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3415
S. Sepulveda Blvd.
Suite 400
Los Angeles
CA 90034
(213) 391-2245

PRIVATIZATION OF THE TENNESSEE VALLEY AUTHORITY

Douglas A. Houston

EXECUTIVE SUMMARY

The Tennessee Valley Authority (TVA) lists over $22 billion in assets dedicated to its power program, making it the nation's largest utility. Were it an investor-owned enterprise, it would also be the power industry's largest bankruptcy. Privatization of TVA, accompanied by deregulation, will result in more efficient use of TVA's resources, eliminate taxpayer subsidies, stimulate competition in the electric utility industry, and bring in some $12 billion to the federal Treasury.

The TVA nuclear program now lies in shambles, with all units inoperative. Only heavy federal subsidies or hefty consumer price increases can keep the TVA afloat. It sells power at rates below those of private producers only by ignoring its full costs. This subsidized power reduces incentives to conserve energy.

Current prospects for government reforms aimed at reversing TVA's continuing mismanagement are dismal. Though the TVA began laying off some 7,500 employees in June 1988, this move will not come to grips with its more fundamental problems. The inefficiencies within the TVA won't go away. Instead, reform of TVA requires a plan to simultaneously privatize and deregulate TVA power sales.

The first step would be to privatize TVA's fossil fuel power production capacity. This capacity would be spun-off into several private generation firms, which would be sold in stock offerings, with discounted shares offered to employees and users of the system. Second, a user-owned power transmission firm would be formed with a mandate to allow broad user access. TVA's nuclear plants would be placed in a separate "holding pen," after which they would be sold, with due care for safety concerns, to private power firms at the highest obtainable price. Finally, wholesale-price regulation would be eliminated.

Consumers, taxpayers, environmental interests, the utility industry, and TVA employees all serve to gain through this proposed privatization plan, which will turn TVA assets into efficient, competitive facilities.

I. INTRODUCTION

The Tennessee Valley Authority (TVA) today lists over $22 billion in assets dedicated to its power program, making it the nation's largest utility. The TVA--if it were an investor-owned enterprise--also would be the power industry's largest bankruptcy. Book value of assets in nuclear plants are set at perhaps twice their market value, while non-nuclear assets are significantly underpriced. Only through heavy subsidization by the federal government or significant escalation of consumer prices can the TVA stay afloat in the coming decades. In this paper I intend to: 1) briefly explain why privatization is a superior alternative to the continuation of this federal power corporation; 2) outline a specific privatization plan for the TVA that meets practical political concerns; and 3) assess the financial consequences of the proposed privatization.

A justification for divestiture is that the TVA's electric power program, in sum, simply would function more effectively if it were privately owned. This assertion rests on showing that competition in the electric power industry can offer a superior long-term alternative to public power. With private ownership comes sharp divergences from past practices and organizational structure. These changes are driven by the incentives faced in an open market: Shareholders will demand that managers focus on wealth expansion. As a result, the producers will have to design systems that effectively--without subsidization--deliver power to consumers, an objective that the TVA has been unable to accomplish.

Unlike some other federal privatization proposals, divestiture of the TVA alone would be an incomplete policy prescription. Upon selling TVA assets, newly created private property rights quickly would become entrapped by state and federal public utility regulations, in particular, rate-of-return controls and exclusive territorial franchises. Instead of a hoped-for stimulation of efficient power markets, TVA privatization might simply lead into other means of masking market incentives.

Thus, the task is more complex: Simultaneously privatize and deregulate TVA power sales. This should have far-reaching effects on the evolution of the U.S. electric power industry by providing real-world evidence about how unregulated power markets function.

During the 1930s, the TVA served as a grand experiment in socialism; its successes were to lay the groundwork for public enterprises in other regions and sectors of the economy. Now the TVA lies in disrepair. But through a metamorphosis into competitive enterprises, the TVA can succeed by showing us the path to restructuring the power industry along competitive lines.

II. RATIONALE FOR PRIVATIZATION

Original Role and Extension

The TVA's original goals were limited, somewhat vague, and clearly the result of significant political compromise. As historian Paul Conklin states: "Typical of so much Depression legislation, the act (Tennessee Valley Authority Act of 1933) was a bit of a blank check. Yet historical tradition reinforced the more explicit enablements of the act--power, agricultural development, navigation, and flood control."[1] But any sense of balance in this act was quickly lost as power production came to dominate. Indeed, the TVA's early power development strategy was intended to exclude any "partnership" role with private power firms, although the original act was unclear about the relationship between investor-owned utilities and the TVA.

TVA leaders preempted private power extension into the region, underlining their desire to be the sole agent for development. The TVA increased electricity capacity in support of World War II efforts, cementing public perception of it as the major, continuing public power producer and as the appropriate regional planning agent.

Capture

Originally the TVA was controlled by individuals with a broad regional or federal viewpoint. Early on, politically savvy management attempted to bring local support to bear on issues related to federal funding, support for TVA projects, and defense from its numerous opponents. In the 1930s, TVA Director David Lilienthal initiated a policy of bringing private, successful businessmen in communities served by the TVA into local support organizations. Abundant, cheap power became the goal around which support was built. These local groups, now formally represented by the Tennessee Valley Public Power Association (TVPPA) and the Citizens for TVA, Inc. (CTVA), came to have great political clout.

The call for "cheap power" to local constituencies has driven the TVA in the post-World War II decade, into the 1960s, and beyond.[2] The TVA's bureaucracy depends upon these local groups to define a TVA manager's role to the point where an individual chair of the Board of Directors could not remain in office if he were unsatisfactory to these local groups.

This populist form of "capture" implies a significant lack of accountability to the taxpayers, whose money is appropriated for the TVA's purposes--purposes that are defined largely by aggressive, "rent-seeking" consumer interest groups.[3] So powerful are these interest groups that, at present, any proposal to study privatization is met by howls of rage. In 1986, an amendment to a

federal appropriation bill prevented any federal funds being used for the study of privatization of the TVA.[4]

So weak has external control of the TVA become that even attempts to bring "outsiders" onto its board have led to dissension, most recently in the late 1970s. At that time, newly appointed Board Chairman David Freeman attempted to negotiate a settlement, exceeding $1 billion, to atone for the continuing violations of environmental laws by TVA coal-burning plants. With such a settlement, consumer prices would have risen. Freeman was forced out.

