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# Privatization of Military Utility Plants

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## PRIVATIZATION OF MILITARY UTILITY PLANTS

by

Stephen A. Vines

### ABSTRACT

Successful privatization matches the needs of government with the capabilities of private industry. It is one technique for acquiring facilities and services, including those to meet the utility system requirements of military installations. As other acquisition techniques become harder to execute under shrinking budgets--yet utility requirements continue--privatization offers the opportunity to increase infrastructure investment, strengthen the industrial base and improve government productivity. This paper recommends a systematic validation of all military utility deficiencies for privatization applications. All projects should be packaged to encourage the most industry interest. The result will be more cost effective public services in a long-term partnership with the private sector.

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## PRIVATIZATION OF MILITARY UTILITY PLANTS

by

Mr. Stephen A. Vines

### INTRODUCTION

Successful privatization is a convenient match between the needs of the public sector and the capabilities of the private sector. Privatization applications are broad: potentially any public service or asset. Its purpose is specific: to provide the service or asset more effectively (and particularly cheaper) than the public sector can provide. When it works well, privatization can reduce government costs. It can also better match the requirement with the need, reduce the role and size of government, and result in innovative solutions.<sup>1</sup>

I have chosen to concentrate on privatization techniques as applied to military utility plants. This application is a microcosm of similar national infrastructure problems. Typically, planners and programmers delay repairs, replacements and upgrades to utility systems. The systems are essential to productivity, or in the military sense, mission support. I will address the importance of defining the requirement. I will also address the ingredients of a successful privatization venture, emphasizing the need to satisfy both the supplier and consumer of the products. Finally, I will close with conclusions and recommendations aimed at smoothing the process that can result in a stronger industrial base and supportable military base.

### PRIVATIZATION AND THE INDUSTRIAL BASE

Privatization is one element in the interface between the industrial base and the government. It is a technique for using the resources of both. By best using these resources, both can benefit. Industry gets access to a large market of requirements-- in this case, military base infrastructure. The government gets access to private investment capital and, to make the project work, to lower costs for supporting the military structure.

The application of privatization techniques to military utility plants is a narrow application of industrial base issues. This area is unlike much of the defense industrial base where a few large firms dominate the market in such sectors as shipbuilding, aircraft production and tank production. Privatization in facilities construction is a more open market, with many service providers. There are few barriers to entry. Construction is not critically dependent on subcontractors and long leadtime

procurement. It isn't subject to significant foreign competition.

However, for privatization to work, it must successfully navigate through the problems typical in dealing with the defense industrial base: excessive regulatory controls, administrative burdens, environmental constraints, and issues of profitability and stability. Privatization then offers the opportunity to strengthen the principle of continuous competition in defense.

Privatization provides a mechanism for the industrial base to service one of its major customers, the Department of Defense. This relationship has three elements:

- It provides a defense acquisition alternative. Traditional acquisition methods provide defense services and assets through procurement, Operations and Maintenance, and Military Construction funding. Privatization can provide services and assets either through a financed contract or through an exchange of government assets (land, facilities, or a guaranteed market).

- It is a cooperative industry-government venture. When aimed at infrastructure development on Defense installations, it serves to encourage investment and boost growth.<sup>2</sup>

- It opens or broadens markets to industry in such areas as construction, operations, maintenance and energy conservation.

- Perhaps most important to the industrial base, it is a long-term relationship with DoD, viewed by industry as one of its stable public customers.

## **BACKGROUND**

### The Defense Requirement

In upcoming constrained budgetary climates, both the facilities acquisition (Military Construction) and Operations and Maintenance portions of the Department of Defense budget will continue to decline as they have since FY1986. In most years O&M and Military Construction funding reductions are greater than military personnel and total DoD budget cost reductions. From FY1986 to FY1993, O&M is reduced 13.8 percent compared to military personnel cost reductions of 8.7 percent in constant FY1992 dollars. During the same period, Military Construction is reduced 46.4 percent compared to a total budget reduction of 23.6 percent. The Department of Defense has already shown a pattern of disproportionately cutting infrastructure relative to the forces supported.

