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**DEVELOPMENT OF A PRIVATIZATION  
STRATEGY FOR THE ARMENIAN  
POWER SECTOR**

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## CHAPTER 1

### INTRODUCTION

#### 1.1 PROJECT OVERVIEW

This report has been prepared with the support of the U.S. Agency for International Development as part of the energy sector privatization and restructuring technical assistance provided under contract CCN-0002-Q-03-3152-00. This privatization strategy document was prepared to assist the Government of Armenia, the Ministry of Energy and the Ministry of Privatization in their deliberations regarding the role of the private sector and approach towards privatization in the electric power sector of the Republic.<sup>1</sup>

Essentially, this report has two main objectives. First, it provides information on privatization and investment attraction in the energy sector to help inform policymakers in the Republic regarding the unique challenges to privatization, the types of approaches that have been successfully implemented elsewhere, the relationship between the government's privatization objectives and the preferred method for achieving the objectives, and the kind of issues and factors that should be considered in the development of Armenia's power sector privatization and investment attraction strategy.<sup>2</sup> Specifically, the report stresses the type of investor considerations that should be taken into account in order to increase both the likelihood and size of investment that takes place at reasonable terms. Second, the report provides the Hagler Bailly project team's initial recommendations as to the preferred privatization strategy for Armenia. In short, the project team recommends that the government and its ministries accelerate privatization efforts in the electric power sector while simultaneously pursuing a strategic investor approach towards privatization.

#### 1.2 RATIONALE FOR PRIVATIZATION

At its core, privatization is about the proper alignment of incentives. At present, the rewards for continued reform and improvement in the energy sector in Armenia do not clearly and quickly benefit the party in the position best able to make such changes. There simply are not enough

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<sup>1</sup> The report is not written as a guide for potential investors. Rather, it is intended to assist the Armenian government develop its power sector privatization policy.

<sup>2</sup> The report does not discuss the design of the Armenian electricity market. A description of the project team's conception of the power sector market structure is provided in the April, 1996 "Power Sector Restructuring Recommendations for Reform" report.

proper incentives at present in the management and operation of the sector to encourage efficiency and restore the sector's financial viability. Continued restructuring, including the separation of transmission from dispatch and the completion of the distribution consolidation process are extremely important and should continue unabated; however, ultimately, these actions are not enough. There should be a significant push to increase the role of the private sector in the ownership, management and operation of the electric power sector to help restore financial viability. Assuming that the privatization is properly structured, it will provide greater motivation among management and staff to pursue sound business decisions and refocus the role of the state on matters such as energy policy development, environmental compliance and regulation of natural monopolies.

For Armenia, the potential benefits of power sector privatization include:

- ▶ improve collections and the financial viability of the electric power sector, as well as the financial condition of suppliers (especially, the natural gas industry);
- ▶ halt the accumulation of debt;
- ▶ attract foreign investment to a sector in dire need of rehabilitation, the costs of which cannot be met from the state budget, from the international donor community nor from the sector itself;
- ▶ improve the reliability of electric service for consumers;
- ▶ help modernize the power sector through the attraction of additional management and technological expertise;
- ▶ promote domestic Armenian capital investment in the Armenian energy sector;
- ▶ provide long-term investment vehicles for social security; and importantly,
- ▶ build citizen confidence in the government and economy.

### **1.3 ORGANIZATION OF THE REPORT**

This report is organized into a series of chapters. In Chapter 2, a review of privatization objectives and the methods available that help to achieve those objectives is provided. Comparisons with other countries are provided in order to clarify what may or may not be readily achievable in Armenia.

Chapter 3 describes the information investors prefer to see to help them evaluate investment opportunities in the electric sector and the format for presentation of such information. A table of information categories and an assessment of how easy or difficult it is to obtain this information in Armenia is provided. The chapter emphasizes the investor's perspective and stresses the perceived value in information presentation, clarity, and credibility.

Valuation and risk analysis are discussed in Chapter 4. This chapter draws the distinction between the type of valuation methods commonly employed by investors and the method used historically in Armenia, which does not fit nor correspond to the needs of the investment community.

Chapter 5 reviews each stakeholder in the privatization process and comments on the role of each. The privatization process, when involving major energy sector assets, is complicated and time-consuming and involves numerous parties. In some cases, the roles of a stakeholder are obvious; however in other cases, the importance of a particular stakeholder may not be fully recognized. This chapter is designed to show the role these various parties can play to increase the likelihood of a successful privatization process.

In Chapter 6, the political and economic climate found in Armenia is profiled vis-a-vis other countries. It is often a country assessment that is the first task undertaken by investors when considering whether to invest in a given country. This chapter examines the kind of factors likely to be taken into account as part of the country assessment. It is intended to place Armenia in perspective with other countries, analyzing its relative position as a destination for foreign direct investment.

Based on the information and analyses presented in earlier chapters, Chapter 7 provides recommendations and implementation steps for power sector privatization in Armenia given the nation's situation and the options available. The chapter also shows how each recommendation will address one or more of the problems found at present in the Armenian power sector. The chapter concludes with remarks about the role of privatization and the need for a clear consensus in Armenia.

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## CHAPTER 2

### PRIVATIZATION OBJECTIVES AND METHODS

#### 2.1 INTRODUCTION

This chapter discusses the rationale for privatization, prerequisites to privatization, and describes privatization methods and examples of their use.

Privatization can be defined as a transfer of either ownership or management from government to a private body. Support for privatization is based on a collection of assumptions, beliefs, and empirical evidence, including more generally:

- ▶ The private sector is more efficient than the public sector at making business decisions;
- ▶ Most state-owned enterprises would be made more efficient and effective if exposed to the rigors of the private marketplace;
- ▶ Privatization expands consumer choice and empowers consumers;
- ▶ The private market rather than government is a better allocator (fairer, more efficient) of economic resources, property and wealth; and,
- ▶ Social policies (e.g., employment, provision of essential services) should be funded directly by government as opposed to having government require state-enterprises to fund social policies.

The movement for privatization is a means to push down economic decision-making toward a free choice between the consumer and business. Within the context of privatization, the state assumes a more limited role regulating monopolistic practices, while at the same time ensuring environmental protection and responding to social concerns.

#### 2.2 REASONS TO PRIVATIZE

Privatization of the electric power sector reduces state investment requirements in the sector and provides private capital for system rehabilitation. Armenia's electric power sector is in dire need of capital investment for repair of generation, transmission, and distribution facilities and for modernization of sector infrastructure. Lahmeyer International estimates capital requirements for

the Armenian power sector of US\$ 1.4 billion through the year 2010.<sup>1</sup> According to a report by EnergyInvest PIO and the Project Preparation Team, costs to rehabilitate and modernize the Armenian transmission and distribution sectors total more than US\$ 309 million.<sup>2</sup> It is anticipated that privatization will help attract capital to the sector, result in improved sector performance and efficiency, increase private investment, and importantly, boost revenue collection.

The first step required for successful privatization is for the government to define its privatization objectives. In the case of the Armenian power sector, these objectives may include attracting private sector capital for system rehabilitation, reducing the government's investment requirements in the power sector, improving system performance, reliability, power supply, and raising the level of collections. The government must also select a method of privatization, determine what percentage of the enterprise will be offered for privatization, and decide whether the sale of enterprises will be limited to domestic investors or whether foreign investors will also be allowed to participate. The following are some of the factors that have encouraged governments to consider power sector privatization:

- ▶ **Reduce State Investment Requirements.** The power sector is highly capital intensive. Transferring ownership and control of state-owned companies to the private sector shifts the responsibility for investment from the state to the private sector.
- ▶ **Reduce Subsidies/Bad Debt.** Private ownership and the profit incentive will force out uneconomic subsidies and debt associated with customers who cannot afford to pay for power. While privatization will not necessarily be able to make the power sector whole for past debt, it will help to reduce future debt by offering strong incentives to eliminate service to non-paying customers. If the government determines that subsidies to certain customers are warranted, it should be obliged to fund those subsidies directly rather than force those costs upon the power sector.
- ▶ **Reduce Public Sector Payroll.** Power sector privatization typically results in reduced employment in power sector enterprises, which tend to be (grossly) overstaffed under state ownership. Power sector employment reduction to rational levels may result in short term problems for displaced employees, but will have

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<sup>1</sup> Lahmeyer International, 1996 Update Least Cost Power Investment Program, Armenia, Main Report, June, 1996, p. 10-1, Table 10.1.

<sup>2</sup> EnergyInvest PIO and Project Preparation Team, Rehabilitation and Restructuring Plan for the Armenian Electric System, Volume A, October, 1996, Page 40, Exhibit 4-2.

the long term benefit of improving the sector's financial health. Further, unemployment effects may be mitigated by severance packages, retraining, moving allowances, and other government-provided services.

- ▶ **Improve Sector Efficiency and Performance.** Inefficiency can take the form of inadequate use of natural resources or needlessly overpaying for goods or services to the benefit of certain individuals. Privatization is a means of aligning the incentives for efficiency and competition so as to provide lower cost and improved services.<sup>3</sup>
- ▶ **Promote Economic Growth.** Electricity is a key input to economic growth and a reliable, efficient power sector provides a healthy environment to foster growth. Further, the government's reduced investment requirements should free up funds to support other economic stimulus programs or to reduce government debt.
- ▶ **Raise Cash for Government.** Privatization can raise cash proceeds for the selling government to the extent that the asset being sold has a fair market value greater than its indebtedness. In order to raise cash, a legislative and regulatory framework conducive to foreign investment must be created for the power sector. Failure to create such an environment will increase investment risk and will likely lower the amount investors will be willing to pay for power sector enterprises or will increase the risk premium associated with such investments (i.e., investors will demand a higher return on their investment). Naturally, the higher the level of tariffs, the higher will be the level of interest in investing in private power plants. For example, in Guangdong Province, China industrial electric rates can be as high as US\$ 0.12 per kWh, and in Turkey, industrial rates are US\$ 0.08 per kWh. These two countries have consistently been cited as top markets for independent power.
- ▶ **Attract Private Investment in the Sector.** In addition to decreasing the government's investment burden, private investment in the power sector will have the effect of reducing investors' perception of Armenia as a highly risky investment climate. Establishing a track record with private investment is one of the most effective ways to attract additional investment. The power sector is seen by many investors as a low-risk proposition due to regulation and the essential nature of electricity to a country's economy. Investment in this sector may serve as an example to investors considering other sectors, such as retail activities, tourism, and export-related industries such as food products.

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<sup>3</sup> The World Bank has documented efficiency gains in numerous countries resulting from privatization. See Privatization: Lessons of Experience, World Bank, 1994.

- ▶ **Expand Citizen Involvement in the Economy.** Certain types of privatization such as voucher privatization or employee buyout directly result in increased citizen involvement in the economy.

### 2.3 CONSTRAINTS AND PREREQUISITES

The success of a privatization program is often contingent on both the existence and absence of key institutional factors. Failure to create an environment conducive to privatization will diminish the quality of potential investors, reduce their bid prices, and increase the risk and return associated with investment.

The first prerequisite to privatization is the existence of an appropriate legal and regulatory framework. The lack of an adequate legal and regulatory framework for the energy sector serves as a constraint to privatization by increasing the risk associated with investment in the power sector. In order to be able to conduct an economic analysis on whether to invest in the power sector, a private investor requires assurances that electricity prices will be sufficient to allow a return on the investment commensurate with the investment risk.

The absence, or weakness, of an independent regulatory body responsible for setting tariffs serves as a significant barrier to power sector privatization. Electricity tariffs set below the cost of providing service combined with a lack of transparent regulation will deter private sector interest in the power sector.

Addressing the issue of power sector debt is another prerequisite to privatization. Often the power sector has a very limited cash flow resulting from a low rate of collections and tariffs that do not cover costs. As a result of these factors, electric generators have been unable to pay their debts for fuel and sometimes even for labor. Power sector debt is often addressed in two ways. First, the government may implement reform measures (tariff reform, power curtailment in the case of non-payment) aimed at debt reduction. This generally helps to reduce future debt. Existing debt is either written off or factored into the investor's valuation analysis. In many cases, including Kazakhstan and Hungary, the investor agrees to pay off the enterprise's debt as part of the terms of the privatization transaction.<sup>4</sup> This has generally been the approach used in Armenia to date.

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<sup>4</sup> In many countries, the majority of power sector enterprises face a serious debt problem. For example, in Russia, the electric company UES has built up a significant debt to Gazprom. As a result, in the recent auction of a stake in UES, Gazprom and a group of banks were able to secure an 8.5 percent stake in UES.

Another important prerequisite for privatization concerns limiting the role of government in the commercial operation of the sector. The government's role is usually limited to development and implementation of national energy policy, including control over non-commercial areas. Investors like to see that the government does not have any involvement in the day-to-day management and operation of the power sector. Investors, however, realize that limiting government intervention into the power sector is a gradual process and that the privatization process helps to facilitate this change.

The following section provides a brief review of various risk factors that influence investors decision making and compares how investors perceive these risks in global power markets.

### **2.3.1 Economic**

A country's economic situation affects the type of investor willing to consider investment. Highly risky countries tend to attract more speculative investors whereas investment grade countries may attract a wider range of investors. A country's economic outlook is considered very heavily in an investor's decision criteria and is frequently considered equally or more important than the country's current economic condition.

### **2.3.2 Technological**

The technological characteristics of a given asset or enterprise affect its potential for privatization. In general, commercially-proven technologies are viewed by investors as less risky than non-commercial technologies. Secondly, the better the technology, the higher its market value. For example, a combined cycle gas-fired generation facility that has a very good conversion efficiency and state-of-the-art emissions control technologies will likely be valued more highly in a given market than a less efficient, more polluting generating technology. To the extent a given technology is obsolete or has proven to be unreliable, the investor will take these factors into consideration when determining the bid price. It is important to point out, however, that technological factors are far less important in an investor's decision making criteria than the market and regulatory environment of the country under consideration.

### **2.3.3 Legal and Regulatory**

One clear and consistent message from investors is that the legal and regulatory environment is a critical risk factor and decision element as to whether to invest. Some of the issues raised are:

- ▶ Is international arbitration accepted in contracts?
- ▶ What is the record of enforcing contracts in a country?

- ▶ Is there a body of administrative law that governs regulation?
- ▶ What is the track record of the regulatory commission?
- ▶ How reliable is the license or concession to operate a project?
- ▶ Is the host government willing to provide an implementation agreement or other letter of government support?
- ▶ What is the experience of “pioneer” investors (i.e., those who have gone first)?

To the extent these issues are not resolved, the privatization process will be hindered.

### 2.3.4 Political

Political constraints refer to the risk that political matters may affect commercial affairs. The most noteworthy recent example is the Dabhol project (India), in which a change in regional governments resulted in repudiating a power contract negotiated by the outgoing political party.<sup>5</sup>

Privatization investors analyze a country to determine its political stability and the vulnerability of a contract to political changes, especially in the case of buying state-owned assets. Political analysis also covers regional issues such as ethnic and civil disturbance and relations with neighboring countries.

### 2.3.5 Geographic/Geopolitical

Geography and regional affairs, as noted above, can affect a country’s perceived risk from an investor’s viewpoint. For example, some investors believe that Armenia’s conflict with Azerbaijan has a much greater impact on daily life than it actually does in reality. Some countries, including Iran, Burma, and Libya, may be problematic for many western investors due to political restrictions such as embargoes and sanctions imposed on these countries by the U.S. or the U.N.

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<sup>5</sup> Enron Development Corporation is the majority owner in the US\$ 2 billion, 2,450 MW Dabhol project. In August, 1995, the Maharashtra state government halted the first phase of the project and canceled the second phase (and nullified the power purchase contract) on the grounds that the US\$ 1.45 million/MW cost was too high, that tariffs would be too high, and that the award process lacked transparency. After extensive negotiation between project developers and the Maharashtra State Electricity Board, a renegotiated power purchase contract was agreed to, in which proposed tariffs were reduced from US\$ 0.065 per kWh to US\$ 0.052 per kWh compared with the original agreement. The project’s cost was also reduced to US\$ 800,000 per MW and the project’s internal rate of return was reduced from 25 percent to 21 percent.

**2.3.6 Investors' Perspectives**

To demonstrate the difficulties of investment attraction facing nations of the former Soviet Union (FSU), it is instructive to examine the results of a survey conducted by Hagler Bailly. In June, 1996, a series of interviews were conducted related to investment in the FSU with power sector investors including independent power producers and investment fund managers. The FSU was viewed as a region of very high risk. Exhibit 2-1 below shows the investors' perceptions of risk in the FSU compared with a number of other regions.

**Exhibit 2-1  
Power Sector Investors' Perspectives on the FSU**

Region	Political Risk	Macro-Economic Risk	Payment Risk	Exchange Rate Risk	Market Risk	Environmental Risk	Technical Risk
Central and Eastern Europe	●	●	◻	●	●	●	◻
FSU	✘	✘	✘	●	●	●	◻
Latin America	◻	◻	◻	◻	◻	◻	◻
Asia	◻	◻	◻	◻	◻	◻	◻

✘ Extremely Risky      ● Major Risk      ◻ Some Risk

Given investors' perception of power sector investments in the FSU as highly risky, it follows that they tend to require a higher rate of return on those investments. In the case of Central and Eastern Europe (CEE), survey respondents indicated "threshold" rates of return greater than 18 percent compared with 10-12 percent for similar projects in the U.S. and Western Europe. The nations of the FSU are viewed even more pessimistically with threshold rates of return in excess of 40 percent being reported. The perception of the FSU as a highly risky investment environment not only raises investors' required returns, but also limits the types of appropriate privatization methods to those that minimize investor risk.

## 2.4 OVERVIEW OF PRIVATIZATION METHODS

There are several privatization methods which may be used to privatize the electric power sector. The following is a brief description of the most common and relevant methods.