In contrast to Freeman, his replacement, Charles H. Dean, was a long-time member of the TVA "family." He was recommended to President Reagan for appointment as a man better qualified to represent the viewpoints of consumers and distributors of the region.[5]

Current Interest Groups Concerned with Privatization

Who are the supporters of today's TVA? They include: (1) distributors who buy under contract from the TVA; (2) municipalities in the region concerned about consumer prices and economic development prospects for their communities; (3) most regional newspapers (with the same general concerns as the cities); (4) the region's congressional representatives; (5) public power supporters elsewhere in the nation, including the American Public Power Association (APPA) and the extremely well organized and politically astute National Rural Electric Cooperative Association (NRECA); and (6) TVA leadership and employees, represented in part by unions.

The first two categories represent, broadly, consumer interests. These are organized in part through the TVPPA and CTVA. Their messages of support for the TVA are inexpensively publicized through a willing regional media. Regional congressional representatives toe the line on the TVA because the broad constituency for a continuation of "cheap abundant power" translates into votes. Political careers are thus partially dependent upon support for the TVA, much as fervent support for farm subsidies is a requirement for political success in states where agriculture is a dominant economic interest.

Even criticism of the TVA is considered anathema, and support for the authority bridges ideological differences with ease. Powerful consumer interests and management of the TVA in themselves can frustrate political challenges to the TVA. Coupled with the national public power (APPA) and rural development interest groups (e.g., NRECA), a nearly invincible shield is formed, keeping the TVA from bearing responsibility and accountability for its past blunders or current actions.

Nevertheless, a successful privatization campaign can be mounted. Effective tactics, described later in the paper, require struc-

turing a privatization program with particular attention to consumer and employee interests, thus splintering the coalition with national public power and rural cooperative groups. A plan can be developed that targets benefits to consumers and employees, yet avoids creating an ongoing government funding base which would undercut the primary privatization goal of introducing market discipline to the TVA. A useful proposal cannot be obtuse--participants must clearly understand how they will benefit and what risks they face. Therefore, a privatization plan, like the one described in Section III, must be patiently and honestly explained to the interested individuals and groups.

Major Problems with TVA Power Provision

The TVA is able to sell at rates below those of private producers only by (thus far) ignoring the full costs of its activities. The subsidized (and therefore "cheap") power provided by the Authority results in an overextension of electricity use by regional businesses and homes. Indeed, the TVA long has aggressively promoted consumption of electricity and electricity-using appliances in order to build this load (demand) on the system. The TVA's motivation in load-building is understandable. It broadens and strengthens grassroots support for the power system which, in turn, serves as the fundamental defense from political criticism of the TVA.

One result of load-building through low pricing is that alternative energy forms are edged out of the marketplace. Another result is that conservation incentives and consequent efforts are reduced. The illusion of enduring, cheap electrical power leads residential, industrial, and government agency users to invest excessively in electricity-using capital. Now locked into these long-lived energy assets, consumers are susceptible to large losses if electricity prices rise. Although TVA rates are currently about one-half the average in the rest of the country, they are rising more rapidly than elsewhere. Thus, TVA users are harmed substantially by price increases. Justifiably, they fear more of the same over the next decade, particularly as the TVA comes to grips with its nuclear problems. Users can be expected to argue voraciously for continuation of a "low-cost" electricity regime.

The TVA justifies its heavy-handed marketing efforts by arguing that the unit cost of power falls as larger-scale plants and systems are built. That deduction has merit only up to a point. Although some of their many coal-fired plants are technically efficient operations, in general these scale (size) economies were long ago exploited. The nuclear program initiated in the 1960s was premised on a poorly conceived notion about the technical and managerial requirement for building and operating the proposed huge nuclear plants. Unreasonably high demand projections, overly optimistic assumptions about the gains from "sizing up" (beyond known technical knowledge), and a cavalier acceptance of poorly

understood safety risks are key factors behind the TVA's current nuclear woes.

The relationship of the TVA to the nuclear fuels industry demonstrates an unusual twist in the supply and demand for TVA power. The production of nuclear fuel requires large quantities of electricity, and the TVA's largest consumers have been nuclear fuel processors. These fuels, in turn, are inputs to nuclear power production. Thus, the rise and fall of TVA's own nuclear program has a direct effect on the demand for nuclear fuels and that, in turn, alters demands for TVA power. Not surprisingly, the TVA is a strong advocate of nuclear power programs--both its own and other utilities' programs.

The TVA nuclear program now lies in shambles, with all units (valued on the 1986 TVA balance sheet at over $15 billion) inoperative.[6] Eight units were canceled in the early 1980s due to a lack of consumer demand. Five completed plants have been shut down due to a myriad of safety-related problems. Three units are in various states of completion. A last nuclear unit is "deferred." All are subject to unrelenting political pressure from environmental interests and others worried about nuclear safety, such as the Tennessee Valley Coalition, a public interest group closely watching the TVA. Generally, opponents of nuclear power seem to believe that any nuclear plant is a bad one. Rightly or wrongly, this pervasive attitude is strongly held by committed political opponents and must be reckoned with.

The TVA's nuclear safety problems have somehow evaded the kind of intensive, negative publicity focused on the Three Mile Island accident in Pennsylvania. In 1975, a fire at the Brown's Ferry nuclear unit came close to becoming a disastrous accident. Fortunately for the TVA, the inquiry was quietly handled, unlike the Pennsylvania case. But unfortunately for the TVA, Brown's Ferry provided the impetus for a searching federal review of the TVA nuclear program. This (continuing) review has lead to the withdrawal of nuclear plants in the 1980s. Still, the TVA steadfastly maintains that these will be put back into service.

But new safety problems arise even as others are corrected. Realizing that the problems with their nuclear program were beyond the expertise of its staff, the TVA brought in over 2,000 consultants and new employees to run the nuclear program. Now, under the leadership of retired Admiral Steven A. White, TVA's Office of Nuclear Power is trying to restart the program. In April 1988, TVA commissioners reported before the House Energy and Commerce Committee that some nuclear safety issues were "resolved," by applying the unconvincing logic that some safety regulations were being temporarily waived.[7]

The TVA was not alone in misjudging nuclear energy prospects. Investor-owned utilities, too, have not emerged from the battles over nuclear power without scars, but most have sensibly retrenched when political and regulatory opposition grew stronger. The TVA, by contrast, hardly wavered in its enthusiasm for nuclear power, acting as if the Authority's federal status and powerful local political supporters would defeat all opponents.

Accountability

The past practices of the TVA point to a lack of accountability. Although ostensibly controlled by the President, with lines of reporting to Congress, the TVA instead frequently has acted independently. The 1959 Revenue Bond Act allows the Authority to raise debt privately for power projects, thus further freeing the system from the need to beg for congressional appropriations. Power investments can be undertaken with the flimsiest of federal oversight.