Requirements for new missions, replacement of aging assets, and major renovations will continue. Basic utilities and

infrastructure are more than just a minor element of a military mission. They are a readiness element. They are integral to housing, feeding, and training personnel and maintaining military equipment. Despite their major mission support role, the requirements for utilities perhaps become more serious for the following reasons:

- The facilities planning and programming system typically overlooks infrastructure needs. Underground lines are easy to ignore until they fail. The planning system also gives infrastructure replacement a lower priority than other classes of facilities (barracks, messhalls, aircraft maintenance hangars or combat equipment maintenance).

- Many utility systems date back to the first construction of the installation. Many use outdated technology and inefficient equipment no longer produced. Base maintenance personnel incrementally add to or perform marginal repairs to systems when whole system repair or replacement is warranted. This compounds the government cost of replacement and maintenance. It also works against future arrangements for a non-government entity to assume liability for operating and maintaining the systems.

- New, more stringent environmental regulations threaten to close down sewage and water treatment plants. Tighter air quality standards make major central heating plant renovations too expensive.

- Projects to replace utility plants are high cost, subject to Service, OSD and Congressional scrutiny. Many do not survive the priority process because of their high cost or sensitivity in front of different committees. Similar to weapon acquisition programs, individual facility projects must survive the process through budget, authorization, and appropriations committees. The cycle of one-year appropriations does not allow for long-term or phased facilities acquisition.

In short, utility system deficiencies continue to increase just as the techniques for satisfying the deficiencies become harder to execute. Infrastructure services deteriorate and system costs increase.

### Privatization Applications

The idea that government should not provide a product or a service if the private sector can provide it has its roots in the Eisenhower Administration. Privatization has evolved into a way to rely more on the private sector to satisfy public needs and rely less on the role of government.<sup>3</sup> It has also offered an opportunity for the government to move away from government regulations that can limit entrepreneurial advantage.

Continually since the start of programmed privatization, the government has refined its role, primarily trying to make it more efficient. This has resulted in more program controls and less ease in using privatization. Enabling legislation has become more restrictive. Several tests weed out infeasible projects. Because of uncertain procedures, government program managers are reluctant to risk the time and development costs when they compare privatization to the known risks of traditional acquisition techniques.

Privatization's applications remain diverse and successes are real: low income housing, housing finance, Federal loan programs, the Postal Service, Amtrak, the Naval Petroleum Reserve, and A-76 or contracted-out services. In some cases it took the form of a complete government divestiture. In other cases the government formed a cooperative relationship with the private sector.<sup>4</sup>

Appropriate use of privatization lies in the distinction between producing and providing the asset or service. The A-76 program provides an example of an early application of provided private services. From 1980 to 1982 the DoD awarded 253 service contracts. Private companies competitively bid 22 percent less than government provided services. Further, competition with private contractors resulted in an 18 percent savings for in-house services by trimming inefficiencies and excess manpower.<sup>5</sup> Despite contract corrections associated with the A-76 program, savings have remained in such services as lawn maintenance, recycling, lighting maintenance, fire fighting and refuse collection. In short, the government doesn't have to produce the service to provide the service.

In the case of utilities, government acquisition often subtly overlooks this basic distinction. The government must provide utility services. It does not necessarily need to produce utility plants. The requirement is for heat, not a central heating plant; for potable water, not a water treatment plant. Privatization can competitively provide these types of services.

### The Road Ahead

Despite budget reductions, utility requirements will continue. Even where force reductions and realignments reduce base loading, installations still need utilities. In addition, installations must emphasize preventive maintenance, and use artificial intelligence and other diagnostic techniques to avoid system degradation and high capital requirements.

Any force realignments that result in base loading increases have the potential to bring overaged and environmentally tenuous utility plants over their capacities.

Because of sensitivities by both the government and industry concerning base closures, the government will not award new long-term contracts for privatization without either (1) strong signs of a long-term viable base mission, or (2) guarantees from the contractor that the government is not liable for any future profit or contract termination costs if the base closes. The Office of the Secretary of Defense must approve all privatization contracts, coordinating with base closure candidate lists. DoD learned this lesson from contracts such as the Chanute Air Force Base cogeneration plant. The government ended the contract early in construction (at a cost of \$1 million to the government) because Chanute was slated for closure.

