Electricity Deregulation

— WHAT, WHY, AND HOW

What's all this talk about "deregulation"?

by Barbara S. Haskew and Reuben Kyle

Almost daily for the past year, there have been news stories about California's nightmare of rolling blackouts, astronomical electric bills, and the virtual bankruptcy of its power distributors. The word that has become associated with these terrible problems is *deregulation*. The objective of this article is to give the reader some background on the deregulation of the electricity industry in the U.S. We discuss the history of the electricity industry, the rise of regulation, the motivation for deregulation, the transition to deregulation around the country, and the unique problems that face Tennessee.

Beginning in 1978 with the Airline Deregulation Act, the United States started to dismantle the regulatory structure of many industries. After more than 40 years of developing national mechanisms to regulate airlines, banking, broadcasting, intercity buses, electricity, household goods moving, natural gas, railroads, telephones, and trucking, the U.S. made a dramatic reversal of policy. During the intervening 20-plus years, the U.S. has eliminated many layers of economic regulation that had placed these industries in separate boxes with strict government overseers.[1]

The latest industry to feel the forces of deregulation is electricity. For most of the 20th century, one company generated the electricity, transported it from the generation facility to the local retailer, and distributed it over a local grid to our homes and businesses. These vertically integrated monopolists operated in prescribed geographic areas subject to state and federal regulation. One result is that today the price of electricity varies from under four cents per kilowatt-hour in Idaho to more

continued on page 4

continued from page 3

than 12 cents in Hawaii. These price differentials are the motivation behind the deregulation movement.

Electricity consumers in California, Pennsylvania, and a few other states are already able to choose their own electricity providers. Just as with long-distance telephone service, electricity consumers will choose their electricity supplier. Consumers may do business with whichever utility offers electricity in their community—American Electric Power from the Midwest, Georgia Power, or a provider located in eastern Canada.

It is entirely possible that Tennessee residential electricity consumers could see a rise in their rates under deregulation.

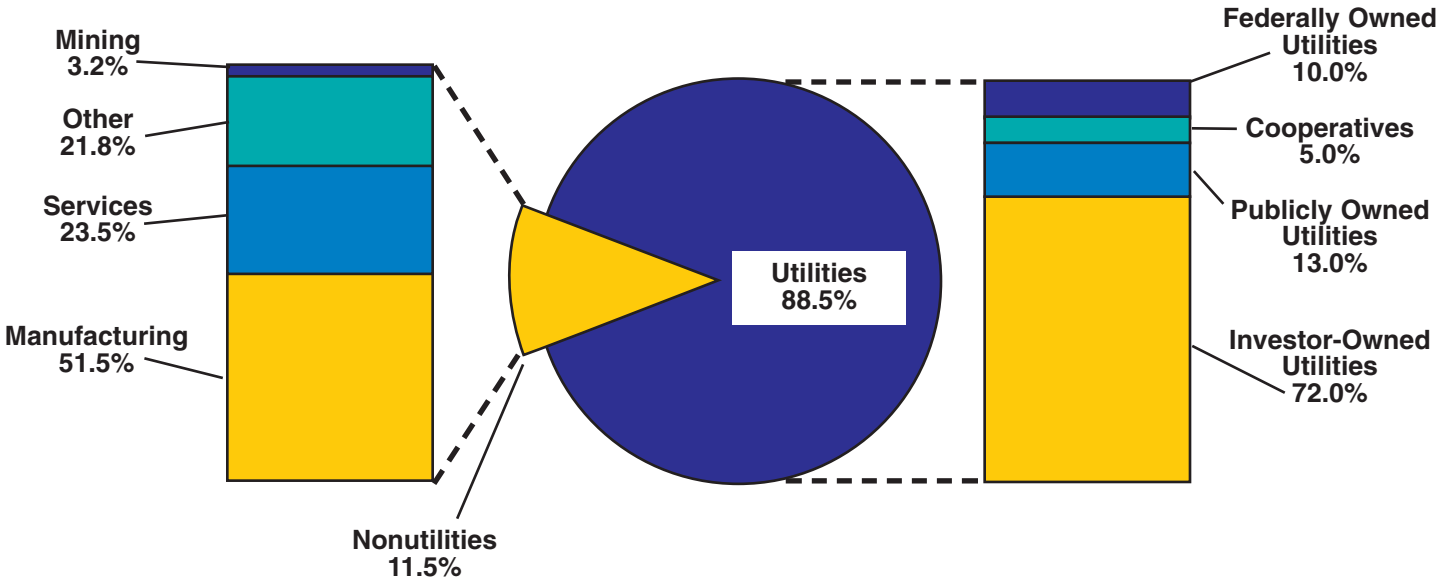
When you flip the light switch in your kitchen, the electricity will still travel over the same lines that now deliver power from your local electricity distributor. Local organizations will likely continue to provide and service those lines, but the electricity distributed by their grids could come from providers all over the continent rather than exclusively from the Tennessee Valley Authority (TVA).