Key mechanisms that encourage good performance by profit-seeking firms under conditions of direct and potential competition do not bear upon the TVA. Market "discipline" for poor performers--bankruptcy, hostile takeovers, and capital market constraints--are irrelevant to the federal power corporation's behavior. In particular, the TVA faces a capital constraint quite different from that binding a private firm--even an investor-owned public utility. The latter must acquire equity and debt capital in competition with all other potential users of funds.

The TVA, by contrast, relies on the beneficence of the Federal Financing Bank (FFB) for the bulk of its capital. This obscure federal agency (which lends approximately $7 billion per year) is required to consider only TVA certification in determining credit worthiness. Thus, the Authority gets what it requests, at an eighth of a percentage point over Treasury bond interest rates. Given the grave financial weakness of the TVA, this rate is several percentage points below that at which it could borrow in competitive markets without federal government guarantees of loan repayment.

A 1985 OMB study suggested that the subsidy reduced TVA consumers' bills by 3.46 percent in 1984. Continuation of the interest-rate subsidy was estimated to be worth a present value of $1.3 billion.[8] The TVA, however, claims that no subsidy is involved. To them, the transactions with the FFB can be thought of as placing the taxpayer in a bondholder's position. Although the FFB credit extensions are not guaranteed explicitly by the Treasury, a default by the TVA would place the FFB in default with the Treasury, which leaves the taxpayer ultimately liable for the problems of the TVA.

The confidence of investors that the federal government would never let TVA dishonor its indebtedness is reflected in the Authority's

private bond interest rates. These are not far above Treaury bond rates. If cash flow problems emerge, the government's receipts for repayment of appropriations from the TVA will, by statutory law, be halted so that private debtholders are not harmed. The lack of an interest premium strongly suggests that investors' confidence in the TVA's creditworthiness is linked to that of the United States government and the virtual certainty of a federal bailout whenever needed.

Control of the TVA

Problems of control pervade government corporations simply because their managers do not face market constraints on their behaviors. The federal government consequently must expend considerable resources in efforts to decrease the divergence between the TVA managers' and the government's goals. Compounding the control problems is the vague, often self-contradictory expression of federal goals, which leads to poor understanding of what the federal "owners" desire. Moreover, the executive branch and Congress have shown little taste for applying careful (and expensive) behavioral controls or forcing a reorganization of the struggling TVA. For example, Senator Gordon Humphrey of New Hampshire essentially stands alone in Congress in opposing the continuation of TVA's drawing rights on the Federal Financing Bank. To most members of congress, whose constituencies are uninformed on the issue (and given the small per voter effects, rationally are likely to remain ignorant), funding the TVA is a non-issue.

Yet the gray, distant cast of taxpayer-citizens pays heavily for the TVA in a number of ways. Taxpayers have, of course, long subsidized the capital investments. Although the TVA legally is required to pay a portion of past federal appropriations, these repayments to the federal government are not intended to cover the appropriations fully. Quite probably, if the financial difficulties of the Authority were to threaten the repayment of private or public debt, Congress would step forward to restock the larder with more tax dollars. This undemanding, uncritical, and protective federal position serves as a comfort to the TVA. It reduces the incentives of TVA managers to search for innovative alternatives to business as usual, even when business is far from normal.

Consumers of TVA power also are beginning to absorb some of the costs of TVA mismanagement. For example, the cancellation of eight nuclear plants in the early '80s did not lead to an immediate asset write-off. Instead, the units are still carried as valuable "deferred assets" because the TVA plans to earn a return on them over the next decade, though not one kilowatt of energy will flow from these reactors. This means that, through cost-plus pricing, consumer rates will rise. Consumers of the TVA are becoming well aware that <u>they are the residual risk takers for the TVA.</u>

Constraints placed on the TVA's marketing practices also increase the cost of power regionally. Whenever the TVA sells power at prices below the going (market) price in the Southeast, an added cost is created, equal to the difference between the highest excluded value for that power and the value placed on it by those obtaining service. The TVA cannot market power outside its legally defined territory, a requirement based on a once-held fear that the Authority would be able to unfairly compete with investor-owned utilities in the South. Now, some of these surrounding utilities in high-growth areas would pay well for acquisition of the TVA's productive assets or the power it generates. Virginia Power and Duke Power companies are apparently interested in such acquisitions at prices that would undoubtedly yield the TVA a higher return than do its contract sales to its distributors.

The costs here relate to a misdirection of resources from their highest valued use. The TVA, of course, would be unlikely to consider a power strategy that would undermine its traditional consumer base. These costs, however, are considered, not through dispassionate economic analysis, but rather a rough and tumble political debate.

For example, the Southern States Energy Board (SSEB), an organization of public officials and business leaders, examines Southern power developments with no clear ideology or monolithic interest. Its official views, in fact, rarely touched upon "The TVA Question" until Virginia governor Gerald Baliles became chair of the group in the fall of 1986. He, unlike past chairs, was willing to receive reports critical of TVA policies. One, from Virginia Power (an investor-owned utility) argued that the TVA be turned into the electric power equivalent of Conrail. Such radical views, however, have been strongly countered by others, including the TVA itself and the American Public Power Association.[9]

A further TVA cost element relates to the lower level of environmental cleanliness from TVA operations than would be expected from privately owned utilities. The overarching TVA objective of cheap, abundant power has kept the TVA from engaging in costly environmental cleanup tasks, and its management has only grudgingly moved toward compliance, relying on their special political position to avoid prosecution.

Major confrontations between the TVA and the states over coal-fired plants were common in the 1970s. In Kentucky, for example, two large TVA plants emitted large amounts of sulfur dioxide. Kentucky's Air Pollution Control Commission, working through the authority it believed was granted under the federal Clean Air Act, attempted to limit such pollutants via a permit system. A first step of the approach was to gather information on pollutant outputs from firms. The TVA refused to comply, arguing that federal agen-

cies did not fall under state authority, and thus the TVA needed no state permits. Kentucky filed suit against the TVA and other federal agencies, requesting clarification of this issue of authority, apparently granted under Section 118 of the Clean Air Act. A subsequent Supreme Court ruling, Hancock v. Train, backed the TVA's position.[10]

The TVA also lobbied against the 1977 Clean Air Act amendment that altered Section 118 to require federal facilities to comply with state permit requirements. During the hearings, the TVA's behavior was cited as a major reason for making the revision. None of the TVA coal-burning plants were in compliance with the environmental laws of the states in which they operated. Although this battle might be pictured as a matter of state-federal jurisdiction principle (indeed, the TVA argued just that), the lack of significant autonomous effort by the TVA to clean up these plants suggested other motivations.[11] Clearly, the added cost of pollution clean-up would have pressed consumer prices upward, endangering consumer political support for the TVA. That was not to be allowed.