With budget deficits continuing, the Office of Management and Budget will emphasize avoiding the appearance of mortgaging construction costs by using Operations and Maintenance funding. Economic analyses will be critical to show the true life cycle costs of privatization projects.

Privatization will serve a growing need to increase the role of maintenance in improving performance and reducing the risk of major breakdowns. Long-term operations and maintenance programs will be as important as initial construction for privatization uses.<sup>6</sup>

Department of Defense installation utility systems will need to incorporate the benefits of technology that have passed them by over the last 30 years. Advanced system controls, higher thermal efficiency and advanced pollution control systems are some of the technology improvements available to base utility operations.<sup>7</sup>

Government/industry partnerships will continue to exhibit cyclical characteristics. Opportunities for projects will rapidly appear and dissolve based on industry's perception of the military structure as a stable investment opportunity. Economic cycles (interest rates, expected rate of return versus risk) will also make privatization a dynamic process.

## **MAKING PRIVATIZATION WORK**

### Elements of Success

A successful privatization project is a timely and sometimes coincidental blending of the government's requirement with industry's capabilities and methods of doing business. Each brings its own prerequisites for a successful project.

The government's first and primary concern should be a definable requirement. Utility services are measurable. For utility projects, this means a long-term need for services, specified in industry terms, and sized to satisfy the

installation's existing and planned mission. Industry will only provide what the government asks for.<sup>8</sup>

The government should define the requirements as performance specifications. Many DoD projects, no matter the funding source, have shown that fewer specifics on procedures and technology will result in lower project costs. Contracts will still need certain constraints. For example, coal may be dropped as the fuel source because heating plant exhaust stack heights may be too high for an air facility. Or fuel delivery requirements may disrupt other installation functions. Usually though, fewer government restrictions will draw more developers, allow them to use time-tested or state-of-the-art technology, and result in lower costs.

All elements of the government must have a clear understanding of the process. Individual installations are in fact agreeing to a long-term relationship with a private firm. This relationship is the alternative to traditional one-time acquisition mechanisms that may no longer be available. For example, installations may, over time, come to resent O&M outlays from their budget to, in effect, pay a capital financing charge, forgetting that acquisition of a new facility was not possible by any other means. That is now the case at Fort Drum, New York where the base quickly needed major new utility projects but without Military Construction support. The installation now believes their \$12 to 16 million annual costs for water, sewage treatment and heating are excessive. The process did not stop with the previous Commanding General. It continues through the long life of the contract.

There must be an opportunity for profit and, coincidentally, an adequate number of suppliers. Normally, there are ample private firms available, accustomed to dealing with public utility districts, cooperatives, or industrial businesses. Anticipation of profits will draw firms to viable projects just as inordinate liabilities will scare them away.<sup>9</sup> As an example, a private firm under contract with the local utility was ready to take over the electric distribution lines at the Naval Recruiting Station, Great Lakes, Illinois. The firm initially would have metered all buildings and provided electric service. Cost to the individual customers would have been lower than the rates charged by the Navy Public Works Center operator of the utility system. Upon more detailed inspections, though, the liabilities of the antiquated utility lines erased any profit potential for the private firm. The firm backed out of the contract, leaving the government with the eventual capital cost liability.

Consistently successful projects have good sponsorship. A sponsor must shepherd each project through the many steps in the approval process leading to awarding a privatization project. Service Headquarters support, OSD and Congressional interest are essential.

Most privatization projects must take advantage of windows of opportunity. Financial markets quickly change. The vagaries of Congress alter the approval process or enabling legislation expires. Installations' perceptions change about the chances of other acquisition means or the risks of completing a long-term private venture contract.

### The Economics of Privatization

A privatization project is not viable if it cannot meet the economic needs of both the government and the contractor. First from the government's perspective, the life cycle costs of a contractor's proposal must be at least 10 percent less than those of the government alternatives. This 10 percent allows for the government's upfront feasibility studies, cost analyses and contract administration. The government alternatives are to maintain status quo or to construct a new project using Military Construction funding. The costs for these alternatives are easily identifiable. Operations and maintenance costs are routinely tracked using such factors as costs of labor and market fuel costs. The costs of major renovation projects and new construction are based on architect-engineer designs. Similar projects from a data base of DoD construction also help identify expected government costs.

