facilities that cannot be fully utilized by a single owner.

Regulation itself has not been an insuperable barrier to the bulk power market. To understand other important constraints on the market's development is to understand the limits of deregulation.

Other bulk market services include coordination and wheeling. Coordination includes short-term services that lead to lower operating costs, such as sharing of reserves and joint scheduling of generator maintenance. Coordination can extend as far as joint planning and joint dispatch of generating units through power-pooling agreements. Wheeling is the firm or interruptible transmission of power for others. A utility may wheel power from a direct trading partner, or it may wheel power through its territory for a third party. The controversies of deregulation center around a transmission owner's obligations, if any, to wheel.

Competition in bulk power, just as competition in other industries, will allocate scarce resources to more valuable uses. Utilities will profit because of unavoidable regulatory lags in the pass-through of lower costs. Bulk power competition might encourage utilities to watch their costs more closely and to refine their planning and power purchase practices. Beyond those benefits, bulk power exchanges can ease the adaptation of suppliers and their customers to new regulations and to investments that were mistakes in retrospect.

In recent years, about 15 percent of all power produced by corporate utilities was initially sold for resale by others. (Since some of that was committed to requirements transactions, it does not measure the bulk power market.) Contracts underlying bulk power transactions must be approved by the Federal Energy Regulatory Commission (FERC), which requires that prices in them be cost-justified. In practice the commission generally approves agreements, absent the intervention of parties who believe themselves adversely affected. Regulation itself has not been an insuperable barrier to the growth of the market. There are, however, other important constraints on the market's development. To understand them is to understand the limits of deregulation.

The Control Area and the Market

Technology itself imposes important limits. At all but the highest voltages, power losses in an alternating current transmission line become prohibitive after a few hundred miles. Before the development of extra high voltage technology in the 1960s, a utility was restricted to nearby generation. Trades with neighboring utilities were often foreclosed because of difficulties in areawide frequency control, which is required if power is to be useful. The typical utility entered the 1970s self-sufficient in its ability to serve final (retail) customers in its regulated service area.

The service area may overlap the utility's control area, over which it (or a group of utilities) dispatches generation and oversees transmission. Electricity is not storable and must be used at the instant it is generated. Production must adjust instantaneously to demand. If excessive or insufficient power is generated, a catastrophic system failure may result. The failure may extend beyond the responsible control area, as it did in the Northeast in 1965 and in the West in 1982. The control area operator must spin reserve generators to meet emergencies and to schedule power flows into and out of its region. The need to comply with sound operating practice places limits on bulk markets. A control area operator concerned with reliability might allow the importation of less power than can profitably be purchased externally. If agencies other than the utility are making such purchases, their individual curtailments might be set by prior agreements rather than by a momentary market.

The internal organization of utilities forecloses some market transactions. Vertical integration across generation, transmission, and distribution facilitates the coordination of power flows. To ensure reliability those decisions are taken out of the market and made administratively. In 1989, 203 vertically integrated corporate utilities generated 76 percent of America's power and served 75 percent of its ratepayers. About 2,000 municipal utilities and 1,000 cooperatives served the remainder. Some municipals, such as Los Angeles, are vertically integrated systems with control areas. Most, however, are small systems that only distribute power. They receive their full requirements (or residual requirements if they own some generation) under contract with a corporate utility or government agency. Rates for such corporate sales, known as wholesale transactions, are also regulated by FERC.

Inadvertent Power Flows

A bulk power transaction never uses only one transmission line. (Direct current is an exception.) Even if the buyer and seller are directly connected, it is costly to make power flow exclusively along that connection. Electricity flows through a transmission network like water, in accordance with the resistances of all interconnected lines. If two utilities make a bulk exchange, some of the power actually goes through lines owned by interconnected utilities. Those flows may foreclose the latter utilities from carrying out some of their own bulk transactions. This phenomenon is known as loop flow or inadvertent flow. In the West loop flow frequently occurs in large enough amounts to force major curtailments. In economic terms loop flow is an externality in which one utility's actions impose an unrecompensed cost on others. (Sometimes loop flow is beneficial because it lowers line loadings.)