Short Term Outlook for Reform of the TVA

The current prospects for government reforms that would reverse the TVA's continuing mismanagement are dismal. With strong support from congressmen from the TVA region, managers have little fear that major structural solutions will be imposed. And, with a direct line to the Federal Financing Bank, capital market discipline remains a hazy rhetoric, inapplicable to the federal corporation. The TVA has a $30 billion "line of credit" provided on the basis of earlier expectations that the nuclear power program would grow; about one-half that amount has not been extended. While the TVA must fight occasional skirmishes with congressional committees, the chance of major legislative reform today is very small.

TVA Board Chairman Marvin Runyon plans to bring the idled nuclear plants back into action, which, due to the cost-plus pricing formulas applied, would raise consumer prices. Yet Runyon, in a speech to TVA employees, argued against scrapping the nuclear program. "If we follow that advice," Runyon said, "we'd have to lay off all our nuclear employees and still (emphasis added) have to raise rates immediately to write off investments already made."[12] Whether nuclear power is treated as an asset or expensed, the nuclear program sunk costs will be recovered.

But to avoid the chilling consequenses of raising prices to the consumers who form the essential political support for the TVA, Runyon also pledged in early 1988 to freeze rates for three years, even in the face of an estimated 6 percent increase in TVA costs. Thus, without further borrowing or new appropriations from Congress, the TVA has had to retrench. In June 1988, the TVA began layoffs that will eliminate 7,500 jobs by October 1, 1988. Over

half of the job losses are in the nuclear power division, which will slow the movement to reopen nuclear plants. Additionally, management salaries are to be frozen as of October 1. The TVA also reduced the number of administrative levels.[13]

Chairman Runyon has promised to revamp the organization even further. Perhaps with vision of the coming on line of nuclear plants, TVA management speaks of becoming a competitive organization and marketing power outside the region, although the TVA's current trade balance in electric power is in deficit. Other utilities provide 21 percent of total TVA system requirements. The aggressive rhetoric is without much punch because today's TVA is a high-cost producer in an area of relatively plentiful power, and without statutory change such marketing would not be possible. The desired increased openness to the outside world might also work both ways, and large industrial accounts of the TVA would become immediately susceptible to competitive challenges from outside utilities.

The TVA leadership's recent tactics may buy them time because only a strong political response by the TVA's consumers could cause immediate political trouble for them. If the TVA keeps its promise not to raise rates, consumers will be pacified. But the inefficiencies within the TVA won't go away, and without a bailout the price freeze pledge cannot hold up.

TVA activities over the last 50 years provide dismaying evidence that rigid, politicized behavior, unresponsive to market forces, is a rational response to the structure of incentives faced by individuals controlling the fate of this federal corporation. The problems occur not only in operational practices (e.g., underpricing electricity) but, more importantly, in selecting and structuring physical and management capital for the future (e.g., developing huge nuclear plants). These actions are not bizarre aberrations, but rather are the logical consequences of the incentives faced.

Although TVA officials state that they will restructure TVA, the demands that will shape such change clearly are politically articulated rather than market-derived. Thus, the TVA remains cut off from most market forces, not because of a lack of brilliant, insightful leaders, but rather because its success is defined in decidedly nonmarket terms. The gains to bringing competitive pressures to bear on the TVA are great.

III. PRIVATIZATION POLICY PLAN

The Larger Revolution

TVA privatization must be placed in the context of the electric power industry's evolution. Currently, private (investor-owned) power companies produce about four-fifths of the nation's electri-

city. All these are extensively regulated. Price and service controls are exercised by state public utility commissions and the Federal Energy Regulatory Commission. But major competitive changes already are evident in some sectors of the industry and more will come. For example, bulk power exchange among power wholesalers is a growing phenomenon and is easily extended to nonutility organizations.[14] Further, large industrial users and local residential distribution systems are aggressively searching for inexpensive power.[15] These entrepreneurial efforts, when coupled with technological advances that make large-scale power grids more effective, are leading to a rethinking of what a power firm should be doing, and how it should be structured. Consequently, the role of public utility regulation also is in question.

One view commanding attention today is that an extensive regional transmission grid to which users (both buyers and sellers) are allowed broad access, can expand electric power markets, diminish individual supplier market power, and consequently, reduce the usefulness of public utility regulation. Many utility executives, previously adamantly opposed to deregulation, now are proposing such initiatives.[16]

The debate over deregulating electric power continues among academics, industry participants, and government agencies.[17] During a process of overall industry deregulation, the role of public power providers, primarily the TVA and the federal Power Marketing Administrations (PMAs), must be carefully thought out. Privatization of these public power organizations should, in general, speed the progress toward open electricity markets nationwide. Without subsidies, privatized and deregulated producers cannot undercut the marketing activities of others and a market price will prevail.

But privatizing public power producers also will mean more competitive pressures for all at a time when public utilities are battling with numerous other iconoclastic suppliers. As a result, privatization may be regarded as dangerous by utilities. Many investor-owned utilities will remain hostile to deregulation and consequently may become political allies of the public power forces in a fight against privatization. On the other hand, a privatization of the TVA might be perceived by investor-owned electric power firms as an opportunity to expand both markets and production capacity. In sum, the investor-owned utilities hold a variety of views about privatization, just as they do about industry deregulation. They cannot be counted as a monolithic interest group.

Privatization opponents can legitimately argue that alleged gains from privatizing power markets are empirically unsupported. No one has yet made the sweeping changes needed, but the British are in the process of doing so. The British government plans to privatize

their nationalized power system by: 1) selling its 12 area electric distribution boards; 2)separately selling the generating capacity of the Central Electricity Generating Board (CEGB); 3) and spinning off the national transmission grid into an organization jointly owned by the 12 distribution firms.[18]

One unfortunate consequence of the British reform may be that American-style public utility regulation will replace government ownership and foul their attempts to engage market forces. Privatization of the TVA should avoid this. Instead, it should be viewed not just as a stand-alone asset sale but as one component of the larger task of competitively restructuring the American power industry. A privatized TVA would serve not only to eliminate a market impediment to regional deregulation, but also to gain vital, missing knowledge about large-scale privatized (and daregulated) markets in power. That knowledge can be applied elsewhere.