- ▶ **Initial Public Offering (IPO).** This method requires a valuation of the enterprise. Based on the valuation, shares are offered for sale in the open market. This method is best suited for large, modern enterprises with a sound financial operating history.
- ▶ **Strategic Investor.** The government specifies criteria for firms interested in purchasing the enterprise and solicits investors. This method is most appropriate for enterprises that require substantial investment and usually involves investment commitments from the investor. The initial sale price is typically low relative to the investment commitment required.
- ▶ **Vouchers.** The government issues vouchers to individual citizens who convert them into shares in companies or investment funds through privatization auctions.
- ▶ **Employee Ownership.** The government transfers a portion of the shares of an enterprise to its employees.
- ▶ **Management Buyout.** Senior management purchases a controlling share of the enterprise.
- ▶ **Loans for Shares.** A private sector lending institution, such as a bank, loans the government money and the government uses the shares of a state-owned enterprise as collateral. If the government defaults on the loan, the bank acquires the shares, which it may sell to private investors.

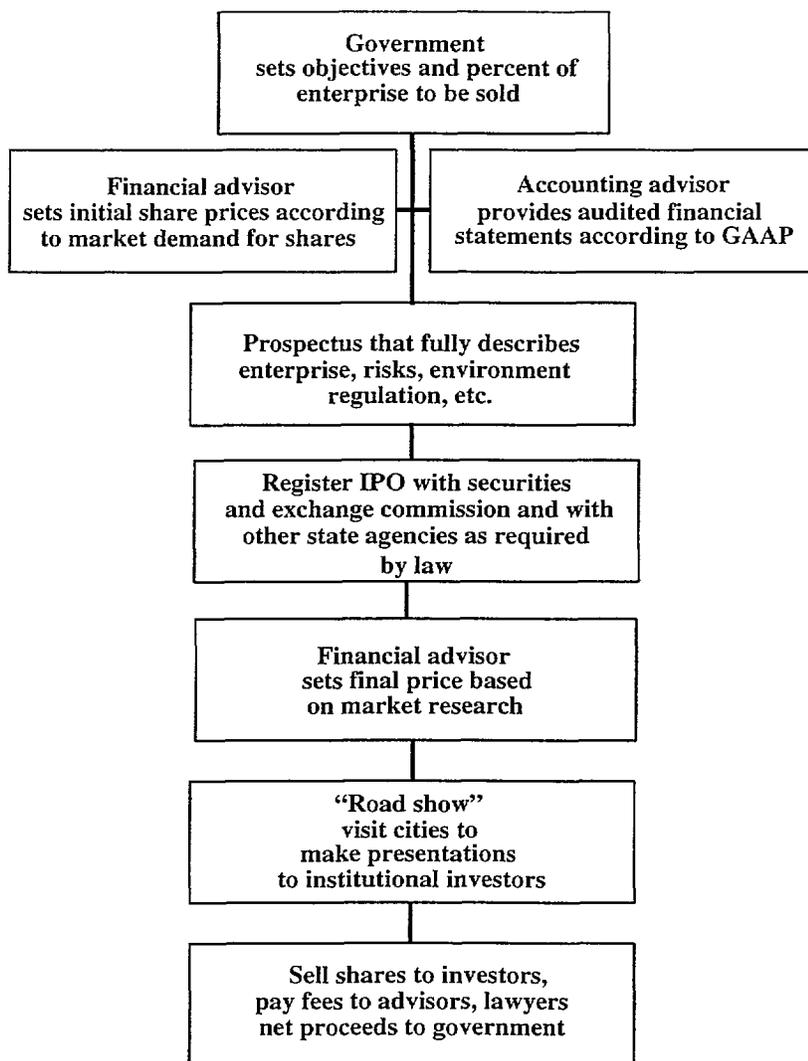
### 2.4.1 Initial Public Offering

This method is applicable for well-established enterprises that have excellent financial controls and reporting systems. In general practice, to complete an IPO the government hires an investment banker who values the enterprise and sells shares in a public stock market sale. Utility IPO's have been carried out in a limited number of countries, including the United Kingdom, Chile, and China and results have varied; in the UK, utility stocks have fared relatively well, whereas in China power companies stocks have declined following the IPO.

The primary advantages of this method are that it offers the potential to maximize privatization sales proceeds relative to other methods due to the competitive nature of the offering and it has a high degree of transparency. The main drawback is that an IPO requires a significant amount of

time and effort to prepare, which may not be justified by the market response. Also, the IPO does not necessarily bring improved management skill and expertise and is difficult to apply in the case when the assets involved in the privatization have large rehabilitation needs. Exhibit 2-2 below illustrates the steps associated with preparing an IPO.

**Exhibit 2-2**  
**Steps Associated with an IPO**



Non-U.S. companies can access U.S. equity investors by issuing shares of stock that are held by a U.S. bank (in an offshore branch) as custodian for the investor. American Depositary Receipts (ADRs) are negotiable certificates that represent a company's publicly-traded equity or debt. Depositary Receipts are created when a broker purchases the company's shares on the home stock market and delivers those to the depositary's local custodian bank, which then instructs the depositary bank to issue Depositary Receipts. Depositary Receipts can be traded freely, just like any other security. Mosenergo, the Moscow electric company, issued US\$ 22.5 million of ADRs in 1995 in a private placement led by the investment banking firm Salomon Brothers. The primary reason why Mosenergo employed ADRs was to enlarge the market for its shares through a broadened and more diversified exposure. From an investor's point of view, ADRs help overcome obstacles to international investment, such as undependable settlements procedures in foreign markets, costly currency conversions, unreliable custody services, poor information flow, unfamiliar market practices, and confusing tax conventions.

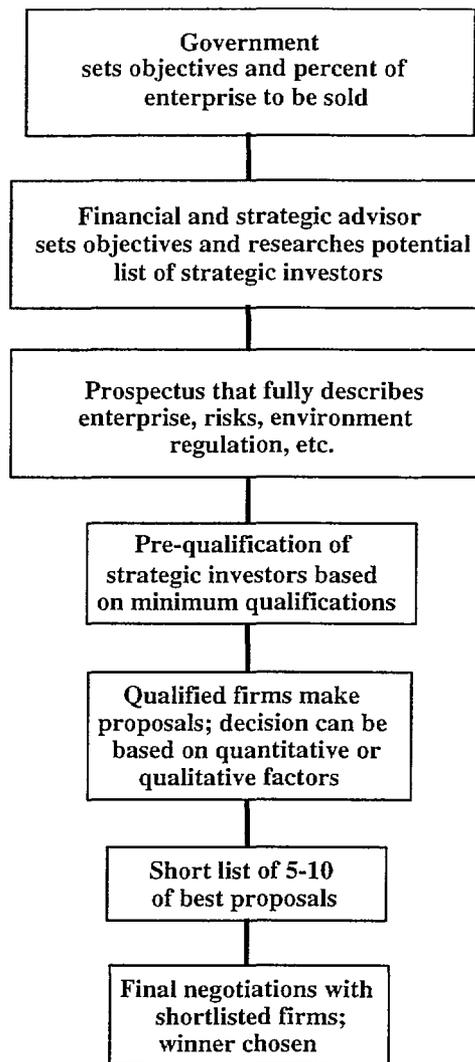
#### **2.4.2 Strategic Investors**

In this method, an investment banker may also act as an intermediary, but the main point is that there is a sale of all or a portion of the ownership of a utility or power plant to a company experienced in the electric power industry. The sale may be carried out on a negotiated basis or a competitive bid basis. Countries using this method include Argentina, Australia, Chile, Hungary, and, most recently, Kazakstan.

The primary advantage of the strategic investor method is that it allows government to select the investor that will best accomplish the privatization objectives and is less time consuming than an IPO. For instance, a strategic investor approach can be ideally suited to a situation in which there is a need to improve management skills, introduce new technologies and rehabilitate the assets. There is a risk, however, that this method may not engender public support if the government's privatization objectives are not clearly articulated and its decision-making criteria lacks transparency.

Exhibit 2-3 on the following page illustrates the steps associated with the strategic investor method.

**Exhibit 2-3**  
**Steps Associated with the Strategic Investor Method**



“Pay-as-you-go” privatization is a variation on the strategic investor method in which the investor offers a nominal initial payment for the asset and agrees to a schedule of investment contingent upon various reform measures (e.g., tariff reform) being undertaken. The advantage of this approach is that it has the potential to attract reputable investors since the terms of investment serve to mitigate risk to the investor by linking investment to tariff increases or other reform objectives. This approach is suitable for enterprises in need of investment and should be considered in the case of the Armenian power sector.

### **2.4.3 Vouchers**

Many countries in Central and Eastern Europe as well as the Former Soviet Union have used a voucher system for privatization. In this method, the government issues vouchers to individual citizens who can convert them into shares in companies through privatization auctions. Countries using this method include, among others, Armenia, Russia and the Czech Republic. Privatization through vouchers has not had a particularly good record, especially in Russia, with reports of widespread insider-dealing. Vouchers may be more applicable to small enterprises than capital intensive power sector assets such as generation stations and distribution systems.

A minority share of RAO UES, (Unified Energy System of Russia Joint Stock Company), the Russian electric power company, was sold through voucher privatization in 1996 (51 percent of the company remains under state ownership). Following the initial voucher sale, 1.2 percent of RAO was sold in an IPO and banks representing Gazprom recently gained 8.5 percent in a debt for equity swap.

### **2.4.4 Employee Ownership**

Privatization through employee ownership involves the transfer of a portion of the ownership of a state-owned enterprise to its employees. Cases where this approach has been used in the power sector include Bolivia, Chile, Czech Republic and Hungary. In Argentina, strategic investors, as part of their bid to acquire control, were required to give 10 percent of the ownership to employees. Transferring ownership to employees does not address the problem of lack of capital, but can be helpful in gaining employee buy-in to the privatization.

### **2.4.5 Management Buyout**

In this method of privatization, a select group of employees, those in management control of the enterprise, receive ownership of the enterprise. This approach was used in Russia, though not in the power sector. This method has the potential to raise questions of fairness and possible conflicts of interest. In order to prevent management buyouts that involve insider trading and other corrupt practices, this method should only be used in countries that have securities laws to prevent insider deals and regulatory agencies to enforce such laws.

## **2.5 EXAMPLES OF ENERGY SECTOR PRIVATIZATION**

Today's global power market is intensely competitive. Power sector investors have a wide variety of country and company investment options. Scores of developed and less developed countries are privatizing their power sectors. In addition to the much publicized activity in Argentina, Australia, Chile, New Zealand, and the U.K., countries such as China, Bolivia, Brazil, Hungary and Kazakstan are also establishing track records with respect to power sector privatization.

Much of the power sector privatization that has taken place to date is largely irrelevant for Armenia in terms of lessons to be learned. Given Armenia's risk profile and the unique characteristics of its power sector, the type of investors Armenia will be able to attract is far more limited than the type of investors Chile has attracted, for example. Therefore, it makes most sense to focus on examples of privatization that are most relevant to Armenia. These tend to be limited to high-risk countries with little or no previous experience with power sector privatization.

In order to help characterize global power sector privatization activities and to put Armenia's prospects into context, the following sections offer a brief overview of large-scale privatization through use of IPO's and utility mergers and acquisitions. This is followed by descriptions of recent power sector privatization initiatives in countries that share (somewhat) similar social and economic characteristics as Armenia.

### **2.5.1 Electric Industry Initial Public Offerings**

Electric industry initial public offerings throughout the world have raised more than US\$ 1.9 billion between 1992 and 1997. Electric industry IPOs are a relatively uncommon form of privatization compared to other methods of privatization such as mergers and acquisitions or privatization through a sale to strategic investors. For example, there have been fewer than 20 electric power sector IPOs between 1992 and 1997, compared to more than 200 transactions through other forms of privatization over the same time period. Exhibit 2-4 on the following page lists electric sector initial public offerings between 1992 and 1997.

**Exhibit 2-4**  
**Electric Industry Initial Public Offerings: 1992-1997**

<b>Date</b>	<b>Principal Issuer</b>	<b>Price (US\$ million)</b>	<b>Nation</b>	<b>Country Credit Rating (S&amp;P)</b>
Oct-94	Huaneng Power International	625	China	BBB
Aug-94	Shandong Huaneng Power	333	China	BBB
Oct-94	Korea Electric Power	300	South Korea	AAA
May-92	Alcatel Alsthom	236	France	AAA
Feb-94	AES China Generating	160	China	BBB
Jun-94	Chilgener	62	Chile	A
Jun-94	Empresa Nacional Electric	56	Chile	A
Oct-93	Enerasis	55	Chile	A
Nov-94	Electricity Generating Public	50	Thailand	AA
May-95	Guangdong Electric Power	49	China	BBB
Mar-95	National Power (select stations)	28	U.K.	AAA
Mar-95	Power Gen (select stations)	14	U.K.	AAA
<b>Total</b>		<b>\$1,968</b>		

Source: Securities Data Company, Inc., March, 1997, database search on SIC Codes 4911, 4939, and McGraw-Hill Private Power Quarterly 1997.

Power sector IPOs have been concentrated in a few select investment-grade countries, including Chile, China, and the U.K., and have focused on enterprises with substantial market value. The primary motivation of the state in selling these enterprises was to maximize the sales proceeds rather than to attract investors with technical expertise and capital for asset rehabilitation. In addition, the costly and time-intensive nature of an IPO makes it a relatively risky method to use for enterprises of limited value.

Armenia has not been rated by a credit rating agency. Based on the emphasis rating agencies place on government debt and the country's export potential, it is unlikely that Armenia would be rated favorably. The lack of a favorable country credit rating is a major obstacle to power sector privatization through the use of an IPO.

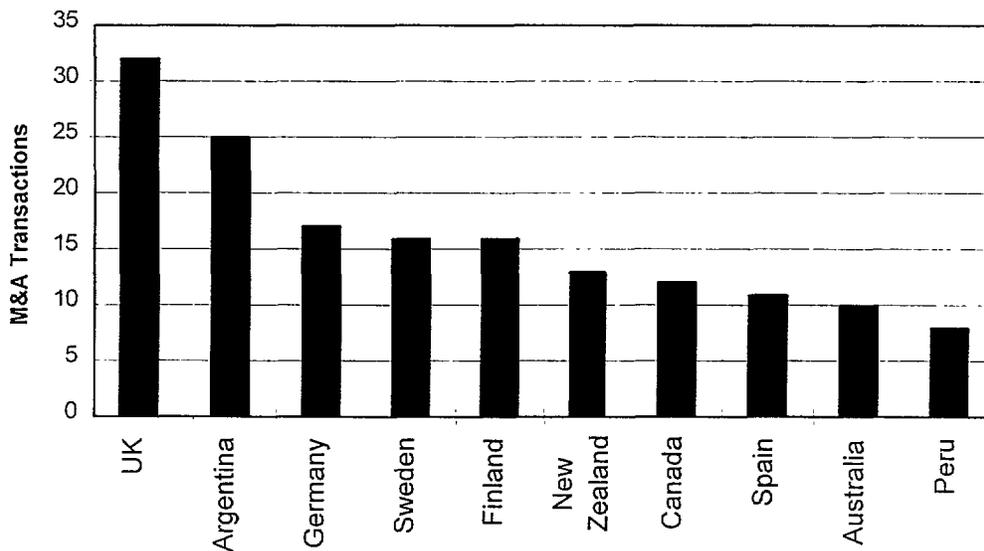
**2.5.2 Mergers and Acquisitions (Strategic Investors)**

While there is not an exact database of strategic investments in electric power privatization, a proxy of strategic investor activity may be gleaned by reviewing mergers and acquisitions (M&A) activity in the electric power sector.

There is a strong trend toward international utility industry consolidation, with more than 230 non-U.S. utility and electric service industry mergers and acquisitions between 1992 through March, 1997. Appendix B provides a detailed listing of transactions that have taken place.

The number of non-U.S. electric industry M&A transactions has nearly doubled from 34 in 1992 to 63 in 1996, and 18 transactions have taken place between January and March, 1997. While utility M&A activity has occurred in more than 30 countries over this time period, the vast majority of M&A transactions have taken place in the U.K. and Argentina, countries in which power sector privatization has attracted tremendous investor interest. Exhibit 2-5 below lists the top ten countries outside the U.S. in terms of utility M&A activity over the past five years.

**Exhibit 2-5  
Top 10 Countries for Electric Industry Mergers & Acquisitions,  
Non-US Targets (1992 -1997)**



Source: Securities Data Company, Inc., database search, March, 1997, SIC Codes 4911 and 4939.  
Note: U.S. based acquisition targets not included.

The characteristics of countries receiving the most investor interest generally include:

- ▶ high GDP or robust economic growth (Argentina, Peru);
- ▶ stable economies (Germany, Finland, New Zealand);
- ▶ disaggregation and commitment to private power (U.K. and Argentina).

It is expected that the trend toward utility consolidation through M&A will continue. Strategic investors involved in utility M&A, including major utilities and independent power producers, are very interested in acquiring utilities in emerging markets in order to profit from future growth in these markets and also to limit their competitors' opportunities for expansion.

An example of this is found in Croatia, where the privately-owned German electric company RWE Energie AG formed a joint venture with the Croatian electricity board (HEP) to finance the completion of the Croatian Plomin 2 coal-fired power plant. Upon completion, the plant will sell power to RWE at a fixed price over a 15 year period. As a result of this deal, RWE Energie has established a presence in Croatia (and potentially limited its competitors access to this market) while acquiring a low-cost power supplier for its domestic markets.

### **2.5.3 Power Sector Privatization in the FSU and CEE**

Power sector privatization has had mixed results in the FSU and CEE. In many countries, governments have been slow to implement power sector reform initiatives that typically precede privatization. In the limited number of countries that have moved ahead with power sector privatization, it has not resulted in significant proceeds to government or capital for system rehabilitation. For example, Russia's mass privatization program eroded public confidence in the privatization process due to the market devaluation of vouchers and concentration of vouchers among entrepreneurs. In the case of Hungary, investment prospects diminished after the government failed to raise tariffs as previously agreed. Likewise, in Kazakstan, it remains to be seen whether the government's decision to proceed with privatization prior to sector and enterprise restructuring will achieve the investment objectives for the sector. Exhibit 2-6 on the following page summarizes major power sector privatization activities that have taken place to date in the FSU and CEE.