There is currently no liability rule and no market for compensating victims of loop flow. Utilities could in principle bargain their way around the problem, but in practice negotiations have broken down or have resulted only in short-lived agreements. Regional reliability councils of utilities deal with loop flow as a constraint on operations. They do not, however, have the power to enforce compensation for economic damages. The lack of a market value for loop flows gives a utility incentives to beggar its neighbors by making transactions that use their lines without compensation. Such compensation is one instance of the more general problem of transmission pricing, which is discussed below. Determining compensation is difficult because the cost of loop flow includes some items that are hard to value. For example, it may force a utility to use a less efficient configuration of its own generation.

Electrical flows have other consequences for deregulation. The power actually used by a purchaser (a utility, a large industrial customer, or a municipal distributor) is not the same power produced by the contracted source. Rather it is a commingling of all power in the control area. An unreliable source can put the entire area at risk of higher operating costs or greater likelihood of an outage. The question of which transactions should be allowed is thus subject to engineering judgment. There may be sound technical reasons for the operator to veto someone's external purchase, but there may also be monopolistic ones. In real time it may be difficult to distinguish the two.

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Transmission is also subject to judgment calls. Because of loop flow and reliability problems, a spot market for common carriage is not a plausible option. Most transmission takes place pursuant to previously negotiated contracts or is for power produced by the transmission owner. System operators determine the minute-to-minute availability of short-term wheeling capacity. Engineering and competition might clash here too. Most corporate utilities control most of the transmission in their territories, and municipal and industrial customers must use utility-owned lines to make external transactions. Might the corporate utility use its ownership position to harm competition, and, if so, what are the consequences for deregulation?

Competition and Wheeling

The once bitter rivalry between corporate and governmental utilities remains embodied in today's industry. Either type of utility can hold a city's franchise to distribute electricity. (In rural areas cooperatives can be formed.) A city served by a corporate utility can vote to purchase the utility's assets

"You know the lifestyle so many of us dream about—living in a cabin in the woods, doing some pottery, perhaps weaving a wall hanging and selling it for just enough to buy a week's food, informal meals cooked in a fireplace, no pressure—well, I had enough of that and decided to drop out and become a utility executive."

and subsequently operate a municipal system. A city served by a municipal utility can vote to sell its assets to a corporate utility. An influential 1966 article by Harold Demsetz made the point that franchise competition might bring consumers the economies of natural monopoly without the difficulties of regulation. In Demsetz's theory suppliers can bid for the right to operate the franchise. Awarding it by such a procedure translates low costs into consumer benefits if we assume that voters can also terminate the holder's right to the franchise.

Since electric rates are regulated, a corporate utility that takes over a municipal one gets no supernormal returns for its efforts. If regulators lag in adjusting rates, the corporate utility takes a loss by expanding its load. Thus, it has little motivation to compete for new franchises.

Theories of franchise competition are important in electricity. The 1973 Supreme Court decision in *Otter Tail Power Company* v. *U.S.* held that regulation was not sufficient to immunize a corporate utility from antitrust liability. Otter Tail violated the Sherman Act by refusing to wheel inexpensive, federally produced power to municipal utilities in its area that had no alternative transmission. According to the Court, the refusal adversely affected franchise competition. If the company did not wheel for a municipal, it could continue to serve the town at wholesale. Otter Tail's refusal increased the likelihood of a municipal vote to return the franchise to the company and decreased the likelihood that a town would vote to municipalize its electric utility.

It is remarkable that so much policy hangs on as weak a hook as franchise competition. Demsetz's theory of franchises fits electricity distribution poorly. In most areas distribution is less than 10 percent of delivered electricity cost. Usually there are only two possible servers, a corporate utility and a municipal. Since rates are regulated, a corporate utility that takes over a municipal one gets no supernormal returns for its effort. Rate-setting procedures compound the problem. For most utilities today the cost of incremental generation to serve new territory exceeds the average (embedded) cost, on which rates are based. If regulators lag in adjusting rates, the corporate utility takes a loss by expanding its load. When the incremental plant comes into the rate base, the bills of all customers rise. The corporate utility thus has little motivation to compete for new franchises. Even if it wishes to compete, the playing field is far from level.

Municipal electric bills are often lower than those of corporate utilities. Rather than indicating superiority, such comparisons conceal cost differences that have consequences for deregulation. The first difference is that municipals can issue tax-exempt bonds, while corporate utilities cannot. (In 1988 Congress limited the amount of tax-exempt debt a municipal could issue to acquire corporate assets, but those limits do not apply to new investments by existing municipals.) This subsidy to one class of competitor will probably not vanish with deregulation, since a wide range of municipal securities are tax-exempt.