Guiding Principles in Privatizing the TVA

Clearly the selling of the TVA's assets could be structured in a number of ways. Just as clearly, principles should guide this process. First, getting the necessary federal legislation to privatize will require building strong political constituencies that do not exist now. The basics of interest group politics are clear: Self-interest determinations will significantly influence the political role of groups such as TVA employees and consumers. Currently, no vision of a privatized TVA has been articulated that would surmount the understandable resistance of those most dependent upon the perpetuation of the federal corporation.

In essence, preparing a "public choice" analysis of a privatization plan is crucial to its real-world success. That plan would answer this question: How can sufficient interest-group backing be developed to cause political actions to be taken that will initiate the privatization and then nurture the budding competitive process?

Second, mustering political forces behind privatization will come at a price. While nothing can be done without such support, the making of side payments can damage the original intent of privatization, which is to promote effective, competitive forces. Thus, one common-sense rule should be to avoid grants or entitlements that require continual government intervention. For example, no guarantee should be made to any consumers that prices will be restrained by other than market forces, and no bequest of lifetime employment in a specific job should be made to an employee.

On the other hand, providing a group with an initial, one-time gain may be a useful motivation and does not take on the characteristics of a continuing property right. In the program detailed below, the incentives offered are of the "one-shot" kind. For example, employees and consumers might be given one-time rights to buy shares in newly privatized firms.

"Giving" any group a particular privilege clearly has ethical import. Unless net value is gained from the privatization, entitlements redistribute income from taxpayers to the winners of rights. On the other hand, if greater total wealth is the consequence of privatization, then the burden on taxpayers can be reduced. The British have used this approach successfully to move nationalized firms into the private sector.

Beyond utilitarian calculations of whether entitlements improve the chances of privatization, some interest groups may be considered deserving because they have come to depend upon the TVA as if a long-term contract were in effect. For example, privatization may place consumers and employees in risky positions. Had they previously been aware that the public power authority was going to be dissolved, they might have formed contractual arrangements to protect themselves. Therefore, providing one-time entitlements may be considered, in part, an offset for their bearing unexpected recontracting risks.

Components of a Privatization Plan

Below are seven policy suggestions for privatizing the TVA, with brief explanations of the reasoning behind these points.

1. Break TVA power production into independent power firms.

The TVA's in-use, fossil fuel power production capacity would be spun-off into three or four private generation firms (GENCOs), each having approximately the same capacity and portfolio of producing units (base-line, secondary, and "peaking"). Each of these should be large and diversified enough to take advantage of generation-level economies of scale.

Long-term leases to operate hydro facilities initially would be assigned to the new private producers. Thereafter, federal leases for operating the power hydro facilities would be negotiable with any private participants. The value placed on these leases by the federal government should be based on the capitalized market profits from the power generated--and not current book "costs" of the hydro assets. The latter understates the market worth by about half. The nuclear power plants of the TVA (all currently inoperative) will not be included in the new GENCOs, but rather will be held separately for later disposition (see point 6 below).

At the generating level, the TVA is far larger than technical or transactional reasons would suggest is sound. A careful division of these assets will enhance the sale value. But selling TVA dams immediately would be unwise. By law, they serve multiple functions, including flood control, navigation, and irrigation. If they were privatized, firms would be weighed down by these competing and highly politicized claims that remain. In parti-

cular, environmental concerns over the operations of the existing dam sites could embroil newly formed private electricity producers in complicated political intrigue and litigation. To avoid costly controversy, leasing is recommended.

A less-preferred treatment of hydro facilities would be for the government to continue to operate and sell power either in the spot or contract markets. Unfortunately, these sales could become the means of subsidizing some favored customer class by pricing below market rates. That practice today leads to chronic excess demand for the "cheap" federal power of the PMAs, as various consumer groups vie politically for favor.

A significant consequence to federal power sales is that environmental concerns are pushed aside. The Reagan Administration's 1989 budget proposes to privatize the Alaska Power Administration in 1989 and to study divesting the Southeastern, Southwestern, and Western Power Administrations, and the Bonneville Power Marketing Administration.[19] A significant reason for moving in this direction is that the PMAs do not regard environmental issues wisely; most seem to be motivated by the "cheap power" mission regardless of environmental consequences.[20] There is no reason to suppose that the TVA would behave differently.

In initially splitting TVA assets, the physical locations of plants should not be a determining factor in who gets what, because each new firm will become a power wholesaler whose marketing efforts should not be constrained geographically. In other words, each firm, beyond its existing contractual obligations, could seek consumers within or outside the TVA region. Outside sales, currently disallowed as part of the 1959 Revenue Bond Act, which formed a "demilitarized zone" in the South between the TVA and the private producers, should be encouraged.

The Southern States Energy Board (SSEB) proposed in 1987 to open this "invisible curtain" between the TVA and other power producers in the region. Possibly, the SSEB may have been laying the groundwork for the eventual purchase of some TVA assets by large investor-owned utilities, such as Virginia Power and Duke Power Company. Of course, TVA leadership has been strongly opposed to such plans.[21] Now, the SSEB's assistance in gaining openness of power exchange throughout the South should be sought.

2. <u>Ownership of the new power firms would be established through stock offerings.</u>
Incentives will be required to get TVA managers, employees, and consumers behind a privatization plan. Discounted shares would be reserved in the initial offering for the employees and users of the system. Employees also should be given considerable discretion and encouragement to make employment commitments with one of the new

producers prior to the share offering. In this way, an employee should know, early on, for whom he will be working and will be able to more closely link his actions as an employee to the financial success of his new firm and himself.

Although some of TVA assets are attractive to regional investor-owned utilities, these private power firms initially would be excluded from the share-tendering plan. This is proposed so that no questions of collusion or monopolization will be raised. Once the GENCOs are established, however, further private restructuring among firms would be feasible, following established antitrust guidelines.

As the British have learned in their privatization efforts, expected financial gain can entice recalcitrant opponents into becoming ardent supporters.[22] The approach must be used selectively, however. Most likely to be wooed through share offerings are TVA employees. There are few enough in this group that an individual's monetary gain could be an eye-opening incentive. Important too, stock-owning employees will be more inclined to act to enhance shareholder wealth within their new organizations.

Although a discounted stock offering to the TVA's consumers would yield little monetary value per individual and thus would be a weak incentive, the goodwill gesture of a small offering may be worthwhile. But consumers will require more assurance than just this that privatization will be a positive step.