**Exhibit 2-6  
Major Players with Advanced Projects in Select Countries**

Country	Investor & Origin	Total Bid Package (US\$ Millions)		
		Total Bid	Initial Payment	Investment Guarantees
Czech Republic	NRG (U.S), Eastern Group	\$475*	\$350	\$125
Estonia	NRG (U.S)	\$250	\$50*	undetermined
Hungary	AES (U.S), Tractabel (Belgium) IVO (Finland), Tomen (Japan), PowerGen (U.K), RWE (Germany), EVS, Tenneco (U.S.)	\$735	\$435	\$300
Kazakstan	AES (U.S.), Tractabel (Belgium)	\$1,000	Minimal	<\$1,000
Poland	AES (U.S.)	\$250	NA	\$250
Ukraine	Northland (Canadian)	\$111	NA	\$111

\* Approximations

Note: The majority of this investment activity occurred in 1996. Excluded is approximately half (US\$ 220 million) of the privatization up-front cost in Hungary which occurred in 1995.

A review of power sector privatization in Hungary and Kazakstan offers divergent approaches to privatization in two countries which are somewhat like Armenia in terms of their need for immediate investment in the power sector and their struggle to create a market-based economy.

**2.5.4 Hungary**

Hungary's 6,600-MW electricity sector was reorganized in 1992 with the separation and corporatization of generation, transmission, and distribution assets of the state-owned and vertically-integrated power sector monopoly enterprise MVM. The generation assets of MVM were divided into eight companies, and sector demonopolization has encouraged bulk power generation by independent power producers. A grid company was set up to manage dispatch, coordinate transmission, and control power imports and exports. Six distribution companies have been formed out of MVM's distribution assets.

A relatively weak regulatory body has been established for the power sector and is authorized to approve tariff increases. Partial privatization of the distribution and generation subsectors has taken place and ownership of MVM's assets will be divided between strategic foreign investors, employees, municipalities, and the government's asset holding company.

After dismal results trying to sell off distribution companies in 1993, a second round of power sector privatization in 1995 raised US\$ 1.3 billion. The 2,000 MW Dunamenti coal-fired plant, sold to Tractebel in 1995, represents the largest power sector privatization to date in Hungary. Through the sale, the government sought to obtain revenue for the state budget and to create a competitive market for generation.

While the initial response to the 1995 privatization offering was viewed as positive, recent events have called into question investor enthusiasm. Tractebel, the main investor in the power sector, reported losses in Hungary of US\$ 13 million and is considering legal action against the government to recover its initial investment of US\$ 141 million.<sup>6</sup> Tractebel claims the government has failed to live up to terms specified in the sale of the plant and failed to raise the price at which it purchased power from the plant to a sufficiently high level to earn a return. The price of electricity was slated to rise in March, 1996 by an average of 18 percent, but government failed to follow through on this promised change.<sup>7</sup> In addition, the government raised the price of fuel without allowing Tractebel to pass along fuel costs to consumers, exacerbating the company's financial problems. If Tractebel pulls out of Hungary as a result of these problems, it will have a negative effect on other investors considering investment in the country.

The Hungarian experience offers two important lessons for Armenia: (1) power sector restructuring and the creation of a legal and regulatory framework conducive to private investment will attract reputable strategic investors, and (2) the government's failure to live up to its obligations will reduce investor confidence and frustrate subsequent privatization and investment attraction efforts.

### 2.5.5 Kazakhstan

In 1996, the Government of Kazakhstan embarked on an aggressive power sector privatization program, driven by the power sector's inability to meet the country's basic power needs and the government's inability to finance sector rehabilitation. Various analysts have estimated that Kazakhstan will require approximately US\$ 10 billion to modernize up to 18,000 MW by the year 2000.

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<sup>6</sup> Financial Times, *East European Energy Report*, Issue 63, December, 1996.

<sup>7</sup> U.S. Embassy Budapest, Cable dated February 1, 1996.

Privatization began with the sale of several large generation stations, even though these enterprises had not undertaken the typical precursors to privatization such as commercialization and valuation. The government's privatization advisors warned that carrying out privatization prior to commercialization activities would result in lower sales proceeds. The government recognized this tradeoff, but felt that the crisis warranted a more immediate solution. As a result of this approach, the government sold the plants for a nominal initial payment with the stipulation that investors would commit to an investment program in the plants over time. This approach, known as "pay-as-you-go" privatization, has resulted in the sale of over 70 percent of Kazakhstan's generating capacity. This same approach is also being used to privatize the nation's 19 distribution enterprises.

Foremost among these developments was acquisition of the 4,000 MW Ekibastuz coal-fired power plant by a partnership of AES Corporation and Suntime Power Ltd. of Israel. The partners paid US\$ 2 million up front for control of the plant and agreed to make up to US\$ 500 million in investments over the next five years. This investment is expected to increase power output to more than 60 percent of installed capacity.

Another noteworthy transaction took place in July, 1996, involving the sale of a 2,400 MW coal-fired plant to the London-based Japan Chrome Corporation. Terms of the sale were confidential, but analysts estimate that the initial payment and investment guarantees total more than US\$ 250 million. Presently, Kazakhstan is attempting to privatize the 18 remaining distribution utilities. Further, a lease to operate the transmission grid and dispatch has been under negotiation with both the U.K. based National Grid Company and ABB.

Exhibit 2-7 on the following page summarizes power sector privatization in Kazakhstan to date and demonstrates the dramatic amount of activity that has recently taken place.

**Exhibit 2-7**  
**Summary of Kazakhstan Power Sector Privatization**

<b>Facility</b>	<b>Owner/ Operator</b>	<b>Transaction Date</b>	<b>Total Bid Package (US \$ Million)</b>	<b>Installed Capacity</b>
Karanganda EP #1 (coal)	Ispat Karmat (England)	March 1996	42	450 MW
Ermakovskaya EP (coal)	Japan Chrome Corp (England)	May 1996	259	2,400 MW
Elibastuz EP#1 (coal)	AES (US)/Suntree (Israel)	June 1996	544	4,000 MW
Pavlodar TPS (coal)	Whiteswan LTD (UK)	June 1996	113	350 MW
Dhezkazgan TPS (coal)	Samsung (S. Korean)	August 1996	107	177 MW
Zhambul EP (gas/mazut)	Vitol Munai (local)	August 1996	124	1,230 MW
Alamtyenergo (hydro/coal/gas and mazut)	Tractabel (Belgium)	August 1996	358	900 MW
Karaganda EP #2 (coal)	Eprime (US) and Indep. Power Corp (UK)	October 1996	418	608 MW
Ekibastus EP#2 (coal)	Samsung (S. Korea)	Under negotiations		1,000 MW
Kazakstan Electricity Grid Operating Co.	Not yet decided	5 year lease concession under negotiation following competitive bid		National transmission and dispatch system

Over 50 percent of installed generation capacity has been privatized.

Almatyenergo was the first of 19 distribution companies privatized. The remainder are scheduled to be privatized this year.

Kazakstan's approach to power sector privatization differed from Hungary's by largely foregoing enterprise restructuring and commercialization. In order to rapidly attract private capital into the sector, the government was willing to accept lower bids for power sector enterprises than it might otherwise have received. The challenge for government will be to follow through with its commitments to the private investors, upon which subsequent investment is contingent.

The strategic investor (“pay-as-you-go”) approach is important for Armenia to consider for the same reasons that it was used in Kazakstan: it can quickly provide investment for the power sector’s urgent rehabilitation needs and can help to overcome the investors’ perception of country risk by linking investment to other reforms, which have the potential to increase the value of the investment. Armenia is a good candidate for this approach as it has already demonstrated a commitment to creating a favorable investment climate through the initial round of power sector restructuring and the creation of the independent Energy Commission. These factors will help build confidence among potential strategic investors in the government’s ability to implement future reform initiatives as potentially called for in the terms of a strategic investor privatization.

## 2.6 SUMMARY

Privatization of the electric power sector can reduce state investment requirements in the sector and provide private capital for system rehabilitation. Internationally, privatization has led to improved economic efficiency, increased economic growth, and increased investment in the economy. In order to bring about these benefits, privatization requires an appropriate legal and regulatory framework and political as well as popular support. Numerous privatization methods exist, but the choice of method depends on the government’s privatization objectives. If the government’s goal is to attract capital and technical expertise for power sector rehabilitation, the strategic investor method appears to be most relevant.

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## CHAPTER 3

### INFORMATION PREREQUISITES FOR PRIVATIZATION

#### 3.1 INTRODUCTION

This chapter discusses information prerequisites for power sector privatization, including guidelines regarding the content and format of information required for privatization of generation, transmission and distribution assets.

##### 3.1.1 Investor Information Needs

There is a direct correlation between the information provided related to privatization and value that a potential investor perceives. When an investor receives the right information in the right format, presented in accordance with their decision criteria, and when this information is provided quickly and objectively, then the value perceived is high.

Investors considering electric utilities and independent power are keenly interested in information pertaining to the utility's regulatory and legal environment. Information on the asset's physical characteristics tends to be of secondary importance. Perhaps because engineers have historically dominated the electric utility industries, there is a tendency for sellers of electric utility assets to assume that engineering concerns are foremost of interest to potential investors, when in fact it is the market and regulatory/legal environment that dominates investor concerns. Exhibit 3-1 on the following page provides a list of investor concerns, ranked in order of importance.

**Exhibit 3-1  
Privatization Investor Information Requirements**

I.	Legal Environment, Regulatory Regime
A.	Site control/ right to develop, own assets, property law
B.	Permitting: national, local
C.	Environmental compliance and impact
D.	Government agency involvement/support
E.	Transparency of acquiring concessions, licenses/change in law protection
II.	Privatization Economics
A.	Financial projections (capital, financing legal costs, on-going revenues/expenses)
B.	Documentation of economics: contracts or forecasts
C.	Disposition/refinancing/transfer
III.	Foreign Exchange
A.	Source of hard currency, creditworthiness
B.	Fluctuation of exchange rates
C.	Insufficient reserves/convertibility
IV.	Power Sales
A.	Sales to utility/industry (creditworthiness of power purchaser)
C.	Interconnection, transmission
D.	Penalties, timing, coordination with other contracts
E.	Current and future market for power: DSM, imports, new plants, retrofits
F.	Country economic environment
G.	Comparative production cost, relationship to tariff-setting
V.	Taxation
A.	National, local, regional, VAT
B.	Other fees, levies, and duties
C.	Tax treaties, reliability, changes, consistent application
VI.	Financing
A.	Project description and documentation
B.	Financial structure, equity contribution, debt funding
C.	Power purchaser creditworthiness
D.	Financial market research, sensitivity analysis
VII.	Comprehensive Risk Analysis: Technical and Economic
A.	Credit risks, construction risks
B.	Market, financial and operating risks
C.	Political risks, legal risks
XIII.	Technical Engineering
A.	Engineering/site
B.	Equipment and O&M

Source: Hagler Bailly

Note that for privatization the first concerns are legal and regulatory, then economic and financial, and lastly, matters of engineering and equipment.

### **3.1.2 Presentation Format**

International institutional investors expect information to be provided in a standardized format. Typical presentational formats include an Information Memorandum, an Offering Circular, Prospectus, Business Plan, Project Description, and a Request for Proposal. The contents and presentation should follow a format attuned to the target audience.

It is highly useful to use a third-party independent advisor to develop such an information package in order to comply with the expected content requirements and presentation format. The Southern California Edison Plant Sale Brochure in Appendix B is an example of a very brief brochure designed to attract potential investors. The complete information memorandum would contain detailed information such as that listed in Exhibit 3-1.

### **3.1.3 Audited Financial Statements**

The highest level of information presented in terms of perceived reliability are audited financial statements. Financial data are reviewed and presented with the official approval of an accounting firm recognized by institutional investors.

Investors place a great deal of emphasis on audited financial statistics. For example, in 1996 one of the best stock market investments was in "Red Chips," that is Hong Kong-listed companies investing in Chinese state-owned assets. The attractiveness of Red Chips was that the Hong Kong Stock Exchange had strict requirements for audited financial statements and for disclosure. Chinese state-owned assets have been otherwise available, but there was no disclosure of financial information for these firms. Once the information became available, investment in these firms soared.

In general, the better the quality and ease of obtaining information, the higher will be the valuation. If the potential investor has to struggle to get information, it will diminish the valuation and may also cause the entire transaction to fall through.

## **3.2 INFORMATION EXPECTED BY ASSET TYPE**

Different information is expected depending on the asset being privatized. Also, different information is required depending on the financial structure (IPO, Strategic Investor) being contemplated. The following tables present the minimum data required by investors considering power sector investment in generation, transmission, and distribution assets and the status of such information in Armenia.

**Exhibit 3-2  
Information Required to Privatize Generating Plants**

<b>Information Requirements - Generation</b>	<b>Status of Information in Armenia</b>
Capacity Rating and Generation Characteristics, Operating History	Available
Rehabilitation Work Needed: Description, Cost, Timing	Availability unclear
Design, Engineering, and Performance	Available
Dispatchability, Load Following Capability	Availability unclear
Environmental Approvals, Compliance	Difficult to find
Permits and Licenses	Deficient
Fuel Procurement or Hydrology	Hydrology yes, fuel impossible to predict
Insurance	No market yet
Legal and Regulatory Matters	Highly deficient
Interconnection, Location, Site Matters	Available
Operation and Maintenance, Staffing	Easy to forecast
Model Contracts, Terms, Conditions, Power Prices	Elusive
Reliability	Can be forecast and dealt with
Thermal Sales	Difficult to determine price, buyer
Transmission, Wheeling	Unclear
Government Guarantees, Support	No clear policy

**Exhibit 3-3  
Information Required to Privatize Transmission Systems**

<b>Information Requirements - Transmission</b>	<b>Status of Information in Armenia</b>
Capacity Rating and Operating Characteristics, Performance History	Available but very difficult to access
Rehabilitation Work Needed: Description, Cost, Timing	Available
Design, Engineering, and Performance	Available
Environmental Approvals, Compliance	Unclear
Permits and Licenses	Unclear
Insurance	Unclear
Legal and Regulatory Matters	Unclear
Interconnection with Plants and Distribution Companies	Available
Location, Site Matters	Available
Operation and Maintenance, Staffing	Available
Electric Sale and Purchase Contracts, Terms, Conditions, Transmission Prices	Unknown
Organization, Staffing, Employment Covenants	Available
Reliability	Available
Government Guarantees	No clear policy
All-source Power Supply Options, Contingency Plans	Unknown

**Exhibit 3-4**  
**Information Required to Privatize Distribution Companies**

<b>Information Requirements - Distribution</b>	<b>Status of Information in Armenia</b>
Customer Load Profile, Demand and Energy	Becoming clearer
Physical Plant Description	Available
Rehabilitation Work Needed: Description, Cost, Timing	Available
Design, Engineering, and Performance	Available
Environmental Approvals, Compliance	Unknown
Permits and Licenses	Unknown
Insurance	No market yet
Legal and Regulatory Matters	Unclear
Interconnection Transmission	Available
Operation and Maintenance, Staffing	Available
Electric Sale and Purchase Contracts, Terms, Conditions, Transmission Prices	Unclear and not enforced
Organization, Staffing, Employment Covenants	Available

**3.3 SUMMARY**

The success of a privatization offering depends in large measure on the extent to which the government provides the requisite information investors use to assess the investment. The better the quality and ease of obtaining information the higher will be the valuation. Timeliness and provision of this information in a clearly understood format are essential aspects of the financial marketing process. Financial information on enterprise performance and economic information on the host country, industry, and demand and degree of competition is far more important to investors than detailed technical information on the enterprise.

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## CHAPTER 4

### PRIVATIZATION VALUATION, RISK ANALYSIS AND BIDDING

#### 4.1 INTRODUCTION

This chapter describes valuation techniques and related financial considerations such as risk factors that affect valuation. The chapter also discusses bidding procedures and elements of a financial marketing campaign. The purpose of this chapter is to highlight the importance of using proper valuation methods and the need for a clearly laid out marketing approach to support the privatization process.

##### 4.1.1 Why Make a Valuation?

Within the context of privatization, the main purpose of valuation is to ensure that the government and its citizens receive reasonable compensation for the assets being privatized. Specifically, it is to develop a realistic expectation about the minimum and maximum levels of the proceeds from privatization.

The historical cost invested in an asset may be equal to, greater than, or less than the value of the asset. Although the government selling the asset may have an idea of the value desired from privatization, the value is determined by the market. In general, a third party advisor should determine the value and the valuation process should not be a point of great effort compared with efforts to make the valuation higher, such as through serious strengthening of the legal and regulatory regime.

The value of an asset has more to do with economic and regulatory factors (and associated risks) than with technical matters. For example, an electric generating station has a much higher value in California than in Armenia, whether it is brand new or fully depreciated, due to the fact that the plant in California has access to serve a large power market at relatively high prices. Likewise, an electric generating station (serving the California market or any other market) that has an attractive power purchase agreement with a solvent customer would likely have a higher value than the exact same plant in the same market that did not have a power purchase agreement. The plant without the power purchase agreement is exposed to market risk whereas the plant with the agreement faces less market risk, and is therefore more highly valued. It is critical for governments that are privatizing electric assets to understand that the cost sunk into an asset may not be recoverable. Such a valuation approach can also be called the book value approach, and it is of virtually no significance in ascertaining the value to be realized in the marketplace.

## 4.2 VALUATION METHODS: BOOK VALUE AND FAIR MARKET VALUE

There are two primary approaches to valuation: (1) book value and (2) fair market value. Book value is essentially based on the initial cost of the plant, less depreciation. For privatization purposes, it is inappropriate and self defeating to use book value to establish the fair market value of a power plant. A project may contain valuable, long-lived assets, especially in the case of hydroelectric assets such as dams, penstock, spillways, and electrical interconnections, and other items. Even turbines and generators can be retrofitted and redeployed for 30, 40 and 50 years. For thermal plants, valuable assets also include the site, which can be very costly and difficult to develop. These assets may have a book value that is low, or possibly even zero.