Second, viewing the economics from the perspective of the private sector, a proforma statement establishes if the contractor may realize a profit from the project. If profit potential is uncertain, there will be limited response to a solicitation and, if awarded, the government could expect the contractor's performance to be poor. Cost performance models used in preparing the proforma statement help estimate or assume values for such elements as: working capital needed based on similar private sector construction, short- and long-term financing requirements, the range of interest rates, discount rates, operations and maintenance costs, depreciation, tax liabilities, insurance, overhead costs, and revenue potential.<sup>10</sup>

The accuracy of cost estimates is most dependent on current economic conditions. Interest rates will fluctuate over the course of a contract solicitation. The 1986 tax laws dramatically changed the rate at which contractors depreciate taxes. However, the proforma statement gives an accurate and early enough analysis of a project's expected economic performance to decide if the project should be advertised. If market conditions change or contractor costs are underestimated, the government can cancel the bid process and proceed with traditional government acquisition planning.

Private firms have several economic and competitive advantages that allow them to build and operate utility systems cheaper than the government. The profit motive is a powerful tool in all phases

of construction, operations and maintenance. Procurement regulations and federal intervention in construction execution do not entangle private firms. They can take advantage of economies of scale by spreading developmental costs over several utility plants. They are more adept at technical innovation and better able to design exactly to the requirement. The result, for example, typically is a 20 to 40 percent savings over government costs in constructing wastewater treatment plants.<sup>11</sup> In other cases, a developer can take advantage of markets the government is not interested in. Using the baseline steam requirement of a military installation, developers can build small cogeneration plants, generating most of their profits from electric power sales to the local electric grid.

Many elements affect a project's economic viability. Projects with high capital costs, such as utility plants, need long-term contracts of up to 30 years. For energy service contracts, economic comparisons must incorporate minimum power usage and the costs of standby power to protect the government from single source service disruptions. Fuel availability, projected operations and maintenance, environmental issues, and contract termination procedures have additional cost implications.<sup>12</sup>

Government and industry once termed privatization projects "Third Party Financed" projects because the critical "third party" is the financial organization. A contractor's financial backing is the most important element in executing a successful privatization contract. A prime example is the Army's Redstone Arsenal Wastewater Treatment Plant. Environmental pressures provided the impetus to accelerate the project. The government awarded the project to the contractor, but after 15 months construction has yet to start because of difficulties between the contractor and his financiers. The contractor's ability to respond to a solicitation and compete for a contract is largely dependent on his ability to show the needed financial backing.

The economics of a privatization project are the cornerstones of the entire process. A project's economics determine the initial feasibility, the support it will receive through the approval process, the expected interest by industry in the project, and the potential for satisfactory contractor performance.

### What's in it for Government?

Every utility system deficiency on Department of Defense installations is a candidate for evaluation as a privatization project. First, privatization allows the government an alternative investment technique to satisfy readiness requirements. Military Construction may only be available for critical projects such as for environmental compliance. Privatization may be the only other way to accomplish programmed capital investment.

Second, by contracting with private firms to operate and maintain utility plants, the government can reduce manpower or free it to accomplish other installation maintenance functions. Most civilian employees on DoD installations are employed in base maintenance functions.

Third, by the requirements of economic analyses, any privatization project must cost no more than 90 percent of the government construction estimate. Further savings are achievable. From an analysis of 24 private and 88 public water supply systems in the United States, the public systems cost about one third more than the private systems. The higher government costs were attributable to lower labor productivity and underutilized capital.<sup>13</sup>

Fourth, privatization can address persistent environmental deficiencies in outdated sewage treatment plants or close-to-capacity solid waste disposal facilities. It also offers the possibility of making the contractor responsible for following environmental standards. The motive again is profit. Fines and closures due to non-compliance are painful to a profit-making venture. State regulatory agencies bring administrative actions against the Federal government.<sup>14</sup>

Finally, privatization offers new opportunities for energy conservation funding. Legislation allows contractors and the Government to split the monetary savings from energy conservation projects. The contractor provides the capital. Typically, the contractor collects 70 to 90 percent of the savings realized from the conservation project. The savings allow the contractor to amortize the cost of capital investments. The Government realizes both the remaining monetary savings and credit toward OSD-mandated energy savings goals. Recent regulation changes have allowed the installations to keep a portion of the savings (instead of it all returning to the Treasury). Retained savings at the installation level can be used for additional energy conservation projects and morale, welfare and recreation projects...projects that will continue to be more difficult to fund from traditional sources.