3. Retail accounts are matched with the new GENCOs and each of the suppliers will have long-term obligations to reliably serve these consumers. The retail buyers, however, will be extended the right to recontract for power.
Existing TVA contracts with cooperatives, cities, and distributors would be assigned to the privatized GENCOs prior to the share offering, without any attempt to subregionalize each new producer. But with some advance notification, the retail consumer should be allowed to seek either spot power or long-term power contracts elsewhere. In a power market with multiple suppliers, this consumer recontracting option provides a potential means of lowering electric bills, and therefore will assist in winning local support for privatization.

To convince consumers that shopping for power will work, however, the transmission system in the region must be opened, as described under point 4 below. An additional reason for consumers to value entry into power markets is linked to expectations that federal funding of the TVA will become stingier. Clearly, limits to federal subsidization exist--the pork-barrel is only so deep, and a more-informed or less-forgiving Congress could further constrain

the TVA. As the problems of the TVA continue to grow with reduced subsidization, an inevitable escalation in prices would occur, making market alternatives shine more brightly for consumers.

4. Form a separate power transmission firm (TRANSCO) for the region.
This corporation would be explicitly mandated to allow broad user access. In order for new GENCOs to effectively market power in the future, linking them to consumers (largely industrial users and retail distribution systems) is critical. Conversely, the gains to consumers will be dependent upon openness to competitive suppliers. Forming a lucid picture of how this market will function is vital to gaining capital market and consumer support for privatization.

This new transmission grid would be open to all potential users, not just the TVA's spun-off GENCOs. In adjacent areas to the TVA, efforts should be made to begin opening up investor-owned transmission lines so that the new GENCOs can market power more widely. TVA privatization provides an excellent opportunity to observe a private power market's evolution under a modified common carrier transmission system approach. How well this would work is a topic widely debated in the industry today. What is proposed here with respect to TVA transmission lines has direct applicability to the deregulation of investor-owned electric utilities (and their transmission lines) across the United States.

The functions of the transmission company (TRANSCO) may quickly extend beyond loose-pooling activities to computerized exchanging of power among system users. Although some critics fear that the emergence of a large transmission organization would be the basis for institutionalizing monopoly power,[23] the grid should, quite the contrary, enhance competitive exchange. Two reasons can be offered. First, public policy should actively assure that open-access provisions of the law are maintained, suggesting a limited, continuing role for the Federal Energy Regulatory Commission (FERC) and antitrust laws. Second, and more significantly, broadening of the market (more power producers can reach more consumers) should have a major impact on shaping the effective power organizations of tomorrow.

The approach proposed here makes the transmission system essentially a common carrier, analogous to a canal that transports others' "loads," whereas now the transmission system is more like a railroad, owning both the rails and the freight.[24] The common carrier aspects of the electrical transmission system, however, differ from the canal because the reliability of the overall system is affected by loads placed anywhere on the grid. Continual careful planning among the system's users is essential. Clearly, the incentive to do this planning is strengthened if the major system users are also its owners (see point 5 below).

The opening of the transmission grids is widely opposed in the electric power industry, largely based on this assumption that erratic demands by independent users will overload the system and reduce reliability for all. Evidence is not compelling that such problems will be significant, especially if the motivation to cooperate is strong. Indeed, if the incentives exist to increase utilization of the transmission system, then alleged capacity constraints may miraculously vanish. As an example, San Diego Gas & Electric, urgently seeking to import power from neighboring utilities, greatly increased power flows over transmission lines that were supposedly at capacity.[25]

George Stigler has pointed out that the gains from vertically integrating a business are diminished by the broadening of the market for any level of activity.[26] This observation applies to the electric power industry. Under the proposed open-transmission service, a power producer or a consumer will find ownership of <u>specific</u> transmission assets (in order to obtain reliable interconnection to a particular consumer or producer) less valuable.

Indeed, the massive, complex task of coordinating activities throughout a power grid is regularly accomplished today in the nation's various power pools. And far more can be done using computer controls so that, for example, short-term markets in wholesale power exchange can be effectively established. As these develop further, they will probably be augmented by futures and options contracts for power, making market transactions even more effective.

In sum, a large-scale, minutely coordinated transmission system is feasible. The conclusion that it therefore must be carefully regulated to avoid debilitating chaos is nonsense. Quite the contrary, the ability to operate such rich and complex systems provides a major rationale for spinning these assets off from their traditional control by a single power producer. TVA privatization will provide an excellent opportunity to learn how decentralized transmission operation and planning will function.

5. <u>Ownership control of the new transmission grid (TRANSCO) would be based on use of the system.</u>
Initially, producers, distribution firms, and other large private buyers would be allowed to acquire joint ownership of the system. Later, system ownership would be extended to other users. Some ownership participation is a reasonable prerequisite for extensive use of the system because overcoming the transmission "bottleneck" problem can be advanced by providing incentives to the owners to act in a generally nonrestrictive fashion.

With widespread user ownership, monopolistic pricing of transmission service would be suboptimal for some owners and extremely difficult to practice. Note that both generators of power and buying organizations (distribution systems, cities, large industrial accounts, etc.) would hold ownership shares in TRANSCO. If a cartel agreement, based on some democratic voting rule, set a monopoly price, then users would be deprived of valuable transmission services. This loss could not be fully countered by shares in the transmission system's profits. Additionally, a cartel's monopoly pricing would be disadvantageous to growing, low-cost power generators, and they therefore would be unwilling to support such a pricing scheme.

The market power embodied in ownership of transmission services would not, under open-access provisions, be available to chase any entrants from the marketplace. TVA consumers must be convinced that such access to the TRANSCO is virtually guaranteed if they are to be won over to privatization. Thus, a reasonable legal requirement against "discriminatory" prohibition on access to the TRANSCO would help to convince skeptics that power markets will not devolve into collusive cartel arrangements.

6. <u>The nuclear power plants now owned by TVA would be placed in a separate government "holding pen".</u>
These plants then would be sold, with due care for safety concerns, to private power firms at the highest obtainable price. Establishing this residual government presence--an all-nuclear TVA--is an important practical component of an effective privatization. Thrusting TVA's inoperative nuclear plants upon the newly privatized GENCOs would depress their share values. It would also provide a too-convenient rationale for a continued federal presence in the power markets to assure that the nuclear program "succeeded." Thus, in order to quickly and cleanly move into privatized and deregulated power marketing in the region, the issue of disposing of nuclear assets should be set aside.

By contrast, a recent British proposal to privatize their national power industry calls for a largely nuclear government producer to compete with private power firms.[27] An unfortunate consequence may be to encourage the British government to subsidize the nuclear program or, worse yet, hobble the privatized producers by forcing them to charge prices high enough so that even the nuclear operations are profitable. The United States should avoid this ill-conceived approach.