The federal laws of "preference power" also provide a subsidy to some municipals and cooperatives. Simplifying somewhat, power generated at federal hydroelectric sites must be sold preferentially to municipals and cooperatives, frequently at very low prices, before any can be sold to corporate utilities. According to the American Public Power Association, this transfer to a minority of utility customers stems from "a recognition that publicly owned resources belong to the nation's people, and should be distributed directly to the people where it is possible to do so." In reality, a corporate utility with access to inexpensive power must usually cut

both its rates to its own customers (under state regulation) and its rates for power sold to municipals (under FERC regulation). Most state commissions do not regulate municipal utility rates, which are set with varying degrees of rigor by city councils or local utility boards.

If municipals receive greater transmission access, tax-exempt financing and preference power will produce economic misallocations. Municipals will invest in some plants that would not pass a market test if their debt were taxable. Preference power is the object of what economists call rent-seeking competition. Priced low by law, preference power goes to whoever wins the political competition for it, rather than to where it has the greatest economic value. Marketplace competition finds better uses for resources whose prices reflect their true costs. Rent-seeking competition wastes resources (for example, the time of competing experts) in mutually canceling efforts to acquire a politically underpriced good. For better or worse, the current pattern of preference transfers is embodied in existing law and contracts, and the resources expended to effect them are gone. Opening transmission access would probably reopen this costly competition to obtain the underpriced good. Restricting access can foreclose some economically efficient transactions, but liberalizing it can facilitate some economically unwarranted ones.

The competition that is worth having is competition to acquire power—primarily competition to make contracts for capacity and energy in the bulk market. The same questions of market structure arise here as in antitrust analysis. We do not know how, if at all, economic performance will improve if the number of transactors is increased, particularly in light of the fact that economies of scale are extensive. Since municipals enjoy tax-exempt financing, should their access to the market be limited? Should municipals have an unqualified right to use the transmission of others for preference power? Economists and lawyers have usually disregarded such questions. The desirability of some deregulation hinges on the answers.

Cogenerators, Independent Power Producers, and Industrial Customers

As the bulk power market grew, utilities came to face an increased risk of regulatory disallowances. One reaction was to diversify power sources to include those that they either did not own or owned only fractionally. The Public Utilities Regulatory Policy Act of 1978 (PURPA) further stimulated this reaction by encouraging cogeneration, which produces electricity as a by-product of industrial heat. PURPA required utilities to purchase certain cogenerated power at "avoided cost"—the incremental cost of alternative supply. State regulators were to determine avoided cost. Cogeneration flourished in areas with abundant opportunities, such as Texas, and in areas where politics favored liberal payments, such as California. PURPA only obligates utilities to purchase locally cogenerated power. Cogenerators have added to the pressure for deregulation in hopes of obtaining the right to sell to more distant purchasers.

Going beyond PURPA, some state regulators now require that utilities institute competitive bidding for new generation. In a typical program the utility specifies its desired capacity and other technical characteristics. Bids may come from the utility itself, from other utilities, or from independent power producers who might be cogenerators. The distance between the independent producer and the utility may necessitate wheeling, as may other contractual provisions such as those related to the disposal of power unwanted by the utility.

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It is becoming apparent that utilities can operate reliably with power from independent producers and cogenerators. That being so, industrial customers are asking for the right to make their own transactions with such producers. Utilities strongly oppose such retail wheeling, and state regulators stand with them. Lost industrial customers are a lost source of cross subsidy to small ratepayers. A utility bypassed by an industrial customer will find itself with unamortized idle plants, whose cost must be paid by whatever customers remain. Such a utility may also be obliged to serve a bypasser who returns from the market empty-handed. Utilities and regulators may have convergent interests against retail wheeling, but not necessarily for the best of motives.

Ratemaking and Bypass

Existing methods of rate design encourage attempts at bypass. Regulators set most rates by allocating

the utility's total cost (including a return on capital) among customer classes and setting prices to collect the requisite revenue from each. The cost of a plant that produces joint products, such as power for both household and industrial customers, is allocated by seemingly precise but economically meaningless formulas. Rates are thus set at average cost, rather than at marginal cost as economists would recommend. If a utility must produce its last units of power at a high marginal cost, prices based on average cost encourage overconsumption and subsequent overinvestment in new utility plant.