DoD installations are already testing the benefits of privatization:

(1) The Naval Ordnance Center, Indian Head, Maryland is dealing directly with the local utility (Potomac Electric Power Company) to contract for a Shared Energy Savings lighting project. While there are many contractors able to bid on lighting projects, the Center can deal with the utility as the sole provider of the service as long as the utility competitively selects private contractors to execute the project. This saves solicitation costs and avoids the need for the government to rate many proposals. The result to the Center will be new capital lighting, reduced energy costs and energy conservation.

(2) The Naval Ordnance Laboratory, Crane, Indiana is considering an unsolicited proposal from a contractor partnership for a new on-base cogeneration plant. The installation will receive steam for the amortized cost of new steam lines. They will also receive electricity at below their current costs. The contractor will sell the remaining generated electricity into the local power grid to generate the contractor's profit.

(3) Andrews Air Force Base in Maryland is pursuing a similar cogeneration project with a contractor. The installation steam requirement creates a cogenerated capacity of 200 megawatts over the installation's electric power requirement. Andrews AFB trades access to a buildable utility plant site for electricity and steam at reduced costs. The contractor generates his profits from excess electric power sales to the local utility.

(4) The Army Proving Ground, Aberdeen, Maryland is pursuing a proposal with the surrounding Hartford County for a municipal waste disposal facility. In exchange for building a disposal facility on installation property, the base receives steam for the price of fuel (a 30 percent reduction) and free waste disposal. The contractor sells waste disposal services to the local municipalities to generate his profit.

#### What's in it for Industry?

Industry is, of course, looking for expanded markets. The utility industry is forced to hurdle an increasing number of obstacles--such as environmental constraints or public opposition--that limit capital expansion options and raise the cost of doing business. As a result, industry looks for creative hybrid solutions. Access to government markets and property provides opportunities for those solutions.

Electric power generation and sales have the best potential for large privatization projects. By 1992, the 24 public utility companies with the most privatization experience will have bought over 11,000 megawatts of capacity through third party arrangements (built and operated by private contractors). The utility companies themselves expect these types of purchases to quadruple over the next 10 years. Much of the change in power acquisition strategy comes from the high cost of new power plant construction. Siting constraints ("not in my backyard"), environmental concerns and lower stock prices also reduce the chances for new plant construction. New power generation is more a planning millstone than a financial opportunity. Accordingly, a major corporate emphasis is on cogeneration, conservation and load management.<sup>15</sup>

Public utility companies and private industry see DoD installations as industrial users with developable markets and assets. Demand side management programs and energy conservation

techniques at large DoD installations allow the power companies to service more customers without building new generating capacity. Installation heating and process steam requirements are a market for cogeneration plant construction and operations. Installations often can make available buildable acreage, compatible with other industrial land uses. To developers these sites are without the development cost and public opposition normally expected with new utility plant construction. In addition, unencumbered sites dramatically change the construction timeline. Developers can reduce the normal 8-10 year cycle for building a power generating plant to four years with a smaller natural gas-fired plant located on DoD property.

Installation sewage and water treatment requirements offer potential for service industry projects. Industry is interested when economic cycles slow construction business, when industry senses a stable long-term need for services, and when there is a steady flow of similar projects. Industry becomes more interested, particularly in the financial markets, when they can reduce their overhead. They can do this by packaging multiple site projects or by a series of projects using similar Requests for Proposals, contracting techniques and legislative authority.

#### What Privatization Can't Do

Privatization is not the solution to all the government's utilities deficiencies. While in theory it provides a cheaper alternative, with the profit motive being the incentive, many obstacles work against its widespread use.