The second approach, fair market value, is a function of the economic earnings potential of the power plant. Fair market value of a generating plant depends on: (1) the power sales price; (2) its electricity production capacity; (3) operating expenses; and, (4) the initial capital cost necessary to rehabilitate the enterprise. Note that there are four main parameters that can affect the fair market value either positively or adversely. Different evaluators may come to different conclusions about the fair market value of the plants. The actual price achieved in the market will presumably be the result of a transaction with the buyer that came up with the highest valuation.

In the final analysis, the fair market value is confirmed by the market. If the privatization is done with reasonable notice, transparency, and competition, then the resulting price establishes the fair market value for the assets. Alternatively, if assets are offered for sale at their book value, the government runs the risk of not being able to attract investors (who may consider the asset overvalued) or, if the market value exceeds book value, the government may unjustly enrich the investor at the expense of the public.

### 4.2.1 Fair Market Valuation Approaches

#### *Earnings*

Valuation based on earnings is an approach in which an enterprise is valued according to a multiple of its earnings, where the earnings are stated according to Generally Accepted Accounting Principles (GAAP). For initial public offerings, this method is quite important. "Earnings" is a financial concept that measures profitability according to specific rules of GAAP. Earnings take into account revenues, expenses, capital expenditures (through depreciation), financing, and other factors that are meant to comprehensively depict the profitability of an enterprise. Earnings per share is equal to the earnings of the entire enterprise divided by the number of shares outstanding.

Valuation based on a multiple of earnings is tied to the concept that the earnings of similar companies imply a similar valuation. When a company is publicly traded on a stock exchange, its stock market price is said to trade at a multiple of earnings. For example if a stock trades at US\$

50 per share and has earnings per share of US\$ 10, it has a multiple of five. Comparable companies should, theoretically, also have a multiple of five. The stock market valuation for large utility companies implies a valuation for other large utility companies, once the earnings are expressed in accordance with the proper GAAP format, and when the proper corresponding multiple is applied.

#### *Asset Value*

This method is sometimes referred to as liquidation value, and is appropriate for use when there is a clear and established relationship between the asset characteristics and market value. It is used for gas or oil reserves, which have a world market price and which are fungible commodities. Electricity, which tends to be produced at a local or regional level and is consumed instantaneously, has a different value in different markets. In addition, electricity markets and prices tend to be highly regulated. These factors tend to limit the relevance of the asset value approach for power sector valuation purposes.

#### *Discounted Cash Flow*

This method of valuation is widely relied upon by investors in independent power and in electric utility privatization. A foreign investor buying assets in a privatization is seeking to make a reasonable return, given the risk involved. The investor compares the necessary investment to the projected future cash flows expected to be earned. The investment consists of the cash payment to acquire the asset, plus the cost of improvements, repair, expansion, and other related expenses.

The investor then makes a prediction about how much money will be earned, for 10 to 20 years in the future, based on reasonable assumptions about the generation capacity of the plant, the hours of operation, the price of the electricity, the expense of operations, taxes, and whatever other financial factors the investor deems pertinent.

#### *Dividend Stream*

Some investors use a dividend stream method to value public corporations, especially in low-growth industries such as electric utilities. It is based on projecting the expected stream of dividends to be paid from a stock investment, and then applying a present value factor to it. For privatization, particularly in emerging markets, this method is not particularly useful.

#### *Company and Country Comparison*

This method is highly relied upon by investors in electric sector privatization. Investors compare countries and companies' assets, as well as the various risk factors associated with an investment decision. Statistically, companies are compared on the dimensions of revenues, profit, efficiency, growth potential, and other factors. Countries are compared on factors such as economic growth,

debt, balance of payments, exchange rate fluctuations, and many other parameters. Using these criteria, the investor seeks to rank and quantify the relative attractiveness of the company or country.

It is important that the country be taken into account when valuing a company or asset. Indeed the rating agencies, such as Standard and Poor's, have a policy of never ranking a company higher than the ranking of its host country. For example, as long as Armenia does not have an investment grade credit ranking, no individual company in Armenia can receive an investment grade credit rating.

### 4.3 RISK FACTORS

Investors analyzing risk look at the economic environment, business practices, legal framework, local sources of financing, political stability, and compare each country against others. Countries that have been successful in bringing in new foreign direct investment to the electric power sector provided significant government support to respond to investor concerns. Well known examples of such countries include Jamaica, Honduras, China, Indonesia, India, Pakistan, and the Philippines. When considering privatization, the government selling the asset should consider the following risk factors, as perceived by the investor:

- ▶ **Country Risk.** Country risk is a matter of evaluating macroeconomic conditions and projections for the future, as well as political considerations such as governing by the rule of law, potential for asset nationalization, threat of war, etc.
- ▶ **Industry Risk.** The industry risk is a matter of the country's regulatory policy and business environment. An industry risk assessment will always be performed in the context of the country risk assessment.
- ▶ **Company Risk.** Company risk is a matter of analyzing the individual company position within the context of both the industry and country risk analyses.
- ▶ **Asset Risk.** Asset risk pertains to risk associated with asset performance.

One of the premier risk-ranking organizations is Standard & Poor's in New York. Their required information to rate an electric utility company is based on a collection of financial, management and regional information. To undertake power sector privatization, Standard and Poor's information guidelines listed in Exhibit 4-1 should be followed in order to satisfy investor information requirements.

**Exhibit 4-1**  
**Standard and Poor's Electric Utility Risk Ranking Criteria**

1. Organization and management structure
2. Regulations and license conditions
3. Regional economic structure and growth
4. Historical and projected unit sales and revenues, rates, and projected growth by customer class
5. Key historical and projected operating and performance data
6. Environmental performance and compliance with applicable standards
7. List of 20 largest customers including annual consumption, revenues and business sector
8. Financial policies and guidelines, dividend targets and taxation basis
9. Historic and projected financial statements, consolidated by business, assumptions and sensitivities
10. Historical and projected capital expenditure for each business unit by category
11. Financing plan for capital program
12. Debt profile by maturity, interest rate structure and currency
13. Backup liquidity (bank lines, liquid investments, etc.)

\* Source: Standard & Poor's Electric Utility Ratings Brochure

Given the wide variety of potential risk factors, investors typically carry out extensive research on a given asset or enterprise prior to privatization. Due diligence is the process of verifying the information presented to the investor. It is not the process of collecting the basic information needed to make an investment decision, but rather a process of confirmation. In international electric power privatization transactions, the data collection and presentation is the responsibility of the selling government. The due diligence process would involve the investor analyzing the information according to a checklist along the lines presented in Chapter 3.

#### **4.4 BIDDING PROCEDURES**

There can be many different ways to organize the bidding process, depending on the situation and the government's privatization objectives. In cases where bid evaluation criteria are clearly identified (such as a highest price), a competitive bid is appropriate. A negotiated bid is appropriate where the bidding criteria is multi-dimensional and the proposals are not likely to be as easily comparable. Privatization sponsors can also use a mixed approach of pre-selecting a group of qualified investors and then allowing a managed competition to take place. In the case where a strategic investor is solicited on a negotiated basis, there is often a criticism of insider dealing or favoritism. This criticism can be mitigated somewhat by having the government retain a minority ownership stake in the enterprise being privatized, thereby allowing the government to share in the potential benefits the strategic investor may realize through investment and improved operations.

**4.4.1 Selecting the Investor**

To select an investor it is useful to have the bid criteria clearly identified and the objectives of the process clearly stated. For example, a selling government may seek to maximize immediate cash proceeds for a sale, to keep electricity tariffs low in the future, or to attract management expertise as a priority. If the objectives are overly ambitious (such as an unrealistically high valuation), then the investor selection process is quite difficult.

**4.5 FINANCIAL MARKETING**

Financial marketing refers to the marketing of the financial investment to ultimately bring in the investor. It is based on the premise that marketing is finding out what the customer needs and then filling that need. In this case the customer is the investor and the product being sold is the utility. Exhibit 4-2 summarizes the steps for financial marketing of the privatization investment.

**Exhibit 4-2  
Steps for Financial Marketing of the Privatization Investment**

Financial Analysis	Complex comprehensive financial projections and sensitivity analysis. Review financial and operating reports. Compare to other enterprises seeking financing.
Due Diligence	Review offering to uncover issues that would be of key concern to investors.
Strategic Thinking	High-level, objective review of privatization matters in a discreet forum with knowledgeable industry persons. Important to have a third party viewpoint.
Review Contracts	Detailed and in-depth review of all contract matters to ensure that the total project will make sense to the investor in all major ways: economic, financial, technical, operating, and permitting.
Financial Market Research	On-going contact and involvement in capital markets provides data to use in structuring the project. Specific research for particular projects ensures the financing plan is feasible.
Draft Privatization Offering Materials	Write offering materials and coordinate with other experts to ensure that the project description can be quickly supported with credible evidence.
Manage Investor Relations	Contact potential investors and lenders and professionally manage the competitive solicitation to ensure that the best bids are achieved.
Investor Selection	Compare the results of the privatization bids. Probe the level of commitment and the decision process involved.

#### 4.6 SUMMARY

Valuation is an important element of privatization. It is important for governments embarking on privatization programs to realize that market valuation is the standard approach and that valuation based on historic costs is largely irrelevant. Failure on the part of government to grasp this distinction will result in unrealistic expectations regarding asset valuation. Within the context of market valuation, the legal and regulatory environment are key determinants of the enterprise's value. The existence of a legal and regulatory environment conducive to private investment serves to minimize investor risk and improve asset value. In addition to creating an economic environment that supports investment by minimizing risk, investors also need credible financial and technical information on the assets and enterprises to be privatized. Independent financial advisors can play a useful role in this regard by helping to ensure that the information provided meets investors expectations in terms of detail and objectivity. This information is usually provided as part of a comprehensive financial marketing program.

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## **CHAPTER 5**

### **PRIVATIZATION PARTICIPANTS' ROLES**

#### **5.1 AN OVERVIEW OF PARTICIPANTS AND ROLES**

This chapter provides an overview of the roles of various participants involved in the power sector privatization process, including government, the electric service provider, electricity consumers, the power sector regulator, investors and lenders, fuel and equipment suppliers, construction contractors, multilateral lending organizations, and financial advisors. It is important for Armenian privatization policymakers to understand the roles of the various participants typically involved in the privatization process in order to devise a privatization program best suited to meeting power sector rehabilitation objectives and the needs of potential investors.

#### **5.2 GOVERNMENT**

The role of the government in privatization is to determine and implement privatization policy. This includes determining privatization objectives, identifying enterprises to be privatized, establishing the legal and regulatory framework to support privatization, determining privatization methods and time frames, establishing award criteria and awarding the winner(s) (in the case of tender privatization), relinquishing state control of the enterprise once private investors obtain a controlling interest, and ensuring that the privatization process is fair and transparent to all parties.

#### **5.3 ELECTRICITY SERVICE PROVIDER**

##### **5.3.1 Generation**

The role of the generator with respect to power sector privatization is to generate and sell electricity, usually in competition with other generators or under a performance-based regulatory system.

In centrally planned economies, or in vertically integrated monopolies, decisions about the location and nature of generation tend to be more administratively determined. However, in a deregulated or privatized environment, a private party may buy or develop generation in accordance with their own analysis, subject of course to an appropriate licensing and permitting process.

### 5.3.2 Transmission

The role of the transmission entity, whether it is private or state-owned, is to transmit power from the generator to the distribution entity in a manner that assures maintenance of system reliability. The trend is towards privatization of transmission. Although some policymakers consider transmission to be a "strategic" asset, evidence has shown that transmission can be successfully privatized and regulated to encourage efficiency.

To ensure proper privatization of generation and distribution, it is critical that the transmission entity not have any of its own generating resources. The transmission function must provide for open access on fair and consistent terms to all parties. If the entity operating transmission also owns or operates generation assets and/or the dispatch function, there are clear potential conflicts of interest that can significantly increase the perceived risk to the investor, thereby increasing the return required by the investor.

Due to the characteristics of the sector, transmission is generally considered a natural monopoly and is therefore regulated to ensure fair pricing practices and to provide adequate incentives for efficiency.

### 5.3.3 Dispatch

The role of the dispatch function is to decide which electric generation supply options (power plants, system purchases, imports) should be called upon for supplying electricity demand in the near-term. It is very important for a privatized generation sector to be able to rely upon a professional and transparent dispatching regime. As discussed above, it is also preferable from an investment perspective to ensure that the dispatch entity has no direct ownership in transmission or generation due to the potential conflicts of interest.

### 5.3.4 Distribution

The distribution service provider is responsible for distributing power received from the transmission entity to the consumer. Frequently the distribution company has responsibility for carrying out customer metering, billing and collections.<sup>1</sup> The distribution entity is important in this regard as it is the primary entity within the power sector that interfaces with the ultimate customers.

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<sup>1</sup> In a growing number of power markets, such as the U.K. and some states within the U.S., the distribution utility does not have exclusive responsibility for customer metering, billing and collections. This function is being competitively bid to third party service providers in order to lower costs and support the development of a competitive generation sector.

## 5.4 ELECTRICITY PURCHASERS

The role of electricity purchasers with respect to privatization is to provide payments for purchased power. Obviously, these payments provide the basis for cash flow throughout the power sector. In privately owned power sectors, customer payments are a crucial factor as the amount of direct government backing is often quite limited. Unlike heavily subsidized state-owned power sectors, privately owned power sectors require customer payment in order to continue operations. Hence, it is common in privately owned power sectors for customers who fail to pay their electricity bills to be cut off from the power supply.

### 5.4.1 Industrial Customers

Industrial consumers constitute the majority of baseload demand. These customers tend to have high load factors and be relatively inexpensive to serve when expressed on a per kWh basis. It is common for this class of customers to pay the lowest rates and have significant influence directly with large electricity sellers. In most countries undergoing deregulation and privatization, there is a good case to be made to allow the large users to bargain directly for electric supply, since they presumably have the expertise and purchase volume to deal with generators directly.<sup>2</sup>

### 5.4.2 Residential Customers

Residential electric users typically have loads that fluctuate widely and tend to operate at about an average 20 percent load factor. This makes it much more expensive to serve a residence than to serve round-the-clock electric users.

A difficult issue in energy sector privatization is that the high cost of serving residences may have been formerly subsidized indirectly by industrial users or directly by government. In privatized power sectors, it is more typically the case that the cost of service tends to be better reflected in the actual retail tariffs charged to consumers. During the privatization process, this can frequently result in rate increases to residential customers. Electricity rate increases in poor countries whose citizens have become accustomed to inexpensive (or free) power frequently face strong opposition from the public and their elected representatives. Overcoming public opposition to rate increases or rate restructuring resulting from privatization is one of the largest challenges facing the potential investor and government.

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<sup>2</sup> An example of this is in Argentina, where industrial firms are free to contract directly with generators. Retail electricity prices in Argentina are a function of the country's power market and bilateral contracts between industrial firms and generators tend to be indexed to the market price.

### **5.4.3 Wholesale Power Organization**

In some markets, there is a wholesale power organization, or pool that is responsible for purchasing power from generators and selling to either consumers directly or to distribution utilities for resale. The single buyer model is a variant in which only the wholesale power organization purchases power from generators. Direct contracts between generators and distribution utilities or consumers are generally not permitted. This model can be criticized on the basis that it creates a monopsony (the purchaser) that may be immune from competitive pressures and limit the amount of competition in the power sector. It may create a strong need for careful regulation of its activities. It may also be viewed negatively by investors due to its ability to limit their access to markets for power.

### **5.4.4 Distribution Utilities**

It is quite common for distribution utilities to be the wholesale power purchaser either through a direct contract with one or more generators, or through an all-requirements contract with the wholesale power supplier (such as the entity described in 5.4.3) or both. In some markets, the distribution utility may serve as supplier for "captive" consumers who can not freely choose their supplier. Alternatively, the distribution utility may not have any purchasing responsibility for its consumers whatsoever. In these circumstances, the utility is only obligated to provide distribution of the power purchased by consumers to serve their own needs. The international trend is to permit consumers, increasingly of any size, to purchase from the supplier of their choice.

## **5.5 REGULATOR**

The role of the regulator with respect to power sector privatization is to create and maintain a stable regulatory environment with clearly understood rules and transparent decision-making processes. The regulator is typically responsible for granting operating licenses, setting transmission and distribution tariffs, ensuring open access to the transmission network, and resolving disputes.

The existence of an independent regulatory agency is one of the most important factors influencing investors' decisions about power sector privatization. Investors want assurances that any disputes that may arise over the course of their involvement in a project will be resolved according to known regulatory rules. The lack of an independent regulatory body or the existence of an ineffective regulatory body serves as a significant obstacle to privatization due to the fact that regulatory uncertainty increases investment risk. India is a good example of a country where a poorly structured regulatory process governing power sector investment has frequently resulted in diminished investor interest.

Countries with independent and transparent regulatory agencies tend to be more successful in terms of attracting private investment into the power sector. For instance, private investment in the Jamaican power sector accelerated after the creation of the independent Office of Utility Regulation. Other examples of countries which have attracted significant private investment into their power sectors following the creation of an independent regulatory agency include Pakistan (National Electric Power Regulatory Authority) and Thailand (The Metropolitan Electricity Authority).

## 5.6 INVESTOR

The role of the investor is to provide equity to a given privatization transaction. The investor is incurring a risk in investing in a given project and seeks a return on the investment commensurate with the risk incurred. The equity investor often invests between 20 percent to 30 percent of the total privatization cost. However, there are many privatizations in which the equity comprises 100 percent of the cost and then the investment is refinanced with debt after the privatized asset or utility is fully operating.