A Brief History of the Electricity Industry

Electricity became commercially available when Thomas Edison opened the first generation plant in 1882 in New York City.[2] At the end of the 19th and beginning of the 20th centuries, the growth of the electricity industry was as dramatic and revolutionary as the information technology age has been in the past two decades. Initially, the industry was characterized by numerous private generation facilities competing for customers in close proximity to the plant. By the end of the 1800s, increasingly larger plants with newer technology were able to produce electricity at lower costs per kilowatt-hour, exploiting a phenomenon known as economies of scale.[3]

U.S. public policy evolved to favor either the municipal ownership of electricity producers or the regulation by states of privately owned producers. The Public Utility Holding Company Act (PUHCA) of 1935 limited the operations of electric companies geographically and in their financial structure. Along with the Federal

Share of Total Industry Capability by Industry Sector and Ownership, as of January 1, 1999



Source: U.S. Department of Energy, Energy Information Administration, "Electric Power Annual 1999" (Published August 2000)
http://www.eia.doe.gov/cneaf/electricity/epav1/fig2.html

Power Act of the same year, the PUHCA led to restructuring of the industry and the creation of a combined state and federal regulatory structure that still exists. The figure below gives electric generation capacity by sector and by ownership. It indicates investor-owned public utilities provide electric power for most Americans.

After energy prices increased by more than 500 percent in the 1970s, policymakers looked for anything that might provide consumers some relief. One result was the Public Utilities Regulatory Policy Act (PURPA) of 1978. The intention of the act was to encourage efficiency and innovation including the development of new independent producers. Next came the Energy Policy Act of 1992, which specifically created a class of wholesale power producers exempt from federal regulation.

In the mid-1990s the Federal Energy Regulatory Commission (FERC) issued rules that promoted competition in wholesale power markets and required integrated utilities to make their transmission lines available to other producers for a fee. These policy changes laid a foundation for the deregulation of electricity generation.

What Prompted Deregulation?

The deregulation of American industry was a product of the inflationary economic environment of the 1970s. For the most part it was not inspired by the businesses that were being regulated but rather came about when Congress was convinced that regulatory reform might reduce consumer prices. The changes began in the energy, transportation, and financial services industries and then spread to other parts of the economy.

Proponents of deregulation argue that it has benefited consumers in the form of lower prices and more choices. Estimates are that transportation deregulation alone benefits consumers by $50 billion per year. Some observers argue that the strong U.S. economy of the past two decades is a result of deregulation.[4] The FERC estimates that consumers may benefit to the tune of $20 billion per year from electricity deregulation.

Economists argue that deregulation and competition mean that prices are pushed closer to the cost of producing goods and services than in other market environments. Prices could fall if the regulated prices were higher than cost per unit, but prices could actually rise if regulated prices were below the cost of production. That circumstance has occurred in some part of just about every deregulated industry. It is entirely possible that Tennessee residential electricity consumers could see a rise in their rates. Under the current situation TVA sets rates by class of consumer—industrial, commercial, and residential—and its policy has favored residential users.

One important influence promoting deregulation in the electricity industry has been the development of new gas turbine generation technologies, making the old scale economies no longer applicable in the generation of electricity. This technological change together with the price differentials that large industrial electricity consumers see and experience across the country has been the main inspiration behind change.

What Would Deregulation Mean in Tennessee?

Despite the restructuring in other parts of the country, such efforts in Tennessee are moving at a much slower pace because most industrial, commercial, and residential customers in Tennessee are served either directly by TVA or distributors of TVA power. Because TVA is a government-owned corporation, its deregulation will require federal legislation. TVA and other interested groups are focused on the content of that legislation and how the utility and its customers can prepare now for competition.