Privatization is not a simple contracting procedure. The contracting process for privatization projects is complex, often unique, and embroiled with legal and legislative issues. Most privatization projects have no model to follow. Each project requires steps beyond the normal acquisition process. These include analyzing different acquisition alternatives, determining market demand, and preparing economic analyses and business plans.<sup>16</sup>

Privatization is not a consensus solution to facilities and services deficiencies. The applications to utility plants don't reduce the federal debt. They are not proposals to sell government assets with the proceeds going to the General Treasury. They are not a source of revenue for financing other projects as were the federal system of hydroelectric power plants.<sup>17</sup> Legislation is specific to privatization applications, yet still politically volatile. For example, Military Construction subcommittees in Congress support privatization--it's an alternative to using Military Construction funding--while Operations and Maintenance subcommittees resist privatization because it commits long-term O&M funds and reduces their out-year discretionary authority.

The major obstacle to blanket use of long-term privatization contracts is the Administration's policy on scoring. Scoring refers to identifying agency budget authority in the first year of the contract, covering the government obligation for the entire term of the contract. Scoring an agency's budget authority--which could include finance charges as well as capital costs--has the same or larger impact of a one-time capital expenditure from the budget. The purpose of scoring is to avoid: (1) projects that understate the true cost of capital acquisition by the appearance of lower near-term outlays, (2) projects that are financed at higher than Treasury borrowing, the cost of "financing" Military Construction, (3) projects that result in ownership of buildings while circumventing the congressional line item facility acquisition process, and (4) funding low priority projects that aren't funded through Military Construction. The privatization project process clearly is not a backdoor shortcut technique. The sensitivities of the Administration and Congress require each project to be strongly economically justifiable, to be visible at the Congressional subcommittee level, and to be designed to satisfy high priority agency requirements.

Because of its complexity, privatization is not a quick solution. The upfront project developmental time and expenses can be long leadtime government commitments. In fact, privatization techniques work against the short timeframes sometimes demanded by regulatory problems, such as environmental compliance. DoD has been successful at satisfying environmental compliance requirements by negotiating a project plan with the regulatory agencies to improve or replace individual plants. A negotiated plan delays complete shutdowns of sewage and water treatment plants and avoids litigation. However, regulatory agencies aren't always patient enough to allow the government to experiment with contracting techniques for short-term deficiencies. Privatization will be appropriate when long-term planning is complete.

Finally, privatization involves more risk in an era of military restructuring and base closures. In fact, until the future defense structure becomes clearer over the next three to four years, the Army will not initiate new privatization contracts.

## **CONCLUSIONS**

Privatization offers the opportunity to strengthen the government-industry relationship in a way that satisfies both government deficiencies and the need for business growth. It encourages investment and improves government productivity.

As shown by the number of unsolicited proposals it receives, DoD has assets and utility markets of interest to industry. The aging infrastructure of DoD installations is a prime market for new technology and for the energy conservation service industry.

DoD's past successes in using privatization have depended on strong economic rationales and an ability to think like industry by reducing constraints to the contracting process. However, the acquisition process still struggles against institutional barriers such as one-year appropriations that stifle long-term acquisition techniques.

The following recommendations are aimed at improving the government-industry interface by increasing the opportunity for privatization successes:

(1) Systematically validate and consider all utility deficiencies for privatization applications. Immediately market those projects with the highest priority and best economic conditions for privatization.

(2) Pay special attention to candidate projects subject to external agency scheduling influences, such as state environmental regulatory agencies.

(3) Package projects as services, not as acquisition of facilities to avoid the appearance of lease-purchase arrangements and subsequent budget scoring dangers.

(4) Standardize and put in place OSD-level policy and procedures to take advantage of windows of opportunity presented by economic conditions or industry interest.

(5) Make project bidding procedures and requirements consistent to reduce contractor overhead in preparing bids.

(6) Package projects into large contracts, even when crossing Service lines, to increase developer and financial institution interest.

(7) Expand application of privatization techniques into utility system preventive and programmed maintenance applications.

(8) Consider dedicating Operations and Maintenance money at the OSD level for development costs and annual long-term project funding.

Fundamentally, privatization leads to more cost effective public services. From a free market perspective, it reduces the role of government and lets the market respond to performance and cost requirements. Finally, a continuing, cooperative privatization relationship can result in a more supportable military structure and a stronger industrial base.

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