Setting up a separate government organization for TVA's nuclear assets also may economize on technical, managerial, and regulatory efforts. Presumably, knowledge of nuclear plants is broadly transferrable, and nuclear safety issues can be dealt with comprehensively by the federal government. If any nuclear plants can

gain operating certification, they then would be sold to qualified private producers. The "residual TVA" would be prohibited from producing power and would receive federal appropriations only to cost-effectively upgrade nuclear units so they can be sold. On a cost-benefit basis, many of these plants, however, may be scrapped.

Nuclear power critics, a formidable political interest group, may find this all-nuclear TVA approach appealing because the entire nuclear "fleet" will be given greater visibility. Pulling the nuclear plants away from the rest of the privatization effort would be advantageous to consumers too. Currently, the unamortized value of canceled nuclear units is included in the base used by the TVA for calculating consumer prices. This cost-plus racheting of historical nuclear costs into prices would end under privatization. Explaining this carefully to consumers may be the key to gaining their favor.

7. Eliminate Price Regulation at the Wholesale Level.
The prices charged by the GENCOs, beyond the terms of the contracts transferred initially from the TVA, would be determined solely by market bargaining between suppliers and buyers. The rate-base (cost-plus) pricing formula, used by all state utility commissions, would not be applied. As a result, local distribution systems and industrial consumers would have an added responsibility to buy power economically. Placing this task in the buyers' hands is useful because the open transmission system will expand their opportunities to bargain and directly benefit from doing so wisely. Retail pricings, now generally established through the TVA's contracts with distributors, would become the responsibility of local retailing organizations. Clearly, these local organizations have great market power over individual consumers. Their effectiveness is an important issue, but because they presumably have represented consumers adequately for many years, local distribution ownership and control should not be an immediate issue for TVA privatization.

In sum, not replacing public enterprise with public utility regulation is an important component of TVA privatization. Expanded market exchange of power is the goal sought, not merely asset disposition. TVA privatization can be a useful experiment in electric power marketing for the nation only if we allow a private evolution of the market process. Much will be learned along the way. Rigidly structuring or regulating would emasculate the powerful discovery process that is essential to free exchange. Success (or problems) with the TVA will yield information regarding deregulation possibilities elsewhere.

IV. FINANCIAL ASSESSMENT OF TVA PRIVATIZATION

To gain insight into the financial consequences of this plan, the balance sheet of the TVA for its power program is analyzed.

Modifications are then made to the September 30, 1986 financial reports[28] in order to approximate conditions in a privatized environment. This "new world" includes: 1) GENCOs, the three or four new producers that will be spun-off from TVA's non-nuclear power program; 2) TRANSCO, the jointly-owned transmission grid, openly accessible to all users; and 3) government. The federal role is dual: as the transitional owner for nuclear assets and as the continuing owner of the dams.

From the balance sheet information, estimates of the net worth of the various entities under the privatization plan and their disposition values can be made. The balance sheet data are displayed in the Table. The expected net worth of the GENCOs plus TRANSCO is approximately $2.8 billion. The government's net worth is a negative $3.9 billion, a reflection of a substantial downward adjustment to the valuation of the TVA's nuclear program and its large long-term debt. Below is an estimate of what can be raised from privatization of the new GENCOs and TRANSCO, the estimated capitalized value of the hydropower sites, and the disposition value of the nuclear assets of TVA.

TVA Privatization

		Millions of Dollars Received
1. GENCO net worth:	$1,425	
(Less 20% discount)	285	
Net GENCO:		$1,140
2. Transmission system:		1,357
3. Capitalized value of hydro sites:		1,956
4. Likely disposition value of nuclear power plants:		7,876
TOTAL:		**$12,329**

The estimated immediate capitalized value of the non-nuclear components of TVA's power operations is $4,453 million. If hydro facilities remain in federal hands (as this paper has argued), sales of steam plants and transmission lines would net $2,497 million. The $7,876 million estimate for nuclear assets depends upon many soft assumptions and plenty of guesswork, and therefore is more uncertain than the predictions for other asset categories. The adjusted balance sheet (see Table) from which the above numbers are derived reflects numerous assumptions about who will bear liabilities and where adjustments to asset values should be made. These adjustments and assumptions are discussed below.

Asset Adjustments

1. All current assets and investment funds are placed with the GENCOs. Start-up costs for these operations will be the greatest, and to position the spun-off companies as attractive offerings, substantial liquidity on the initial balance sheet will be helpful.

TABLE

TVA POWER PROGRAM: BALANCE SHEET
September 30, 1986 (in $US millions)

			Revised		
Assets	Reported	Changes	GENCOS	TRANSCO	GOV'T.
Current Assets	$1,066	$	$1,066	$	$
Investment Funds	502		502		
Nonnuclear--Fixed:					
Hydro	956	$1,000			$1,956
Steam Plants	4,116	2,000	6,116		
Other Electric	2,979	1,500	1,725	2,754	
Construction	362	180	49	493	
Less Depreciation	(2,862)	(1,274)	(3,136)	(1,000)	
Total, Nonnuclear	5,551		4,754	2,247	1,956
Nuclear:					
Coomplete, nonop.	2,942	(735)			2,207
Less Depreciation	(570)	142			(428)
Plant in Progress	7,462	(3,731)			3,731
Plant Deferred	793	(635)			158
Capital Lease--Fuel	8				8
Unamortized Cost-- Canceled Plant	2,363	(1,890)			473
Total, Nuclear	15,085				7,715
Other Assets	602		441		161
TOTAL ASSETS	$22,806		$6,763	$2,247	$9,832

		Revised		
Liabilities	Reported	GENCOs	TRANSCO	GOV'T.
Current Liabilities	$ 1,648	$ 494	$ 83	$ 1,071
Long-Term Debt	16,102	4,830	805	10,467
Other Liabilities:				
Nuclear-Related	2,213			2,213
Other	16	14	2	
TOTAL LIABILITIES	19,979	5,338	890	13,751
NET WORTH	2,827	1,425	1,357	(3,919)
TOTAL LIABILITIES & NET WORTH	$22,806	$6,763	$2,247	$ 9,832

Source: 1986 Annual Report, Tennessee Valley Authority

2. The values of long-term assets not related to the TVA nuclear program are adjusted upward to better reflect open market conditions. The value of hydro sites (which will be retained by the government and leased to private buyers) is increased by $1 billion, reflecting a higher market-based present value of earning from the 6,000 megawatts of installed capacity. Similarly, the value of steam and other electricity-producing facilities and transmission is increased by 50 percent, premised on greater value of these GENCO assets in an open power market. These figures are considered conservative estimates of market value.