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This preparation is a major undertaking since TVA is the nation's largest utility and serves more than eight million customers. Despite its staggering debt, the nation's largest for a utility, TVA's rates are still acceptable or attractive for many of the retail customers. Residential rates are among the lowest in the nation. Commercial and industrial rates are more on a par with the Southeast and U.S. average. To Tennessee's north, Kentucky Utilities and American Electric Power offer lower rates, causing industrial customers in Kentucky to argue that TVA power rates place them at a competitive disadvantage.[5]

In 1997 TVA began serious preparation for deregulation by committing itself to a 10-year business plan designed to make it more competitive. The plan would cut TVA's $27 billion debt in half by 2007 and hold rates stable for 10 years. Unfortunately the plan is already off target. Although TVA has kept rates stable, analysts estimate its debt reduction will fall far

continued on page 6

continued from page 5

short of the plan by 2007. As of September 2001 the debt still topped $25 billion and the agency has announced plans to reduce it by only $50 million over the next 12 months.[6]

The debt is worrisome, both to constituencies in the valley and to other utilities in the region. The U.S. General Accounting Office, responding to senators Mitch McConnell of Kentucky and Bob Smith, then chair of the U.S. Senate Committee on Environment and Public Works, reports that "if TVA enters a competitive environment with relatively high debt service costs, its ability to price power competitively could be jeopardized, thus increasing its potential for stranded costs."[7]

Electricity usage in Tennessee is the highest per capita in the nation.

These possible stranded costs concern TVA's 158 power distributors, who fear being tied to power contracts that would saddle them with these costs if the agency fails to reduce its debt. TVA Exchange, a coalition of investor-owned neighboring utilities, also expresses concerns about TVA's massive debt and the impact it would have on the region. "If the balance sheet of one utility—especially one as big as TVA—is not under control, it can adversely impact the regional economy. TVA's cash flow, for example, could become so constricted that it may hinder TVA's ability to maintain a reliable power system, something that would certainly affect the Southeast power network."[8]

TVA contends that it modified its debt reduction schedule to address other pressing and unanticipated needs. "The 10-year plan is a living document that must respond to changes. We awoke to a real dilemma … when we had really hot weather and we found we couldn't always rely on getting reliable power from others. With those uncertainties, we realized it made more sense to have some additional peaking capacity of our own."[9] To address this need TVA has added 3,500 megawatts of generating capacity since 1997 and in recent months focused on adding distributed peaking generation in the form of gas-fired combustion turbines.[10] The TVA Exchange objects to TVA's decision to add generation capacity, arguing that the region would be better served by TVA's focusing on debt reduction and energy conservation and letting TVA's distributors provide for some of their own needs.[11] Similar concerns are echoed by the Southern Alliance for Clean Energy, which decries TVA's encouragement of greater energy use and the decision to build more capacity to serve it. Pointing to recent statistics that indicate electricity usage in Tennessee is the highest per capita in the nation, the organization accuses TVA of failing to provide leadership to help its customers conserve and use electricity efficiently.[12]

Strengthening the transmission infrastructure is also a high priority for TVA because the utility wants to maintain and improve its reputation for reliability with its current customers. The valley's transmission system is under stress from the increased power flows resulting from deregulation. Deregulation both to the north and south has placed growing demands on TVA to move power from one utility to another across its service territory, but TVA's interconnections with other utilities were not designed to handle the volume of electricity that other utilities are now attempting to wheel across the system. Despite its record of reliability in providing electricity to its own customers, others in the industry and aggressive energy brokers see TVA as a bottleneck in the southeast and a barrier to effective deregulation.[13]

TVA and certain customers of its power may benefit from the slow progress of federal legislation that would deregulate TVA—progress made more uncertain by the California failures. Delays could provide increased time for TVA to address its generation and transmission issues and further refinance and reduce its debt at lower interest rates; provide an opportunity for the country and the industry to address and correct the deficiencies of the national grid; and, although investor-owned utilities in the southeast are moving toward deregulation willingly or unwillingly, allow TVA some protection from market forces during this interim period. Provisions of the 1992 Energy Policy Act exempt TVA from having to wheel power from other utilities to serve loads within TVA's service territory. Referred to as the "anti-cherry-picking" provision, this exemption effectively protects TVA from competition for its wholesale loads. Federal regulation is expected to eliminate this exemption and permit other utilities to compete for customers in TVA's service territory.

TVA, its power distributors, and its large industrial customers have developed a consensus on the provisions they would like to see in the federal legislation that will bring TVA into the competitive world of electric deregulation. This consensus, largely supported by congressmen from areas served from TVA power, is known as the "TVA Title."[14] Chief among these provisions is one that would remove the "fence" that generally prohibits TVA from forming contractual

agreements to sell power outside the area served as of July 1, 1957.