Rates for full-requirements power, including wholesale service to municipals, are based on the average cost of all the utility's resources. In a competitive bulk market power is priced at marginal cost. Bypassers will go off the system when external power is cheap and will return to full-requirements service when it is not. To maintain reliability the utility must invest in facilities that will be "stranded" if the bypasser does not return. If regulators require the utility to serve a returning bypasser on the same terms as nonbypassers, either shareholders or captive customers bear the risks of a stranding. A bypasser would probably respond by claiming that stranded facilities are an indication that the utility failed to make competitive investments and that captive customers can be better protected by enhancing bypass options for them.

Much pressure for bypass would vanish if rates were based on marginal costs. Deregulating bypass but leaving rates at average cost will increase bulk market transactions, but the volume will not reflect increases in economic efficiency.

Both arguments make sense under different assumptions. Regulators might require utilities to fully resource themselves, even if bypass is likely. If so, exit fees or notice requirements for bypassers are warranted, but only in response to this questionable regulation. If the utility does not face such a regulatory constraint, an exit fee will encourage it to overinvest in plant and will discourage economically warranted bypass. Economists have not yet analyzed how to efficiently price those utility services (for example, voltage regulation) still used by bypassers or what the exact shape of the utility's obligation to returning bypassers should be.

Much pressure for bypass would vanish if rates were based on marginal costs. Deregulating bypass but leaving rates at average cost will increase bulk market transactions, but the volume will not reflect increases in economic effiency. Doing so may also produce pressure for overinvestment in transmission. Operational questions will also arise, such as how to curtail the utility's external purchases relative to the bypasser's as system conditions change. Many power contracts stipulate that the control area utility may interrupt at its discretion. If bypass is further liberalized, curtailment procedures may become the subject of complex litigation.

If industrial bypass increases, questions of equity for captive customers will become important. Economist Vernon Smith has proposed further opening the bulk market by allowing groups of captives to construct their own power packages, with the help of brokers. In effect, this introduces a broader set of competitive servers for the franchise and allows groups of consumers to originate their own franchises in disregard of political boundaries. The latter fact alone renders retail brokering unlikely. Beyond politics, suggestions for retail brokering will require the breach, reformulation, or legislative cancellation of such commitments as mortgage indenture provisions of existing utility bonds. It is hard to argue in favor of a deregulated market based on private contracts if such a market can only be instituted by forcibly abrogating other contracts.

Pricing and Planning Transmission

If deregulation is to increase efficiency, transmission service must be priced properly. Economically efficient marginal cost pricing of transmission will not recover its total cost, and average cost pricing will foreclose some economically desirable transactions. Viewing transmission in isolation, the marginal cost of using an unloaded line is zero. Viewing transmission as part of a network, marginal cost might be high if using transmission diminishes system reliability, for example, if the line is connected to a reserve generator. It is hard to put a dollar value on reliability and to incorporate this value in a transmission tariff. Adding more complication, electric flows and the associated marginal costs vary from minute to minute.

Although transmission is often a small proportion of the cost of a bulk transaction, wheeling services must be priced to reflect their scarcity and their reliability consequences. Ratemaking practice may preclude such pricing. FERC accepts a

variety of pricing methods but is reluctant to let transmission owners receive economic rents. Because rates are based on accounting rather than economic costs, it is unlikely that transmission will go to its most valuable uses. Before January 1992, FERC would not consider the opportunity cost of a transmission owner's foregone transactions when others used its lines for wheeling. This cost would be borne as higher rates by the owner's retail customers. Threats of a veto by state regulators compelled the commission to allow the inclusion of opportunity costs in transmission rates as a condition on the merger between Northeast Utilities and Public Service of New Hampshire. The need to price inadvertent power flows complicates matters still further. Existing rate practices do not allow rates to signal scarcity and to indicate where new facilities would be most valuable.

New construction is itself subject to an important jurisdictional conflict. Although the benefits of the transmission grid transcend state lines, jurisdiction over it is split between the federal and state governments. FERC deals with the pricing of transmission services and broad questions of access policy. State governments, including environmental agencies, determine the need for facilities and certificate their construction. There is little evidence that state agencies consider the impact of their decisions on nonresidents. Rather, one expects them to approve plans that maximize benefits to local residents. They might further attempt to capture the benefits of transmission in other states for their own constituents.