Equity can be obtained from pure financial investors, or from investors who have some other stake in the privatization such as construction companies, equipment manufacturers and fuel suppliers. Usually equity investors who consider privatization (that are not developed by themselves in-house) tend to be institutional investors, such as insurance companies, pension funds, and the unregulated subsidiaries of electric utilities. They tend to seek a rate of return ranging from under 10 percent for "home country" privatizations to 30 percent for privatizations in countries with perceived high risk. They also tend to seek investment of at least US\$ 10 million in order to justify the high cost of evaluating a complex privatization. Within this acceptable band of risk and return, it is true that risk and return are correlated. However, once a privatization has an abnormally high return, it becomes less attractive, and institutional equity investors would rather see a lower return with less risk.

For many equity investors, it is important to have an "exit strategy," referring to a means of getting out of the investment in a seven to ten year time frame, rather than holding on to the investment for the life of the privatization, which can be 30 years or longer. This can be done through refinancing, sales of a portion of the investment, or a public offering of a portfolio of privatizations.

## 5.7 LENDER

The role of the lender in terms of privatization is to provide debt financing. Terms of debt financing vary considerably and are project specific. Assuming the availability of debt financing during the process of valuation can be a mistake because it can make a flawed privatization appear to be financially viable, when in fact the debt may not be available. This is especially the case when evaluating small scale assets.

Debt is an investment with a fixed return and date-certain payback, whereas equity is an investment with a variable return. Debt financing may be issued by government or by private companies. For example, a municipal government or a private utility may issue bonds to finance a power plant. "Non-recourse" debt financing means that the lender has no "recourse" to the investor if the project should fail. The amortization, or payback of the debt, is dependent upon the stream of earnings from the specific project and there is "no recourse" to the parent investor.

It is usually a mistake to commingle an investment decision with a financing decision. In other words, the investment decision is "what" to spend money on, but the financing decision is "how" to get the money to make the purchase. However, sometimes the purchase of an asset or a company comes with a financing package that is an inseparable part of the transaction. There are many cases of generation assets purchased in Argentina and Chile in the early 1990's with little cash (US\$ 100 per kW or less) as equity investment, because the transaction involved assuming a debt obligation.

## 5.8 FUEL SUPPLIER

The role of the fuel supplier with respect to privatization is to provide fuel for power plants on a reliable, commercial, and least-cost basis. In many cases, governments own all of the readily-available fuel supply options for a private power project (Vietnam, Indonesia, Mexico). This can be advantageous if the government recognizes and takes on the fuel supply risk. But in some countries it has proven impossible to correlate the requirements of the fuel supply company with that of the electric company, even though both are government-owned.

For example, in Vietnam, discussions with several private power developers indicate that they cannot get commercial gas delivery service from PetroVietnam, and instead must install their own unloading and purification systems. The state-owned electric utility EVN insists on reliable delivery of electricity in spite of unreliable delivery of fuel from the state-owned fuel company.

Another example is in Mexico, again dealing with developers attempting to implement private power plants. Pemex, the state-owned oil and gas company, has been willing to provide fuel to private power plants for only a one year contract, but 20-year financing requires a longer commitment. As a result, the only private power seen in Mexico has been a power plant financed through a government-backed lease with no fuel risk taken by the power plant sponsor.

Two positive examples are from Pakistan and Jamaica, where the respective governments decided to make their countries attractive destinations for foreign direct investment in private power by offering investors fuel contracts between the state-owned fuel companies modeled on internationally accepted standards. As a result, both countries have attracted capital for private power plants, in spite of their weak economic status.

## **5.9 EQUIPMENT SUPPLIER**

The role of the equipment supplier, as it relates to privatization, is to supply power plant and other electric industry equipment in the case of rehabilitation. They may also become involved in a privatization as an equity investor.

The equipment supply business is very competitive and the equipment supplier frequently offers incentives such as "free" engineering consulting and financing, both on an equity and debt basis, in order to become involved in a project. Very often there will be a consortia that bids on a power contract that includes an equipment company, a fuel company, and an engineering procurement and construction (EPC) contractor. Like other participants in a privatization, the equipment supplier is taking on a broader role with more risk.

## **5.10 CONSTRUCTOR**

When privatization involves rehabilitation, the EPC contractor or builder designs the project, arranges for equipment to be bought and delivered to the site, and oversees construction required during the rehabilitation process.

In order to receive a construction contract, it is common practice to require EPC contractors to provide equity and development capital, to help prepare competitive bids to sell power, and to otherwise extend their role in a project. EPC contractors who view themselves strictly as builders and not as financing sources have lost market share to EPC contractors willing to take more risk and participate in project financing.

The EPC contractor usually carries out the rehabilitation subject to a fixed-price, turnkey contract, which means that they promise to build the plant for an agreed upon price, and to deliver a working commercial power plant by a particular date. If they are late or the plant underperforms, they may be subject to financial penalties specified in the contract.

## **5.11 MULTILATERAL AND BILATERAL ORGANIZATIONS**

Multilateral lending organizations such as the World Bank and the European Bank for Reconstruction and Development (EBRD) may advance privatization by providing both government loans and guarantees as well as technical assistance. World Bank members such as the Multilateral Investment Guarantee Agency also provide political risk insurance. While World Bank loans are only available in cases where the host country government is the borrower, other World Bank organizations such as the International Finance Company (IFC) lend directly to private companies.

One of the financial structures that may be applicable in Armenia would involve the World Bank providing a back-up guarantee to a guarantee offered by the Government of Armenia to cover payment of power purchased by Armenergo. This back-up guarantee may be necessary if the financial community does not find the Government of Armenia guarantee to be sufficiently comforting. The World Bank has issued numerous guarantees to back sovereign contractual obligations with private investors. A notable recent example is the Hub River hydro project in Pakistan where the Bank issued a guarantee covering US\$ 240 million. In addition, the Bank has offered guarantees for power projects in China, the Philippines, and other developing nations.<sup>3</sup>

The Multilateral Investment Guarantee Agency (MIGA) operates by providing insurance against non-commercial risks such as non-convertibility of currency, expropriation, war and civil unrest and non-fulfillment of contracts by the country receiving the investment. MIGA also provides consultancy services to developing member countries on how to attract foreign investment. Its purpose is to encourage the flow of foreign direct investment to its developing member countries for economic development.

Through its guarantee program, MIGA provides investment guarantees against certain non-commercial risks (i.e., political risk insurance) to foreign investors in developing member countries. The program is designed to complement national and private investment insurance schemes. MIGA underwrites directly and also cooperates with other political risk insurers through coinsurance and reinsurance arrangements to provide investors with more comprehensive investment insurance coverage worldwide.

In addition to multilateral agencies, numerous bilateral agencies such as the Overseas Private Investment Corporation and the U.S. Export-Import Bank facilitate investment in emerging markets.

The Overseas Private Investment Corporation (OPIC) assists American investors through four principal activities designed to promote overseas investment and reduce risks. OPIC provides financing of businesses through loans and loan guaranties, support for private investment funds which provide equity for U.S. companies investing in projects overseas, insurance for investments against a broad range of political risks, and outreach activities designed to inform the American business community of investment opportunities overseas. Currently, OPIC programs are available for new and expanding business enterprises in some 140 countries and areas worldwide.

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<sup>3</sup> The World Bank Guarantee: Catalyst for Private Capital Flows, Project Finance and Guarantees Group, Resource Mobilization and Cofinancing, 1996.

The role of the U.S. Export-Import Bank (Ex-Im) is to provide guarantees of working capital loans for U.S. exporters and to guarantee the repayment of loans, or make loans to, foreign purchasers of U.S. goods and services. The Ex-Im Bank also provides credit insurance that protects U.S. exporters against the risks of non-payment by foreign buyers for political or commercial reasons. The Ex-Im Bank does not compete with commercial lenders, but assumes the risks commercial lenders are unwilling to accept. It must always have a reasonable assurance of repayment.

### **5.12 LEGAL ADVISOR**

The legal advisor to the government may assist in the preparation of legislation allowing the government to proceed with privatization, including revisions to existing laws on property ownership and corporate governance, as well as legislation governing the privatization process, such as the creation of government institutions responsible for developing and implementing privatization policy.

Also, the legal advisor will provide advice about the power sales contract and other key documents such as the fuel supply contract, construction, operation and maintenance contracts, insurance, and financing documents that may apply in a privatization.

### **5.13 ACCOUNTING FIRM**

The primary role of an accounting firm with respect to privatization is to prepare an enterprise's financial, accounting, and reporting systems in order to conduct enterprise valuation so that investors have confidence in the financial state of the enterprise offered for sale.

The accounting firm standardizes and presents the enterprise's financial information in a format that is universally accepted by the financial community. The accounting firm makes an audit of a company's financial condition and expresses its opinion that the published financial statements present fairly the financial condition of a company. Standardized accounting information helps to reduce investor's perceived risk and should lower the investors' cost of capital and required return on investment.

All of the privatizations completed using an initial public offering (as described in Chapter 2) had such an opinion, which was done at significant expense and prior to any guarantee that the privatization would be successful. Privatization undertaken by a strategic investor may require a less formal and thorough audit and opinion but the process will be similar.

Accounting firms sometimes also offer advice on privatization, which can naturally evolve out of an auditing assignment that involves detailed scrutiny and analysis of a state-owned enterprise's financial record.

### **5.14 INVESTMENT BANK**

The role of the investment bank is to advise on public issuance of stock, pricing, corporate structure, underwriting and marketing of shares, and in the case of an IPO, preparation of the IPO prospectus and evaluation of bid proposals. The investment bank helps attract capital from other investors and does not invest its own equity. It also issues and underwrites debt associated with the privatization transaction. To underwrite means that the investment bank agrees to provide financing to a company or government from the issuance of securities of debt or equity, and that if the offering were to fail in the amount raised or price achieved that the investment bank, acting as underwriter, will buy the securities for its own account.

The investment bank is typically compensated through a “success” fee based on a percentage of the privatization transaction. It is common for a success fee to be one percent of the total transaction and many investment banks only become involved in transactions above a certain threshold (e.g., a minimum transaction may be in the range of US\$ 300 to US\$ 400 million). The investment bank’s client is generally willing to pay the success fee on the assumption that the investment bank will add value by attracting investors and raising the transaction price.

### **5.15 PUBLIC RELATIONS FIRM**

The role of the public relations firm is two-fold. The primary objective is to engender political and popular support among stakeholders in the privatization process. Second, the public relations firm develops interest in the pending privatization among the investment community. The communications task is to educate the public and key constituencies about the nature and purpose of privatization and how it will affect them.

### **5.16 SUMMARY**

The participants and their roles in a privatization vary depending on the characteristics of the asset to be privatized, the method of privatization, and the economic and political considerations of the country in which the privatization is taking place. The basic relationship between risk and return, supply and demand, and credit analysis apply universally to privatization, regardless of the specifics of an individual privatization transaction. It is important for governments embarking on privatization programs to carefully consider the roles and responsibilities of the various parties involved in order to maximize the potential benefits to be gained from the privatization process.

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## CHAPTER 6

### ARMENIA'S ECONOMIC ENVIRONMENT

#### 6.1 INTRODUCTION

This chapter describes Armenia's economic situation and its relation to power sector privatization. It discusses how economic trends influence privatization transactions and reviews the status of various economic and legal factors in Armenia.

#### 6.2 BACKGROUND

The Armenian economy, which had been heavily integrated into the Soviet economy, underwent a severe contraction from 1989 through 1994 as the government introduced economic reform measures aimed at moving from a centrally-planned to a market-based economy. The collapse of export markets and blockades imposed by neighboring countries severely curtailed economic activity. Over the course of Armenia's economic transition, economic output and wages dropped dramatically as inflation, unemployment, and government debt rose.

Armenia has made significant progress on economic reform over the past two years and the reform measures are beginning to result in a more favorable economic outlook. According to the Ministry of Economy,<sup>1</sup> key indicators such as gross domestic product (GDP) have increased in 1995.<sup>2</sup> Per capita GDP was approximately US\$ 533 in 1996.<sup>3</sup> While this is certainly a positive development, the growth in the economy was measured relative to the economic collapse of the previous years in which the officially-reported GDP dropped approximately 75 percent from its peak in 1991.<sup>4</sup> More than 45 percent of the government's 1996 US\$ 330 million budget was financed by foreign assistance<sup>5</sup> and the 1996 budget deficit was estimated at 7.7 percent of GDP. The country faces severe economic problems in terms of foreign debt, a contracting industrial base, and low wages. According to Business Central Europe, the average monthly wage in Armenia is US\$ 22, which places Armenia in the bottom third of FSU countries in terms of officially-reported per capita wages.

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<sup>1</sup> Current Political and Economic Situation in the Republic of Armenia, Ministry of Economy, Foreign Aid Coordination Center, March, 1997.

<sup>2</sup> The International Monetary Fund estimates the economy grew 6.9 percent in 1995.

<sup>3</sup> BISNIS report from U.S. Embassy in Armenia, February 24, 1997.

<sup>4</sup> World Bank World Tables, 1995 Update.

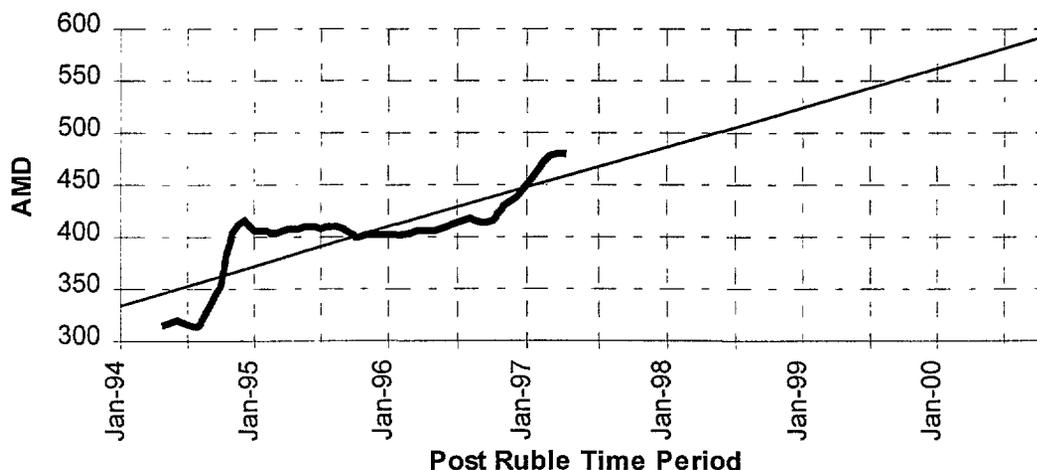
<sup>5</sup> According to the 1996 Country Commercial Guide for Armenia, prepared by the U.S. Embassy in Armenia, from 1993 to 1996, Armenia received approximately US\$ 500,000,000 in loans from the IMF, World Bank, EBRD and other institutions and countries.

The economic future of a country depends largely on the structure and management of the economy. Economic growth is closely related to the export sector, as exports result in foreign exchange earnings, which typically play a critical role in enabling a country to meet its external debt service requirements. Armenia has relatively few exports and this has complicated resolution of its debt situation.<sup>6</sup> The country does not have a credit rating, which limits both the type of investors willing to consider the country and the government's ability to guarantee payments by state enterprises. Foreign investment to date has been relatively modest, totaling approximately US\$ 34 million in 1996. Given these conditions, Armenia's economic environment is considered poor by institutional investors, and, as a result, Armenia is less comparatively attractive to investors than countries offering better growth prospects.

### 6.2.1 Exchange Rate

Foreign exchange fluctuations and currency devaluation pose significant risks for foreign investors. The exchange rate of the dram relative to the US dollar has shown a dramatic increase, from approximately 400 to 480, during 1996. This trend in devaluation of the dram could serve as a potential obstacle to power sector privatization to the extent that foreign investors would be uncomfortable with a dram-based cash flow that did not address the risk of further devaluation. Exhibit 6-1 shows a historical record and a simple future projection of the dram/dollar exchange rate.

**Exhibit 6-1**  
**AMD/USD Exchange Rate**



Source: Armenian Central Bank

<sup>6</sup> In 1996, Iran overtook Russia as Armenia's leading trading partner.

Private power investors consider a time frame of 15 to 20 years in their investment analysis. The possibility of further devaluation will certainly factor into the investor's thinking when considering investment with a dram-based cash flow, which could result from the sales of electric power to consumers.

There are a number of mitigating practices to guard against yield deterioration due to devaluation, such as dollar-denominating the power sales, indexing the price to the dollar, creating foreign exchange reserves, or by selling power to hard-currency earning power purchasers. These concerns are critical to the investor, and the government's policy should be fully formulated prior to approaching an investor.

### 6.2.2 Taxes

Foreign investors are subject to general tax provisions specified by Armenian law. Joint ventures between foreign and local Armenian entities are entitled to a two year tax holiday and can deduct 50 percent of their tax liability from the third through the tenth year of operation if the foreign investor's ownership share is more than 50 percent.<sup>7</sup>

Armenia's tax regime and customs duties are generally favorable to foreign investment. The law prohibits discrimination against foreign investors and protects investors for a period of five years against subsequent legislative changes that may affect their business. The taxation system is based on the Law on Taxes and Duties, which identifies 14 different taxes, including profit tax, income tax, value-added tax, excise tax, land tax, property tax, social security tax, and local and other taxes.<sup>8</sup>

### 6.2.3 Legal and Regulatory Environment

Armenia's legal and regulatory environment shows both positive and negative signs with respect to privatization. The legal framework for US foreign investment is governed primarily by the 1994 Law on Foreign Investment and the Bilateral Investment Treaty signed by the US and Armenia in 1992. On the positive side, Armenian law provides fairly strong guarantees against nationalization, confiscation and profit repatriation.<sup>9</sup> The government, however, has been slow to implement a legal and regulatory environment conducive to power sector privatization.

The creation in April, 1997 of the Energy Commission and its codification in the June, 1997 Energy Law, is a positive development. It is now important for the Commission to establish itself

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<sup>7</sup> According to the 1996 Country Commercial Guide for Armenia, prepared by the U.S. Embassy.

<sup>8</sup> Based on a review of the Law on Taxes and Duties and adapted from the 1996 Country Commercial Guide for Armenia, prepared by the U.S. Embassy.