The "title" would provide for the renegotiation of existing power supply contracts between TVA and its distributors.[15] It would also provide that TVA's transmission rates, terms, and conditions would be subject to FERC regulation and that its stranded cost recovery would be determined under FERC rules. The "title" would give up some of the exemption that TVA currently enjoys from the antitrust laws. Also, the proposed provisions would reduce TVA's regulatory role in the approval of retail rates offered by the power distributors. This latter provision may be of particular interest to residential customers, whose historically lower electric rates result, in part, from the allocation of TVA's hydropower to their use. It is not clear that the Tennessee Regulatory Authority would continue this special cost allocation.

The deregulation of the electric utility industry is underway. Its progress may be rocky, but if done correctly it "…can lower costs, improve reliability, encourage technological innovation and even promote conservation."[16] Done poorly it can produce crises such as that experienced in California.

Many questions remain about the timing and specifics of deregulation in both wholesale and retail markets. Generation capacity, viewed in short supply in January 2001, may well be awash in surplus by 2004.[17] It is not yet clear what costs new security measures associated with nuclear capacity may impose on TVA. The transmission system today is not prepared to handle the demands of a fully deregulated marketplace. It is not clear that many policymakers are prepared to complete the task by extending deregulation to retail customers and providing rates that more closely reflect the true costs of producing, moving, and using power. As these issues are addressed in Washington and in other states, Tennesseans should be alert to how the progress of deregulation will affect their lifestyles and pocketbooks. ■

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Notes

1. Economists distinguish between economic and social regulation. Economic regulation is policy that supervises prices, the quantity and quality of output, entry and exit of providers, profits, and capital expenditures. Agencies such as the Civil Aeronautics Board and Interstate Commerce Commission, neither of which still exists, regulated airlines, interstate trucking, railroads, intercity bus service, and other transportation companies. Social regulation, on the other hand, deals with health, safety, and environmental issues. There has been much less reform regarding social regulation than economic regulation.

2. An excellent and convenient history of electricity and the electricity industry is available at the Smithsonian Institution's website, "Powering a Generation of Change." http://americanhistory.si.edu/csr/powering/index.htm

3. The expression *economies of scale* refers to the decline of per unit operating costs as the quantity of output increases when all of the resources used by the producer can be varied. The evidence indicates that economies of scale are frequently available in the production of goods and services but usually exhausted after some point. In a few industries these economies may continue over a very wide range of output. The result is termed *natural monopoly* because there is likely to be only one surviving producer in the market.

4. Robert Crandall and Jerry Ellig, *Economic Deregulation and Customer Choice: Lessons for the Electric Industry*, (Fairfax, VA: Center for Market Processes, 1997).

TVA's interconnections with other utilities were not designed to handle the volume of electricity that other utilities are now attempting to wheel across the system.

5. Dave Flessner, "TVA Plans to Make Upgrades to Plants" *Chattanooga Times Free Press*, September 20, 2001, pp. A2, 6.

6. Ibid.

7. United States General Accounting Office, "Report on TVA's Financial Condition," GAO-01-327, submitted to senators Bob Smith and Mitch McConnell, February 28, 2001, p. 5. Stranded costs are costs or investments that might not be recoverable in a competitive environment. An example would be an uncompleted nuclear power plant.

8. John Howes, "TVA Needs to Confront Problems, *Chattanooga Times Free Press*, June 3, 2001, pp. G1, G2.

9. Dave Flessner, "More Power Needs Cloud TVA Future," *Chattanooga Times Free Press*, August 8, 1999, p. A1.

10. While the addition of this capacity had required funds targeted for debt reduction, much of this investment has involved leaseback arrangements that add generation capacity without increasing TVA's debt.

11. Howes, *op cit*., p. G2.

12. Dave Flessner, "Tennessee's Top Power Users," *Chattanooga Times Free Press*, September 5, 2001, pp. A1, A8.

13. The issues related to transmission are quite complex and deserve much more discussion than is offered here.

14. TVA Title, Fact Sheet, May 16, 2000.

15. B. J. Gatten, "The Power of Choice," *Inside TVA*, August 14, 2001, pp. 1, 3.

16. Peter Coy, "How To Do Regulation Right," *Business Week*, March 26, 2001, p. 112. The costs of producing power vary significantly around the clock. "[T]he true cost of running your dishwasher during peak demand may be 100 times higher than the cost at times of low demand" (p. 112). If some portion of customers shift more usage into the off-peak period, then the system will require less expensive generating capacity.

17. Edward H. Baker, "Balance of Power," *Fidelity Outlook*, August 2001, p. 8.