Split jurisdiction means that lines will probably be underbuilt, for reasons beyond environmental concern. The lines actually constructed will be inefficiently configured. Engineering reality precludes meaningful competition to build transmission, and political reality may preclude the efficient design of what does get built. In principle, utilities and regulators could agree on compensation schemes that would eliminate such beggar-thy-neighbor policies. FERC pricing practices, however, make the valuation of unconstructed facilities problematic. Also unsolved is the question of how to enforce a compensation scheme against free-riding beneficiaries.

Backers of liberalized access have said little about the jurisdictional problem, although it clearly affects any such proposal. Externalities and negotiating costs probably favor the federalization of siting decisions. For this to happen, however, Washington will have to confront fifty state regulatory commissions acting in concert with local environmental interests. Multistate planning agreements may delay rather than streamline the siting process, since individual states will probably insist on veto power.

Access and the Law

For all practical purposes orders to wheel can only be issued under *Otter Tail*'s antitrust standard. The Federal Power Act does not allow FERC to do so. Under PURPA, FERC can order wheeling, but not for retail customers, and only if an order "would reasonably preserve existing competitive relationships." FERC has held that such relationships include franchise competition. Wheeling is, of course, largely desirable because it might disturb competitive relationships. FERC's recent transformation of interstate gas pipelines into transporters took place under other laws. FERC has chosen to circumvent the law's restrictions by imposing wheeling obligations as conditions for the approval of utility mergers and power marketing plans. The commission's rationale is the Federal Power Act's requirement that FERC consider competition and the public interest when it does so.

The key case is its 1988 decision in the merger between PacifiCorp, a large northwestern utility, and Utah Power and Light Company. FERC required that the merged company offer its unused transmission to other utilities, including municipals, for firm wheeling service. If facilities are unavailable, the merged company must construct them, and if the delay in responding to a request exceeds five years, the company must cut its own bulk power transactions. Interruptible wheeling is not subject to such conditions.

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Although the PacifiCorp-Utah wheeling conditions were the most stringent ever issued by the commission, they did not satisfy environmentalists and industrial customers, who took the commission to court. In an August 1991 decision the U.S. Court of Appeals for the District of Columbia ordered FERC to explain why it did not impose a requirement

that the merged utility make itself available to wheel for industrial customers and cogenerators. In response, the commission decided to hold a "paper hearing" on wheeling for industrial customers in the near future. Regarding cogenerators, the commission offered a legalistic argument based on PURPA. Dissenting from that argument, Commissioner Elizabeth Moler remarked that it amounts to a "severe narrowing of the commission's authority" regarding access.

Most experts originally believed that the PacifiCorp-Utah conditions were singular, reflecting the utility's geographic dominance and Utah Power's reputation as a reluctant wheeler. Similar conditions, however, were imposed in September 1991 on Northeast Utilities' acquisition of Public Service of New Hampshire. Utilities are now offering open access in hopes of easing FERC approval of other transactions. In January 1992, Public Service Company of Colorado proposed to open its system for wheeling if the commission would approve its acquisition of some assets of the bankrupt Colorado-Ute Electric Cooperative. In power marketing FERC approved Public Service Company of Indiana's 1990 offer to sell base load capacity at market rates, conditional on an offer of open access to its transmission for other utilities, cogenerators, and independent power producers (but not retail customers).

Those developments signal important changes in the industry's environment. While they now apply only to special situations, it is probably only a matter of time before an analogous regulation or law affects all utilities. Until recently, both state and federal regulators generally agreed with the industry view that the prime purpose of a utility's transmission was to provide reliability and benefits for native load customers. The PacifiCorp-Utah conditions conflict sharply with that view. They essentially hold that a transmission owner cannot deny transmission access to others to give its own ratepayers short-term benefits. Corporate utilities and state regulators are critical of FERC's access policies, and both have said so through their trade associations. They claim that the policies are in conflict with state laws that require that the utilities give priority to economical service for native load. FERC Chairman Martin Allday's response is, "Everybody is somebody's native load customer." Gains to one utility's native load from a refusal to wheel may translate into larger losses for another utility's native load. The growth of the bulk power market makes it increasingly difficult to view utilities as parochial islands.