<sup>9</sup> Banking Services in Central Asia and Transcaucasia, Euromoney, April, 1997.

as an independent agency and exercise its rulemaking authority in accordance with its mandate. One problem that the Commission and other regulatory agencies in Armenia face is the lack of administrative law. Other legal deficiencies such as a lack of case law, the lack of a system to disseminate new laws, and the lack of a judicial review process, are all impediments to privatization. As an intermediate step to a satisfactory legal environment, investors may compensate for the deficiencies in Armenia's legal system through contract provisions for international arbitration.

#### **6.2.4 Infrastructure and Services**

Infrastructure, such as phone service and transportation, figure into investors' decision-making. To the extent that infrastructure is undeveloped or inadequate, it may raise the cost of doing business in a country. At present, Armenia's infrastructure is comparable to infrastructure found in other emerging markets. Domestic phone service is of poor quality and often unreliable. International phone service is available, but relatively expensive. Public transportation within Yerevan is readily available, but many of the roads within the city and in outlying areas are in disrepair. Air travel to Armenia, while inconvenient, is accessible from many international airports in the FSU and Europe.

Travel time to the project site is important, as is the investor's ability to communicate with the local project staff, government officials and local partners. For example, Ogden Environmental Services of Virginia decided to invest in a Costa Rica hydroelectric project, in part because they could be at the project in eight hours from their headquarters. Likewise, TECO Energy of Florida invested in Honduras in part due to its geographic proximity. In contrast, an executive from a Singapore company that recently visited Armenia immediately cited the airline service and airport customs time delay as detractions to potential investment.

#### **6.2.5 Political**

Some observers consider that Armenia's Constitution does not provide enough of a balance of powers among executive, judicial and legislative branches of government. The 1996 Presidential elections were not considered to be both "free and fair" by some observers and from an investor perspective this raises the issue of a subsequent administration repudiating agreements negotiated at present. Regardless of the actual chance of that happening, the experience of Enron in India with the Dabhol project raises this issue to a high degree of interest for investors.

#### **6.2.6 Geographic/Geopolitical**

Clearly, investors will consider relations between Armenia and Azerbaijan to be a risk factor for investing in Armenia. The increasingly important trade relations with Iran need to be carefully orchestrated in the context of Iran's relations with the international community. Political unrest in neighboring countries such as Georgia and Chechnya may also be factored into the risk analysis for Armenia.

### 6.3 ECONOMIC FACTORS AND POWER SECTOR PRIVATIZATION

Investors considering power sector privatization have a wide variety of countries and assets from which to choose. A review of more than 200 power sector investment transactions involving of strategic investors shows that only a limited number of deals were carried out in countries comparable to Armenia's overall economic status.<sup>10</sup> Conversely, 180 electric sector deals were done in countries with investment grade ranking.

Of course, there are multiple reasons for investor interest in a given country and economic statistics only explain part of the interest level. Small and relatively poor countries such as Bolivia and Honduras have been able to attract strategic investors despite poor economic conditions. Still, a common characteristic among countries with significant utility merger and acquisition and strategic investor activity is that these countries have well-developed economies and a relatively high GDP in absolute terms and on a per capita basis.

A potential investor will closely analyze the economic environment in the country, including opportunities for electricity exports. An increasing trend in electric power investing in the last two to three years is the decreasing dependence on contracts to support financing and the increasing dependence on open markets. This trend makes the economic analysis of the country even more critical.

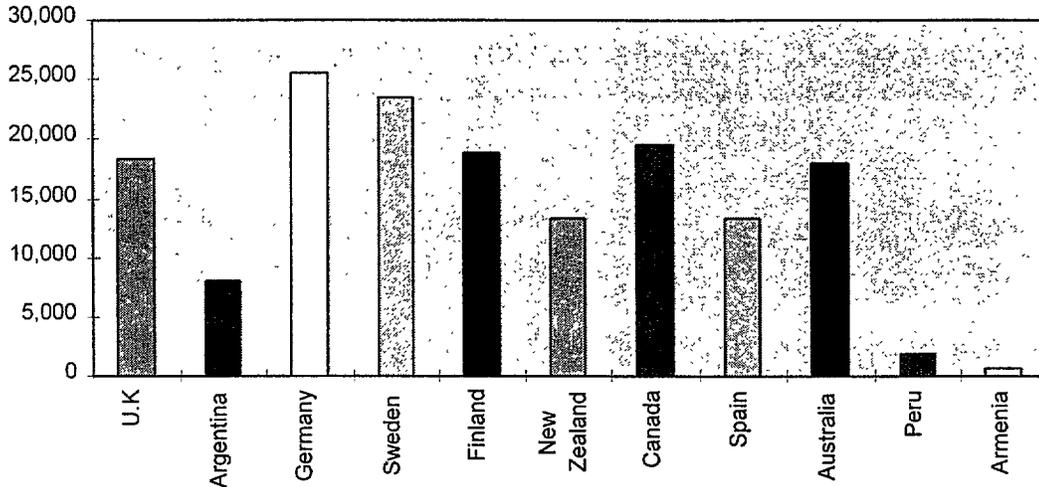
One of the most important indicators of a country's economic risk is the GDP. Exhibit 6-2 compares Armenia's per capita GDP with that of the top ten countries in terms of utility M&A transactions.<sup>11</sup>

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<sup>10</sup> Securities Data Corporation Utility M&A database.

<sup>11</sup> Comparative statistics were not available for per capita GDP post 1994. Armenian government statistics indicate an increase in GDP in both 1995 and 1996, which, if accurate, would raise Armenia's profile in terms of the types of investors it could realistically attract.

**Exhibit 6-2**  
**Comparison of GDP in Countries**  
**Most Active in Power Sector Deals**



Source: Based on Securities Data Corporation 1997 data.

Obviously there is a fair degree of variability in per capita GDP among countries that have attracted significant utility M&A activity. While some utility M&A/strategic investor deals have been successfully carried out in countries with less favorable environments such as Namibia, it is clear that the majority of transactions have occurred in developed countries and emerging markets with strong economic growth that have implemented investor-friendly policies.

Few transactions have occurred in countries with poor economic prospects and unclear legal and regulatory frameworks. By way of comparison, per capita GDP in the U.K. in 1994 averaged more than US\$ 17,500, compared with less than US\$ 600 for Armenia. In fact, the per capita GDP in 1994 was more than US\$ 12,500 for eight of the countries shown in Exhibit 6-2. This comparison is not made to suggest foreign investment is contingent on high GDP. Rather, it merely serves to illustrate the relationship between the two. The two countries with low per capita GDP, Argentina and Peru, were still able to attract investors' attention given that both countries had strong prospects for economic growth.

#### 6.4 SUMMARY

The positive recent trends in the Armenian economy should help entice investor interest in the power sector. These trends alone, however, will not convince investors to choose Armenia over competing investment opportunities. Investors will compare Armenia to other countries that are competing for foreign direct investment and any economic analysis needs to demonstrate why the risks of Armenia are compensated by the investment returns in comparison to that found in other countries. At present, Armenia's economic situation precludes it from attracting the more risk averse investors and limits the relevant types of privatization methods. The recent gains in 1995 and 1996 make it more plausible than before to invest in Armenia, but other countries' economies and risk status are better by comparison. In order to increase the level of foreign investment, Armenia needs to do more in terms of regulatory and legal reform as well as investment promotion. The next chapter provides a series of recommendations, adoption of which should increase the likelihood of investment in Armenia at reasonable investment terms.

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## CHAPTER 7

### RECOMMENDATIONS FOR PRIVATIZATION

#### 7.1 BASIS FOR RECOMMENDATIONS

This chapter presents the project team's recommendations for power sector privatization in Armenia. The recommendations are based on a number of assumptions.

- ▶ International investors aware of the environment in the Republic consider investment in Armenia as highly risky for several reasons:
  - Armenia has no credit rating and no commercial borrowing capability;
  - Armenia ranked in the bottom third of countries (its actual rank is 141) in a recent *Euromoney* magazine country-risk ranking;
  - The officially-reported GDP is US\$ 680 per capita and economic growth is modest;
  - Per capita debt is the highest among the Republics of the Former Soviet Union;
  - Local bank interest rates for local currency deposits are quoted at 3 percent per month; dram loans are available at 6 percent, subject to 100 percent overcollateralization;
  - The dram is experiencing modest devaluation; it has declined in value about 20 percent in the last year (500 drams per US dollar in August, 1997 versus 395 drams per US dollar in July, 1996); and,
  - Compared to other destinations for foreign direct investment that are somewhat risky (China, India, Brazil, Indonesia), Armenia lacks population size and natural resources that are often a factor in attracting investment interest.

- ▶ With respect to power sector investment in Armenia, the reasons for investors' risk perception and relative unattractiveness of Armenia include:
  - Fuel disruption possibility due to the regional political situation;
  - Lack of creditworthy power purchasers, especially the state utility Armenergo;
  - No successful completion of a foreign investor funded project, although several have been discussed and debated over the past several years including development of the Loriberd/Shnokh and Jradzor sites. Also, the failure to complete the Hrazdan 5 project does not reflect positively;
  - Collection and settlements procedures and available financial statistics are inadequate to justify investment;
  - Lack of government policy about extension of guarantees that are commonplace in countries implementing private power;
  - The frequently stated government desire to construct a new nuclear plant; and,
  - Lack of confidence in the privatization process and no clear consensus on privatization goals at this time. Differing and conflicting opinions have been voiced by various government officials about the purpose of energy sector privatization.

The perception that private investment in the Armenian power sector is viewed by the investment community as highly risky was confirmed through recent discussions with a wide variety of power project investors and developers.<sup>1</sup>

Certain factors, such as the country's current macroeconomic and geopolitical conditions, increase the perception of power project risk and act as a deterrent to investment. These factors, however, tend to be beyond the control of power sector policymakers to address and are therefore not discussed in this report. The discussion is limited to those factors that can be directly influenced by Armenian energy policymakers.

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<sup>1</sup> A senior delegation of Armenian government officials recently participated in a USAID-sponsored, US-based Armenian Power Sector Investment and Privatization Promotion Tour. During the course of this tour, the delegates met with numerous power project developers, investors, lending agencies, and rating agencies, who universally expressed the view that any form of investment in Armenia is regarded as highly risky. Standard & Poor's, for example, indicated that it had not rated Armenia. S&P's policy prohibits rating a state-owned enterprise more favorably than the rating of its country of origin. Therefore, no state enterprises in Armenia, including Armenergo and the Hrazdan Thermal Plant, may receive a credit rating from S&P until the government itself is rated. (The importance of a favorable rating is that it provides assurance to investors, thereby broadening the rated firm's ability to mobilize capital.)

In light of these conditions and given the nature of the international investment community, it is of fundamental importance that policymakers in the Republic try to improve the investment environment. Increasing the role of the private sector is critically important and is the only option available that can meet the energy sector's rehabilitation needs. The recommendations provided below are all designed to improve the likelihood of attracting investment into the Armenian power sector at a reasonable cost of capital.

## 7.2 PRECONDITIONS TO PRIVATIZATION

The following preconditions are required to increase the likelihood of successful investment attraction into the Armenian power sector. Each recommendation is designed to reduce investor risk and uncertainty, thereby encouraging investment into the Armenian energy sector.

**Recommendation:** The government should determine and clearly announce its power sector privatization objectives.

The government needs to decide what it hopes to accomplish as a result of power sector privatization. Specifically, the government should decide whether its main priority is: (1) to attract responsible investors who can provide private capital to rehabilitate privatized assets; or, (2) to maximize proceeds from the sale of power sector enterprises. The recent small hydropower privatization process revealed a lack of clear consensus as to the actual objectives the government and its ministries hoped to achieve.

Two factors argue for a privatization policy that emphasizes sector rehabilitation over maximization of sales proceeds. First, the power sector is in dire need of investment well beyond the scope of what the government or bilateral/multilateral lending agencies are able to fund. Second, the high degree of risk associated with power sector investment in Armenia suggests that under current economic conditions and under the existing legal and regulatory framework, investors will have no economic basis to justify sizeable investment in sector assets. Without any reasonable wholesale tariff that can be counted upon, and without any indication of a willing and creditworthy power purchaser, cash proceeds realized from the sale of electric energy assets will be very low and the cost of capital will be very high.

Therefore, the project team recommends that the government and its ministries adopt a privatization policy and process that focuses on sector rehabilitation rather than the up-front purchase price for the assets.

**Recommendation:** The first small hydropower privatization effort must be successfully completed. It is critically important that the private owners be paid in full in a timely fashion in accordance with the power purchase agreements.

The first round of the small hydropower privatization is partially complete although power purchase agreements and licenses have not yet been approved. This effort will be watched very carefully by the investment community. If the investors are being seen as treated fairly, this should provide a positive impetus for additional investment. However, if the investors are seen to suffer, efforts to attract foreign investment may be damaged not just in the energy sector, but in the entire economy. These risks include: (1) failure of Armenergo to take and pay for the purchases as agreed to in the power sales agreement; (2) too low of a tariff being ultimately approved by the Commission; (3) interference in the management and operation of the facility by other parties; and, (4) Commission approval of license provisions in serious conflict with international practice.

Based on the track record to date regarding privatization, a potential investor considering the larger assets of Armenergo, the larger generating stations, and local distribution, may quickly conclude that Armenia is not yet ready for serious consideration. Therefore, a rapid conclusion to the small hydropower privatization process should take place so that investors can see tangible successes in energy privatization, albeit relatively small ones.

More information on each recommendation and the full review of the first round of small hydropower privatization can be found in the report entitled *Evaluation of the Pilot Privatization of Small Hydropower Projects* included in Appendix A.

**Recommendation:** Several changes should be made to the second small hydropower privatization effort based on the results seen from the first round. These changes include better advertising, more comprehensive information and removal of some of the uncertainties found in the first round.

Specific recommendations to improve the second round of the small hydropower privatization effort include:

- ▶ Better promotion in foreign trade publications and better follow-up with interested foreign investors. In the first round, one foreign investor considering making an all-cash bid received no response to its inquiries. Another company interested in the privatization found out about it too late to respond.
- ▶ Key points should be described up front, such as: (1) the power market price to be offered; (2) contract and license provisions; (3) the cost of water use; (4) the transmission price and ability to wheel to third parties; (5) hydrology information on the plant; (6) any financial information pertaining to the facilities; (7) water supply source; and, (8) any other conflicting requirements for water use.
- ▶ Clarify the rules such as whether foreign investors can use vouchers and the criteria for determining the winning bid.

- ▶ Provide more comprehensive technical information known to be available including historical production and hydrology, project drawings and the name of the equipment manufacturer along with the equipment specifications (e.g., model number).
- ▶ Determine and announce prior to the tender the wholesale power rate to be offered and whether the buyer must sell to Armenergo. It is recommended that the same wholesale power rate be offered to all of the upcoming small hydropower privatization projects even though the projects are of a different size and the rehabilitation requirements are not the same. These differences will be reflected in the up-front purchase price and the process need not be burdened by having different tariffs for each facility.

**Recommendation: The process of financial settlements in the electric power sector presents serious problems and will need to receive the government's full attention.**

The current process for collection and disbursement of monies in the electric power sector is in need of comprehensive review and overhaul. There is a lack of transparency that may seriously jeopardize investor confidence in the electric power sector. Although end-user collections may have increased, this alone is not sufficient for investors. It is necessary to demonstrate that generation enterprises are receiving fair and predictable revenue streams in accordance with clearly established procedures for money collection and disbursement. A recent inquiry from a foreign investor active in Kazakstan, Hungary and other countries demonstrated this concern. Although end-user collections have risen, the investor was concerned about the growing debt seen in the generation enterprises and the apparent lack of a clear procedure for allocating funds under shortfall conditions.

**Recommendation: A clear policy on guarantees for power purchase obligations must be established prior to considering generation privatization.**

Countries with an investment environment similar, or in many cases superior, to Armenia's often offer government guarantees. To date, Armenergo has not demonstrated an ability to raise private capital or attract investment. It has not been rated by a rating agency and suffers from exorbitant debt and lack of creditworthiness. Given these factors, it is unlikely that investors will have faith in Armenergo's ability to honor payment provisions specified in the power purchase agreement.

Therefore, the government should guarantee to make payments on behalf of Armenergo to the generators in cases where Armenergo fails to fulfill its payment obligations. If the government lacks the creditworthiness to provide investor confidence, then the government should seek counter-guarantees from multilateral institutions such as the World Bank; it is not clear whether such counter-guarantees are in fact available.

In some countries, an escrow account has been used to ensure that payment obligations are met. The escrow account concept works in the following manner. Payments for electricity from larger industrial consumers are directed to a bank escrow account rather than through the normal financial channels. The private investor is then paid for the power consumed by the customer directly from this account rather than being required to work directly with the state utility which may lack creditworthiness. This approach has been effective in providing greater assurance of payment for the project investor.

**Recommendation: Debt restructuring must be addressed.**

The energy sector continues to accumulate a large amount of debt. The power sector owes the gas industry in excess of US\$ 75 million. The distribution enterprises continue to suffer from the lack of restructuring and reform in other subsectors of the economy, especially the water sector, which is heavily indebted to the distribution enterprises. Due to continued non-payment, enterprises such as Nairit Chemical are still causing the power sector to accrue debt.

The restructuring of the enterprise debt must be clearly addressed by the government. This debt should be either: (1) written-off; (2) reassigned as appropriate; or (3) left with the enterprise and specifically addressed during the privatization process.

**Recommendation: Permit and encourage high level contacts for foreign investors.**

Armenia's neighboring nations are aggressively courting the international investment community. For instance, President Aliyev of Azerbaijan has stated his willingness to meet with any potential foreign investor. This high level of exposure clearly demonstrates the support of the highest levels of the governmental structure to attract investment into the country. To demonstrate a serious commitment to attract investment, the Armenian governmental structure should give similar exposure and access to foreign investors.