3. Nuclear plants, all nonoperating, are, by contrast, greatly overvalued in the TVA's balance sheet.[29] The nonoperating but completed plants consist of three units at Browns Ferry, Alabama, and two units at Sequoyah, Tennessee, with a total capacity of 5,898 megawatts. All have been taken off-line due to (safety related) regulatory problems. To return them to operating status may require over $1 billion and years of negotiations. These assets have been reduced by 25 percent of book value.

Other nuclear power plants in varying states of construction are more uncertain of gaining operating status, and their value has been halved from book. Another deferred plant (Belafonte 2) is idled and is unlikely to be completed; it is valued at 20 percent of book. Nuclear fuel, shown as a capital lease asset by the TVA (which uses a sale-leaseback arrangement with Seven States Energy, a subsidiary of Security Pacific Corporation) is reduced in value by 25 percent. This adjustment is made because the interest accumulating on this account will be largely uncollectible in a privatized, market environment.

Another alleged TVA nuclear asset is "unamortized costs of canceled nuclear plants". Eight plants were canceled from 1982 to 1984, and the cost of these is being written down by the TVA over an 11-year period. The unamortized balance, however, is recovered through higher consumer rates; therefore it is treated as a deferred asset by the TVA, much like the interest charges on nuclear fuels in the capital account. Under privatization, the opportunity to use a cost-plus system to "recover" these sunk costs will be removed. Nevertheless, 20 percent of this value remains in the amended balance sheet as a recognition that during a transition period to privatization some cost recovery may be permitted.

In sum, of the $15 billion in nuclear assets shown on the 1986 TVA balance sheet, after the above modifications, only $7.7 billion remains. This revision does not represent a cost of privatization (or any other restructuring plan), but merely a practical appraisal of the economic value of the TVA's nuclear resources today. These assets, quite simply, are grossly overvalued by the TVA. The only

way that the current TVA book valuation could be logically justified is if the TVA expects to "recover" sunk costs by increasing prices to purchasers. The privatization proposal will sever that connection to consumers' wallets, and therefore should be very attractive to users.

Liability Adjustments

1. The value of long-term and current liabilities are apportioned among the government, the spun-off GENCOs, and the new transmission firm on a 65, 30, and 5 percent basis respectively. These percentages reflect the approximate shares of TVA book value tied to each functional area. With these splits, the net worths of the private-sector firms should be solidly in the black. But the nuclear operations, even when partially balanced against the profitable hydro operations, push the government's total net worth far into the red. Most of TVA's liabilities are long-term debt owed to the Federal Financing Bank. Redistributing the liabilities in a different manner may alter the bottom line of any one of the newly created entities, but clearly will not alter the overall picture. It could also jeopardize the privatization effort by presenting unattractive financial structures for some or all of the GENCOs and the TRANSCO firm.

2. Although no attempt is made here to modify liabilities, some reductions may be feasible in moving the bulk of the employees and operations into the private sector. For example, the federal retirement program could possibly be restructured with significant savings. Other reductions due to cancellation of lease agreements for nuclear fuel are possible but, due to lack of good information, not attempted.

Opportunity Cost

The full gains from privatization are not completely gleaned from the above analysis. Essentially, two broad areas of gain from privatization can be anticipated. First, the newly privatized GENCOs and TRANSCO would be more highly valued in the marketplace than under the current organization. The reported book value of nonnuclear assets is $5,551 million; the revised balance sheet for these same assets (see Table) is $8,957 million. The difference of $3,406 million represents an estimate of the explicit costs of not privatizing the nonnuclear functions. This is probably a very conservative estimate.

Second, selling the nuclear plants may yield a net gain. The market-revised asset values for the nuclear assets, however, should not be compared to the current book values to obtain an opportunity cost estimate because the TVA's book values are unrealistic. Assume that the TVA simply continues to hold the nuclear plants without operating them (even if they "use" them as a basis for increasing consumer prices). The final disposition value of these

resources, in present value terms, will shrink over time. For example, if the TVA waits another ten years to dispose of the undepreciated nuclear assets, and assuming that these assets only lose half their current estimated market value of $7.8 billion in that time span, then discounting (at 15 percent) yields a present value of approximately $1 billion. The difference, $6.8 billion, is an estimate of the opportunity cost related to continuation of the nuclear program by the TVA rather than immediately beginning disposition.

The sum of the two cost categories above ($6.8 billion plus $3.4 billion) is $10.2 billion, which represents perhaps a rough benchmark of the lower bounds of gain that could be achieved directly from privatization. Missing from these calculations is an estimate of net gains in environmental improvement. Missing also is an estimate of the net benefits of moving more rapidly and effectively to open-power markets across the nation as a result of what is learned here. These elements are not easily quantified, but do represent important additional parts of the total social cost from not privatizing.

V. CONCLUSION

The key to effective privatization of the TVA will be the "conversion" of interest groups, some of whom are strongly attached to the TVA. This can be done with the following features. (1) By allowing employees to acquire ownership shares (at attrac-tive discounts) in the privatized power firms, vital internal TVA support will be gained. (2) By opening the transmission system to all users and allowing retail consumers (local distributors and industrial users) to recontract for power, consumers will see an option to continuing with the TVA. Consumers have a particularly strong motivatation to explore the options that privatization offers because it would eliminate their exposure to paying, through higher electricity rates, for the continuing nuclear fiascos of the TVA. (3) By pointing to the possibilities for improved environ-mental quality and stronger direct federal control of the nuclear plants through a privatization of the TVA, powerful environmental interest groups can be courted. (4) By selling this privatization also as a demonstration project of deregulated electric power markets, emerging procompetition forces elsewhere within the power industry may be swayed to support the concept.

Although the privatization of the TVA will be complex, firms in the private sector regularly accomplish more difficult structural feats. The TVA's metamorphosis is feasible and will be accelerated by the anticipation of key interest groups that gains will come from privatization. The large potential social benefits from dis-placing an inept public bureaucracy with market-oriented, private institutions will make the effort required well worthwhile.

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ABOUT THE AUTHOR

Douglas Houston is an economist in the School of Business at the University of Kansas. He is the author of a number of articles on electric utility deregulation, such as "Power to the People: Communities' Impact on Electric Utility Deregulation," in Policies Studies Journal, and "Deregulating Electric Utilities: A Market-Process Approach," in Cato Journal.

NOTES

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