FERC is clearly moving to generalize its case-specific access rules. Some state regulators have proposed access policies despite possible federal preemption of the field.

FERC is clearly moving to generalize its case-specific access rules. In 1988 it formed a Transmission Task Force, chaired by then-Commissioner Charles Stalon. Its 1989 report contained excellent summaries of technical issues and critiques of access plans proposed by various industry groups. Elsewhere Stalon has described the task force's policy recommendation as a "deal" offered to transmission owners. Their potential to act monopolistically is greatest in long-term firm wheeling, as opposed to short-term or interruptible service. The task force wants transmission owners first to satisfy all demands for long-term firm wheeling, including new construction, and to allow users to resell their entitlements. In exchange, the utilities will receive the right to price short-term and interruptible wheeling flexibly in those naturally more competitive markets. The deal reads much like the PacifiCorp-Utah conditions. In a "Godfatherly" sense, it may be one that utilities should not refuse.

Such is the case because an alternative policy will come from Congress, possibly the current one. As part of President Bush's National Energy Strategy, both the Senate and the House have initiated legislation to reform the Public Utility Holding Company Act of 1935 (PUHCA). In the belief that PUHCA's constraints on independent power producers have retarded their expansion, both bills would exempt certain of them from treatment as public utilities under the act. The Senate bill does not address transmission access. The House bill, however, would expand FERC's power to order wheeling, including authorizing it in cases where the commission has determined that an order would strengthen competition. The full Senate approved an energy bill, which included PUHCA reform but not transmission access, by a ninety-four to four vote on February 19. The House Energy and Power Subcommittee has voted seventeen to five to approve a bill that includes PUHCA reform and access, on which the full Committee on Energy and Commerce has yet to act.

Some state regulators have proposed access policies, despite possible federal preemption of the field. The Wisconsin commission recently ordered major utilities in the state to develop joint-use transmission agreements. The California commission has instituted an investigation of possible state wheeling regulations, including some applicable to cogenerators. Texas, whose grid is not under federal regulation (because it does not cross state lines), requires wheeling of cogenerated power between utilities. Ohio Commissioner Ashley Brown has noted that the cost of most transmission is recovered under state regulation, where it is bundled into retail service. That being the case, states may have unused power to encourage wheeling, for example, by issuing construction permits conditional on access plans. They might also exclude facilities from the rate base if access provisions are inadequate.

The Academics, the Engineers, and the Policymakers

In a perceptive 1969 article economist Harold Demsetz questioned the usefulness of a still-common mode of economic analysis that he called the "Nirvana viewpoint." He wrote that its advocates "seek to discover discrepancies between the ideal and the real and if discrepancies are found, they deduce that the real is inefficient." His criticism was directed at economist Kenneth Arrow, who theorized that because certain markets were inefficient, government policy was in order as a remedy. Given what economists knew about government even then, Arrow's reasoning was faulty. No real market approaches theoretical perfection, the government would need to have extensive information at its disposal, and politics would probably not produce the right policy in any case.

Economists who favor electricity deregulation have all too often embraced the Nirvana fallacy, but with the roles of the market and government reversed. It is easy to equate deregulation with efficiency if one simply assumes that the preference power laws are rescinded, the conflicts between state and federal regulation are solved, and large corporate utilities are vertically disintegrated. No such scheme will ever get through Congress, and most people would probably be quite uneasy if the courts took on the job. The clear policy task is to deregulate toward the most efficient market possible, given the realities of politics and engineering. The details of an efficient transmission access plan may well depend on whether there is a law of preference power. Groups such as the Transmission Task Force are understandably silent on political matters. Economists and lawyers should know better, but have not always shown it in their writings. Likewise, unless deregulators face up to such engineering problems as loop flow, opposing technical experts can justifiably accuse them of irrelevance.

It is easy to equate deregulation with efficiency if one simply assumes that the preference power laws are rescinded, the conflicts between state and federal regulation are solved, and large corporate utilities are vertically disintegrated. No such scheme will ever get through Congress.

For all of the constraints on it, the bulk market has grown substantially in the past twenty years, and it has provided electricity consumers with considerable benefits. It will continue to grow, but by fits and starts rather than by Nirvana deregulation. Parties on both sides of deregulation have incentives to understate or exaggerate the obstacles to its growth that I have discussed. But even misstated arguments about the obstacles are probably superior to deregulation proposals that assume them away.

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