**Recommendation: Several features of the recently-passed Energy Law need amending in order to improve the investment environment.**

Although the successful passage of the Energy Law is an important step, there are three areas of the Energy Law that need modification in order to help attract investment. First, the Law places the Energy Commission in the position of establishing annual production quotas for generation enterprises. Production quotas are a command-and-control mechanism inconsistent with moving the sector towards improved commercialization. This requirement, if fully enforced by the Commission, may hinder investor interest in the generation sector. An amendment should be made to eliminate this provision of the Energy Law.

Second, the Law does not provide for independent financing of the Energy Commission. State budget funding of the Commission increases the perceived regulatory and political risk of investment in Armenia. The Commission plays an important role in attracting investment and to the extent its funding mechanism creates a situation in which the Commission can be subjected to political pressure, a potential investor will discount the independence and role of the Commission. It is recommended that the Energy Law be amended, or new legislation introduced if necessary, to permit a periodic license fee to be assessed on all licensees for the purpose of funding the Commission's operation.

Third, the Energy Law provides that the government must develop a formula for allocation of funds among the various enterprises in the power sector during periods of financial shortfalls (i.e., collections below 100 percent). It is envisioned that the formula will work as follows: if a distribution enterprise collects eighty percent of the money it is owed from consumers, it must pay eighty percent of the amount it owes to Armenergo. Armenergo will then pay generation enterprises the weighted average collection rate of all of the distribution enterprises. This provision was introduced in order to increase the amount of cash flowing to Armenergo and the generation enterprises. Although it is aiming for a noteworthy objective, this provision may hinder privatization of the generation subsector. Potentially novel approaches to ensure payments to privatized stations (e.g., escrow accounts) appear to violate this article of the Energy Law. This provision should be removed from the Energy Law. Although the lack of cash flow to generation is a serious problem, it should be addressed through the development of transparent settlement procedures, rather than through the use of a collections-based figure applied to all licensees irrespective of private or state-ownership.

### 7.3 SPECIFIC PRIVATIZATION APPROACH RECOMMENDATIONS

The following describes the approach recommended to be taken in the privatization of the electric power sector.

**Recommendation: Power sector privatization should be carried out by the strategic investor method.<sup>2</sup>**

The strategic investor method is the most appropriate privatization method for Armenia to attract the expertise and capital required to rehabilitate power sector enterprises in the generation and distribution subsectors. This approach is recommended for the following reasons:

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<sup>2</sup> The choice of privatization method is of secondary importance in the privatization process. Prior to determining what privatization method to employ it is essential to resolve the outstanding privatization policy and power sector restructuring issues. Failure to first address these issues will adversely affect privatization efforts, regardless of the method used.

- ▶ It has been used successfully in similar investment environments;
- ▶ It can attract additional management and technological expertise;
- ▶ It permits a more highly focused approach to help bring about rehabilitation of the electric power sector.

This method is superior to other methods such as vouchers or management buy-outs in terms of attracting potential investors with the technical and financial resources to carry out enterprise rehabilitation.

Exhibit 7-1 demonstrates some of the reasons why the strategic investor approach, relative to other options, is recommended.

**Exhibit 7-1  
Comments on Privatization Methods**

Privatization Method	Benefits for Power Sector Privatization in Armenia
Strategic Investors through Tender (Pay-as-you-go)	Brings technical and management expertise and capital required to rehabilitate the power sector. Transfers investment decisions to the private sector with reasonable transparency. Can work well in situations where the institutional framework is not yet fully developed.
Initial Public Offering	This approach is best suited for enterprises in which investor interest is high. Preparation and promotion of an IPO is costly and time-intensive. This approach is inappropriate under present conditions.
Voucher Privatization	This approach does not provide management or technical expertise or capital required to rehabilitate the power sector. However, it may be suitable for small privatization by labor collective, especially to boost public perception of, and support for, privatization.

Specifically, a two-stage tendering process is suggested. The first stage consists of an announcement and publication of qualifications for tendering. This permits potential investors to express their interest. It also permits the development of a “short list” of investors who will be invited to tender. The second stage includes the issuance of the request for proposals and the submission of bids by the short-listed investors. This approach maintains transparency over the process and ensures that only reputable investors offering strategic expertise required for the energy sector are included in the tendering.

**Recommendation:** A “pay-as-you-go” approach should be permitted and most likely will be required due to the transitory state of institutional reform in the Republic.

Pay-as-you-go privatization is a variation on the strategic investor method in which the investor offers a nominal initial payment for the asset and agrees to a schedule of investment contingent upon specific government and regulatory actions. Usually, these investment commitments can be tied to modification of wholesale tariffs. The advantage of this approach is that it has the potential to attract reputable investors since the terms of the investment serve to mitigate risk to the investor. It is also ideal for an investment environment, such as Armenia’s, in which the institutional reform is not yet complete. It should also be noted that this approach requires very careful drafting of the legal arrangements involved; a pay-as-you-go agreement should not be a vehicle for an investor to back out of an investment commitment unless the government, Energy Commission or other party has not achieved a specific reform target by a specific date.

**Recommendation:** A controlling ownership share of generation and distribution enterprises should be offered.

At a minimum, the investor should have a clear controlling majority in the ownership of an enterprise offered for privatization. Under Armenian law, a 76 percent majority is required for approval of any issue put before a company’s board of directors. Although deals have been consummated internationally with much lower levels of ownership, those deals have generally been in countries characterized by much better investment environments than Armenia, including clear and stable legal, regulatory and political systems. This is not the case in Armenia and to restrict private ownership to a non-controlling minority share may seriously jeopardize the potential commitments received from investors or even rule out altogether certain credible investors.

**Recommendation:** Initiation of the process of privatization should begin as soon as possible and should focus on both generation and distribution enterprises.

Although attention is often focused on privatization of generation and investment attraction, in Armenia’s situation it is the distribution sector that can benefit equally (and probably even more so) from privatization. Based on the review of the situation in Armenia, it is the project team’s opinion that the collection problem can only be solved through privatization of a majority ownership share with full operational and financial control being given to the acquiring party. It is the project team’s recommendation that privatization of distribution and generation occur simultaneously. If it is necessary to pursue one subsector ahead of another, then the distribution subsector offers the greatest potential benefit from immediate initiation of the privatization process; nonetheless, the project team recommends that at least one distribution and one generation enterprise be prepared for privatization.

Starting with distribution privatization presents a viable method for improving the cash flow from the enterprise. With improved cash flow from even a single regional utility, other options become available that can assist with the privatization of generation. For instance, the cash flow from a single large privatized distribution enterprise can be escrowed into a private account to provide assurance of payment to a privatized generator, thereby removing the need for a government guarantee. Distribution privatization is critical for the financial viability of the entire power sector and will make additional privatization efforts easier.

**Recommendation:** The recommended sequencing of enterprises for privatization is as follows: the Yerevan Distribution Company and the Yerevan Thermal Power Station should begin as soon as possible. At the same time, the government should remain open to considering privatization of other facilities when interest is expressed by investors.

Several factors urge consideration of the Yerevan Distribution Company (YDC) for early privatization, including the company's visibility and the fact that it represents the majority of the nation's electric power consumption. Further, the YDC appears to be most well-positioned among the distribution enterprises to begin the privatization process as its organizational structure is fairly well established due in large part to the fact that it has historically been operated as an integrated utility. Relative to the other distribution utilities, there is more information readily available including an asset inventory, an analysis of rehabilitation requirements, some restated financial records and business planning documents. The YDC is also larger in terms of energy sales than the other ten distribution utilities combined. It is of a size and scale that is more likely to attract investor interest.

At the same time, it is recommended to also pursue privatization of at least one generation enterprise. Upon review, it is recommended that the Yerevan Thermal Power Station be considered even though the project team recognizes that fuel reliability concerns may complicate privatization of this plant. Although the fuel supply issue may be difficult to overcome, there are a number of positive factors that make the plant a good candidate for privatization, including: (1) it is located close to Yerevan; (2) a fair amount of information on the station is available; (3) it has already been visited by some foreign parties for investigation of rehabilitation options; (4) the debt situation with the plant is manageable; and, (5) the possible privatization of the nearby Nairit Chemical Plant to a foreign investor may present options for hard currency proceeds from heat sales. Starting with the Yerevan Thermal Power Station will also be useful given that it will provide an opportunity for the government and its ministries to work through some of the same difficulties that will confront the privatization of the Hrazdan 5 unit following its completion. These challenges include:

- ▶ Proper marketing of the station to attract strategic investors;
- ▶ The criteria for qualifying the strategic investor and for evaluating a proposal;

- ▶ Fuel supply and price risks and how these risks are best allocated;
- ▶ Pricing and contracting for heat and power sales from the station;
- ▶ Labor arrangements with existing staff;
- ▶ Handling of preexisting enterprise debt and whether such debt should be transferred to the state; and,
- ▶ Public relations to increase public support for the privatization effort.

With regard to the transmission sector, it is common in many countries carrying out power sector privatization to delay or prohibit privatization of the transmission subsector due to concerns over the sector's strategic importance and its natural monopoly structure. There are, however, many examples internationally where the transmission sector is privately owned and regulation by an energy commission is used to guard against monopoly abuse. Expanding the involvement of the private sector in transmission should at least be considered and not rejected outright. However, the project team has not developed specific recommendations at this time.

**Recommendation:** **Employee's of the enterprises should receive some limited portion of the shares to help build support for the privatization but most likely not as high as 20 percent.**

Historically in Armenia, as part of a privatization, it has been customary for the state to provide 20 percent of shares to employees of the enterprise free of charge. There are certainly good reasons justifying this step, including providing performance incentives for employees and gaining support for the enterprise privatization. In the project team's opinion, it is appropriate to offer shares to employees; however, a lower percentage of shares, such as 10 percent, can be offered if the strategic investor approach is adopted. Unlike what has been witnessed in other enterprise privatizations in Armenia, privatization through sale to a strategic investor offers a reasonably good chance that the shares will increase in value. Thus, an argument can be made that it is appropriate to provide a lesser percentage to employees due to the expectation that the shares will become more highly valued than what has been witnessed in past privatizations.

#### 7.4 ADDRESSING THE OBSTACLES TO PRIVATIZATION

Exhibit 7-2 presents some of the key obstacles to power sector privatization in Armenia and highlights how the recommendations provided in this chapter can help to address these obstacles. To be sure, there are additional obstacles to power sector privatization in Armenia. However, this list is limited to those obstacles that are of most serious concern to potential investors and which are, at least indirectly, within the control of the government, the ministries or the Energy Commission.

**Exhibit 7-2**  
**Armenian Power Sector Privatization Obstacles and Recommendations**

Obstacles to Privatization	Recommendations
<i>Economic Policy Issues</i>	
Lack of consensus in government and lack of trust among the citizens in the privatization process	Develop mission statement for energy sector privatization. Complete the first round of the small hydropower privatization in accordance with the recommendations found in this chapter. Also, implement the recommendations provided addressing how the privatization process should be revised for the second round.
Risk of foreign exchange fluctuations, customs duties, etc.	Establish, announce and honor profit repatriation, currency convertibility, and customs duties policies related to power sector investment. Also consider establishment of a privatization and foreign investment liaison within the Ministry of Industry and Trade to assist investors with resolution of problems.
<i>Regulatory Issues</i>	
Unclear settlements procedure; cash flow constraints from customers to distribution utilities to transmission and generation subsectors	Undertake interministerial review, in conjunction with technical assistance of the settlements procedures presently in place. Much greater transparency is required.
<i>Asset Related Issues</i>	
Physical condition of power sector enterprises	Be realistic about expectations of proceeds from power sector privatization. Use a strategic investor approach and be willing to adopt a pay-as-you-go agreement.
Overvaluation of assets	Use third party advisor to conduct due diligence and asset valuation. Move immediately away from the historic book value approach to valuation.
Lack of readily available financial information on state-owned enterprises	Assemble some of the preexisting information to clearly identify what is available and what is lacking. It is probably not necessary to undertake new financial analyses given that: (1) many of the state enterprises are relatively new; (2) the potential investor is probably in a better position to evaluate the enterprise.

**Exhibit 7-2**  
**Armenian Power Sector Privatization Obstacles and Recommendations (cont.)**

Obstacles to Privatization	Recommendations
<i>Sector Issues</i>	
Electric sector debt; lack of creditworthiness of Armenergo	Implement power purchase agreement between Armenergo and independent generators; permit escrow accounts and other innovative approaches to ensure revenue stream for privatized enterprises.
Lack of domestic fossil fuel, potential for fuel supply disruptions	Structure contracts not to penalize generators for fuel supply disruptions outside of their control. Government can also consider assuming the fuel supply risk.
Lack of commercial orientation within sector enterprises	Continue commercialization activities in the sector but recognize that privatization will play a key role in improving the commercial orientation.
<i>Privatization Process-Related Issues</i>	
Unclear contact information for government privatization personnel	Establish and publicize a foreign investor liaison within the Ministry of Energy. Consider establishment of a privatization web site.
Lack of transparent bid evaluation criteria	Provide better explanation regarding bid evaluation procedures and criteria as part of the bid package. The second round of the small hydropower privatization process provides an opportunity to develop an improved approach to bid evaluation. (See recommendations in Appendix a.)
Lack of full government understanding of investors' perspectives	Officials involved in the privatization process should review the evaluation of the small hydropower solicitation process and also the results of the recently-completed privatization mission to the US.
Lack of investor awareness of power sector project opportunities in Armenia	Develop and distribute high quality and realistic information on power sector enterprises to be privatized. Seek technical assistance to help. It is very important that such documents be professional and respond to specific information needs including: (1) brief description of the projects; (2) the objectives of the privatization; (3) brief description on the institutional environment; and, (4) a contact point for further information and receipt of full tender when available. Distribute press releases well in advance of the privatization offering. Additionally, follow-up with investors contacted during the recent privatization mission to the US. Also, in conjunction with professional advisors, contact potential investors and lenders and professionally manage competitive solicitations to ensure the best bids are received.

## 7.5 SUGGESTED NEXT STEPS

Exhibit 7-3 presents suggested next steps for power sector privatization and identifies the entity responsible for implementing the steps and the timeframe (these steps do not address the small hydropower privatization). The implementation schedule for these steps is quite aggressive. Although there are ways to speed up or “short cut” the process, it is difficult to do so without compromising the integrity of the privatization process.

**Exhibit 7-3**  
**Recommended Actions, Timing and Responsibilities**

Action	Timing	Responsibility
Establish a main counterpart and staff for overseeing day-to-day handling of privatization initiative. This would be similar to a project preparation unit.	Month 1	Government
Begin information collection effort to assist with: (1) development of initial proformas to better understand possible wholesale tariffs required; (2) to help prepare the investor information document designed to heighten investor interest; (3) to support development of a prospectus	Months 1 - 3	Project preparation group and technical assistance
Develop press release describing government intention on strategic investor privatization; publish in international trade press.	Month 1	Project preparation group and technical assistance
Determine the kinds of options for ensuring adequate compensation to the investor the government is willing to support. This could include government guarantees and escrow accounts.	Months 1 - 2	Government, Ministry of Energy, Energy Commission, and privatization project group with the support of technical assistance.
Prepare initial “proformas” and review of enterprises best qualified for privatization based on: investment need, project structuring considerations and investor interest	Month 1	Technical assistance
Confirm the choice of the Yerevan Distribution Company and the Yerevan Thermal Station for privatization.	Month 1	Government upon the recommendations of the project preparation group
Develop article for local Armenian news discussing the government’s intention regarding strategic investor privatization.	Month 1	Project preparation group and technical assistance
Determine debt restructuring for the enterprises selected for privatization. This step is critical in order to prepare the investor information document.	Month 2	Government and Ministries

**Exhibit 7-3  
Recommended Actions, Timing and Responsibilities (cont.)**

Action	Timing	Responsibility
Prepare investor information document to be used to increase investor awareness and interest.	Months 2 -3	Technical assistance
Develop term sheets for the legal conditions associated with the privatization including contract provisions.	Months 2 -3	Privatization project group and technical assistance.
Develop draft license for the enterprises to be privatized.	Months 2 - 4	Energy Commission with the support of technical assistance.
Determine the "threshold" wholesale power rates acceptable to the Energy Commission.	Months 2 -3	Energy Commission and privatization project group
Send the investor information document to: (1) participants in the recently completed privatization mission to the US; (2) to the embassies; (3) to the international trade press; (4) to other "targeted" audiences.	Month 3	Privatization project group.
Prepare prospectus for the enterprises to be offered.	Months 3 -5	Privatization project group with major support of technical assistance.
Complete a privatization mission to the US and Europe to market the privatization.	Month 4	Government and privatization project group supported by technical assistance.
Begin development of the investor qualification criteria for the first stage of the strategic investor privatization.	Month 5	Privatization project group with technical assistance.
Prepare investor qualification package including the steps required to prequalify for the actual tendering process.	Months 5 - 6	Privatization project group with technical assistance.
Move forward with the first stage qualification process. Submit investor qualification package to interested parties. Announce its availability through press releases.	Month 6	Privatization project group.
Complete trade mission to US and Europe to advertise the first stage qualification process.	Month 6	Privatization project group with technical assistance.

**Exhibit 7-3**  
**Recommended Actions, Timing and Responsibilities (cont.)**

Action	Timing	Responsibility
Set up "data room" in Yerevan and out-of-country (Armenian embassy in US, one European and one Asian location) to permit due diligence.	Month 6	Privatization project group with technical assistance.
Distribute copies of the prospectus to parties that expressed an interest in the offering. Publish additional press releases noting that the information is available.	Month 6	Privatization project group.
Development of tender information package and procedures.	Months 5 - 8	Privatization project group with technical assistance.
First stage expressions of interest and qualification due to be submitted.	Month 8	Investor.
Review first stage results. Determine list of prequalified bidders based on first stage. Modify prospectus and tender based on response received.	Month 8	Privatization project group with technical assistance.
Finalize tender package.	Month 9	Government upon the recommendation of the privatization project group.
Release tender to first stage qualifiers.	Month 9	Privatization project group.
Respond to inquiries, need for additional information.	Months 9 - 12	Privatization project group.
Receive tenders.	Month 12	Investor.
Evaluate the tenders on the basis of compliance with tender conditions, investment commitments and financial feasibility.	Month 12	Privatization project group with technical assistance.
Select winner and back-up candidate.	Month 12	Government on the recommendation of the privatization project group.
Negotiations with apparent winner and back-up on any remaining key terms. Signing of contracts and registration of power purchase contract by the Energy Commission.	Months 13 - 14	Government and privatization project group. Consultation with the Energy Commission will be required.

**Exhibit 7-3**  
**Recommended Actions, Timing and Responsibilities (cont.)**

Action	Timing	Responsibility
Legal registration.	Month 16	Investor with the support of the privatization project group.
Issuance of license to investor.	Month 17	Energy Commission.
Transfer of majority ownership shares to investor. Transfer management to investor.	Month 17	Government and Ministry of Energy.

## 7.6 THE IMPORTANCE OF PRIVATIZATION

Privatization has the potential to transform the Armenian power sector into a solvent, well-managed vehicle for economic growth. Successful privatization will showcase the Republic's commitment to private sector investment, positively influencing investors' perception of Armenia and helping to stimulate foreign investment into other sectors of the economy. A poorly designed privatization program, on the other hand, will not only be detrimental for the sector but may also adversely affect the overall investment and business climate by reducing both foreign and domestic investor confidence.

Through its initial economic and energy sector restructuring efforts, the Government of Armenia has demonstrated a commitment to reform. The challenge to the government now is to build on the success of its reform efforts by articulating a clear vision for power sector privatization and pursuing its vision with great resolve. In order to realize its vision, the government must determine what it hopes to accomplish as a result of privatization and then work to build consensus among the parties affected by the process. Throughout, the government must ensure that its policies are implemented in a consistent manner and demonstrate a willingness to address potential investors' needs and concerns. These are the key elements to a successful privatization program and are well within the means of the government to accomplish.

Given its implications for Armenia, the global trend towards power sector privatization is a theme that has been repeated throughout this report. Governments worldwide are demonstrating an eagerness to capitalize on the benefits offered by power sector privatization. They look at Hungary, where the strategic investor privatization attracted US\$ 1.8 billion into the power sector. They look at Argentina, Chile and numerous other cases where private capital has been successfully attracted. They look at Kazakhstan, where rapid privatization is credited with bringing about collections in excess of 90 percent at the Almaty distribution utility. And they look at Bolivia, where privatization not only accomplished the rehabilitation of the power sector but also received widespread support among its citizens. It is for these reasons that today's global

power market is characterized by an abundance of investment opportunities. Armenia is competing for investment with countries that have proven track records in power sector privatization. Therefore, Armenia's investment policy must recognize the highly competitive nature of the current market and compensate for the country's relative lack of experience by ensuring that the policy, legal and regulatory framework governing the sector is highly conducive to foreign investment.

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## APPENDIX A

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## A.1 TENDER COMMISSION DECISION ON SMALL HYDRO

20.12.96

Yerevan

With respect to the Privatization List of the 8 Small HPPs to be privatized in the first phase announced on November 8 pursuant to Section 14 of the RA State Enterprises and Unfinished Construction Sites Privatization and Denationalization Interministerial State Commission's Protocol # 43 dated October 17, 1996 the Small HPPs' Privatization Tender Commission established by the RA Government Decree # 321 dated September 30, 1996 has analyzed the HPPs privatization process and specified the specific properties of these objects for the energy system and taking into consideration:

- ▶ the requests of the numerous interested organizations and legal persons;
- ▶ the importance of the necessary advertising publications to organize and perform the competition for attraction of the strategic investors;
- ▶ the urgency of the additional time for the investment projects preparation; and also
- ▶ the fact that by now practically no investor has visited the site of any hydro power plant announced in the privatization list which caused a serious trouble for potential participants and a short period of time for tender packages submission;
- ▶ and aiming at the investors attraction as well as achieving the success and publicity of the privatization process and in accordance with the applicable laws

### DEFINES

1. Establishes the timetable for the bids (tender papers) acceptance and tender performance for the 8 HPPs:

Plant	Bids Submission Deadline	Tender Performance Date
1.Areni HPP	17.03.97	21.03.97
2.Yegeghnadzor HPP	17.03.97	21.03.97
3.Azatek HPP	17.03.97	21.03.97
4.Ijevan HPP	24.03.97	28.03.97
5.Ajrum HPP	24.03.97	28.03.97
6.Meghri HPP	31.03.97	04.04.97
7.Martuni HPP	31.03.97	04.04.97
8.Giumri HPP	31.03.97	04.04.97

2. Till January 25, 1997 to publish the prospectus for the hydro power plants: Voghchi-2, Voghchi-3, Zovashen, Armaveer, Sisian, Agarak, Jermuk, which are to be privatized through competition according to the RA Government Decree # 321 dated September 30, 1996, and to request to the RA Government for permission to make changes in the points 1.5; 2.5; 5.5; 6.5; 8.5; 10.5; 15.5 of the above mentioned decree relating to the said hydro power plants privatization respectively.
3. To address to the RA Ministry of Energy to submit to the Ministry of Privatization till February 1, 1997, the package of the valuation papers for Talin, Kamo, Aigedzor, Tsakhavan and Haikavan hydro power plants to be privatized through the competition.
4. To request the Privatization and Denationalization Interministerial State Commission to address to the RA Ministry of Communications for obtaining information required for the valuation of the Goris HPP's assets to be privatized as far as the mentioned plant is in the balance sheet of the RA Ministry of Communications.
5. To address to the Interministerial State Commission to review the privatization process of the hydro power plants Agarak and Jermuk once again and to state their position.
6. To address to the "Armaveni" Consulting Company for publication of the changed timetable of the HPPs to be privatized.
7. To create the method to determine the winner of the competition.
8. To finalize the privatization of all provided small HPPs during half of a 1997 calendar year.

## A.2 ANNOUNCEMENT OF SMALL HYDRO PRIVATIZATION

Pursuant to the RA applicable laws the hydro power plants privatization Tender Commission established by the RA Government, the Ministry of Privatization, the RA Ministry of Energy decided to postpone the timetable earlier published in the press for the bids acceptance and tender performance of the HPPs subject to the first phase privatization through the competitive bidding according to the timetable provided below. These changes in the dates are explained by the several reasons which included the requests of the numerous interested organizations, legal persons, the importance of the tender organization and performance for the small HPPs privatization process, the preparation of the investment projects, the difficulties connected with the winter period to make site visits to the HPPs, Christmas and New Year holidays, the utmost attraction of the investors and publicity as well as the ensuring of the process success.

Plant	Bids Submission Deadline	Tender Performance Day
1.Areni HPP	17.03.97	21.03.97
2.Yegeghnadzor HPP	17.03.97	21.03.97
3.Azatek HPP	17.03.97	21.03.97
4.Ijevan HPP	31.03.97	04.04.97
5.Ajrums HPP	31.03.97	04.04.97
6.Meghri HPP	14.04.97	18.04.97
7.Martuni HPP	14.04.97	18.04.97
8.Giumri HPP	14.04.97	18.04.97

### **A.3 EXAMPLE OF TENDER OFFER FOR SMALL HYDRO PRIVATIZATION**

#### **APPROVED**

By the Resolution N. 43.14 dated October 16, 1996 of Interdepartmental State Commission of Privatization and Denationalization of State Enterprises and Non-Completed Constructions Facilities Commission Chairman

---

#### **REFERENCE**

of Airum HPP to be Privatized by Tender

#### **A.3.1 General Information**

1. Name of the Enterprise - Airum HPP.
2. Address - Tumanian Region, Gravel plant workers town.
3. Legal statues of the Enterprise - Separated Subdivision of Northern Electric Networks Regional Department of ÚArmenergoÖ State Enterprise (EN SSRD).
4. The Enterprise shall be privatized under the resolution N. 321 of the Government of RA, dated September 30, 1996. The Enterprise has not undergone non-compensated partly privatization.
5. Director of Southern Electric Networks Regional Department - T. Badalyan  
Chief Accountant - R. Tamarian.
6. The Enterprise does not have any shares in the authorized capitals of other Enterprises within and out of the territory of RA.
7. Scope of activities of the Enterprise: Electricity generation.

Brief Technical Characteristics of Airum HPP: Airum HPP is located on the right bank of the river Debet, Gravel plant workers town

### A.3.2 Technical Data

1.	Installed capacity	3.028 MW
2.	Designed average annual el. generation	18.7 mln. kWh
3.	Designed output	18.6 m <sup>3</sup> /sec.
4.	Designed head	22.1 m
5.	Number of units	4
6.	HPP territory	10 ha
7.	HPP was put into operation	1957

The hydrotechnical facilities of the HPP are characterized as follows:

1. Head structures, including: gravitation spillway dam with 85.5m length and 3.635m height, surface water intake with 2 openings (2x4m), washing spillway with 2 openings (2x4m).
2. Double-stage sludge filter, with 59m length, 5.2m width. Faced with concrete.
3. Diversion with 3740m length, including: Channel with 3230m length and tunnel with 510m length and 3.6m width. Channels 3230m length, which width in the bottom varies from 2.4-6.48m. The section of it is mainly rectangular (2740m), the remaining part (490m) is trapezoidal. At the beginning of the diversion an attached spillway is located, the length of which is 110m, with 16.0m<sup>3</sup>/sec water flow.
4. Pressure basin located at the end of diversion with 26.5m length, 9m width and 4.11m depth. At the beginning of the pressure basin 52m length side spillway is located.
5. Metallic penstock in 4 lines, with 33 m length and 1.4 m diameter each.
6. The powerhouse is from stone, with dimensions 33x13 m where 4 hydro-units are installed.
7. The discharge channel with trapezoidal section and 23.8m length and 11.1m width.

Irrigation water is taken from diversion and pressure basin of the HPP. The HPP 10 years annual average generation was 9.1 mln. kWh. At present hydrotechnical structures and main equipment need to be repaired. The rearmament project has been elaborated by Armhydrodesignæ Institute for this purpose. The penstocks has been replaced with new ones according to this project. The diversion of the dam is covered with sludge and need to be cleaned.

Airum HPP receives water from the river Debet, via its own water scoop, which is sufficient for normal operation of the HPP. Water for irrigation is being taken for diversion channel by the Shnokh pump station and from regulation basin by Argis pump station, which not interferes normal operation of the HPP. Minimum water capacity is 5 m<sup>3</sup>/sec.

8. The territory of the Enterprise - 100000 sq. m, the territory of the power houses and constructions is 15516 sq. m.
9. Technical means of transportation - one car (LUAZ 969).
10. There are no any non-completed construction facilities and non-installed equipment.
11. Until the third quarter of 1996 the balance data of the HPP were included in the list of separated subdivision of Southern electric networks regional department (EN SSRD).
12. Production generated - electric energy.

▶ Specific weight of sales (%)	1987	1995
▶ In market of the Republic	100	100
13. According to the information of July 1, 1996, the staff consists of 15 persons.

### A.3.3 Financial Information

The financial results of the last three fiscal years and the last quarter:  
Until the third quarter of 1996 the balance data of the HPP were included in the balance Separated Subdivision of Southern Electric Networks Regional Department.

### A.3.4 Terms of the Tender

1. The sales starting price - 129273 thous. drams.
2. A license shall be given to the tender winner by the corresponding State Licensing Authority according to the procedure stipulated by the RA Legislation within a month for registration in the State Register.
3. The tender participant for the purpose of HPP operation efficiency increase has the right to submit proposals on directions, term and cost of the works for rearmament of the HPP.

4. The HPP owner shall undertake to realize the principle changes of the plant, such as extension of the regulating basin, additional utilization of territory, new directions of diversion channels, etc. in accordance with the regulation of RA.
5. The HPP owner shall operate the plant only on purpose, i.e. for electric energy generation in compliance with the existing technical terms and instructions.
6. The Ministry of Agriculture and Food shall, according to the procedures stipulated by the Legislation of RA within 30 days after the privatization, conclude a contract about provision of the required volume of water corresponding to the designed electric energy generation for at least 10 years.
7. The problems concerning water evaluation as a resource and water calculation within the list of expenses of the generation of the production shall be settled in accordance with the Legislation of RA.
8. The HPP owner, after the winning the tender, within one year period shall make investments for implementation of urgent works in the following directions:
  - a) cleaning and rehabilitation of the diversion channels
  - b) repair of head structures mechanical equipment
  - c) rehabilitation of the attached spillway of the pressure basin (a project exists)
  - d) repair of the pressure basin
  - e) repair of the units 1-4
  - f) rehabilitation of telecommunication between head constructions and HPP power house
  - g) repair of concrete constructions of the substation, h) rehabilitation of the parallel operation with Energy System
9. The Ministry of Energy shall, according to the procedures stipulated by the Legislation of RA within 30 days after the privatization, conclude a contract about provision of the purchase and/or transmission of the designed electric energy for at least 10 years. Generated electric energy tariffs shall be defined according to the procedures stipulated by the Legislation of RA.
10. The quantity and the tariff(s) of the electric energy to be supplied to other consumer(s) shall be defined by a bilateral contract, if not otherwise stipulated by the Legislation of RA.
11. The owner of the HPP, operating in the interconnected system, shall undertake to follow the instructions of the energy system dispatch service within the framework of the contracts concluded.

12. The HPP owner shall ensure the environmental norms.
13. In case of resale, the new owner shall become the lawful successor of the previous owner.
14. The right of the tender terms control realization shall be assigned to the body authorized by the Government of RA.
15. In case of failure of tender terms implementation within the specified term, the HPP owner shall be deprived of ownership right in accordance with procedure stipulated by the Legislation of RA and imposed to pay relevant penalty in accordance with the privatization contract terms.

#### **A.3.5 Terms and Procedure of Payments**

1. The tender participant shall transfer the payments for participation and registration on the special accounts as follows: The Operations Dept. of Haykhnaybankæ for payment by drams - acc. No. 160001487077, by certificate acc. - No. 71489807.
2. The participant have the right to effect the payments both in cash and in written order.
3. The contract about privatization shall be concluded with the owner by the National Property Registration and Denationalization Department of RAæ, within a month from the date of forwarding the protocol to the tender winner.
4. In case if the tender winner shall not conclude the above mentioned contract within a month, the payment for the participation shall not be returned and the results of the tender shall be deemed invalid.
5. The tender participant shall transfer the proposed amount against sales starting price of the Enterprise to the account set forth in the contract within a month after the date of receiving the copy of tender commission protocol about winning the tender. In case if the winner shall not pay the amount within the mentioned term he will be deprived of the right of ownership and the payment for participation shall not be returned.
6. During the general settlements with the person who has obtained the right of ownership the participation payment shall be considered.
7. After the termination of the tender (except the tender winner) the participation payment paid by the participants shall be returned not later than within 5 days after transferring to the special account.

8. The contract shall be considered to be registered after the conclusion of the contract and payment of the relevant amount and beginning from that minute the winner shall obtain the right of ownership.

#### **A.3.6 Terms of Participation**

1. The privatization and denationalization bodies/subjects that have timely submitted the tender participation application, effect the participation and registration payment under the defined procedure as well as submitted the documents stipulated by the item 5.2 of this Reference have the right to take part in the tender.
2. To participate in the tender the purchaser shall submit the documents as follows:
  - a) tender application (the documents can be obtained at the place where the tender shall be held)
  - b) written proposals of the participants shall be submitted in the form of investment project mentioning the sources of finances to be invested in closed envelope (the proposed amount must be in written form)
  - c) copies of payment documents of effected payments for participation and registration copies of the participants registration documents and the license given to the applicant in case of participation of enterprises, investment funds and companies
  - d) reference of the Memorandum of Minutes of the personnel about participation in the tender, in case of submission of an application by HPP personnel
  - e) the application can be submitted in Armenian, Russian or English languages
3. The date of application registration is considered to be the date of reception.
4. The applicant receives a written note about application acceptance immediately after the application registration by the tender commission. In case of postal sending the applications are accepted only by registered letter and the corresponding post office employee receives the note. The enterprise (person) mentioned in the application shall obtain the status of tender participant from the moment of application registration.
5. The tender participant has the right to take back his application before the tender date, notifying about it the tender commission in written form. In that case the effected participation payment shall be returned not later than within five days.

6. The amount of the tender participant registration payment is 2160 drams (three times of the least salary).
7. The amount of the tender participation payment is 6463650 drams (5% of the sales starting price of the state share (inventory) of the Enterprise).
8. The deadline for application submission is January 6, 1997, 17.00.
9. The place of application submission is Government House 2, Ministry of Energy of RA, III floor, suite 305.
10. Date, hour and place of the tender: January 10, 1996, 1400; Government House 2, Ministry of Energy of RA, III floor, Conference hall.
11. The procedures for preliminary familiarization with the Enterprise: the tender participants can present the note about the application acceptance to the Enterprise administration after which participants can have view of the Enterprise at site.
12. Telephone numbers for additional information: 52-87-04, 65-30-31, 58-76-23, 52-11-39, 58-78-28, The discussion of the tender participants proposals and the granting of the winner shall be realized by the tender commission, according to the General Procedure of Privatization of State Enterprises and Non-Completed Constructions by Tender confirmed by the Resolution No. 391 of the Government of RA dated June 25, 1996.

## A.4 MINIMUM BID PRICE METHODOLOGY

Approved  
Minister of Economy of RA  
V. Avanesyan

Approved  
Minister of Energy of RA  
G. Martirosyan

26.08.96  
Rule for the Decree #270

The methodology of the determination of the starting prices for the small hydropower stations (up to 30 Mwt) put on the privatization (Ministry of Energy)

The main criteria for the determination of the starting prices are:

- ▶ Initial investments in the HPS
- ▶ Age of HPS
- ▶ Current conditions of HPS (working, non-working, written-off)

### A.4.1 The Estimate of the Starting Price of HPS

Based on the principle, that HPS can produce output according accepted standards and norms, the starting price is determined according to the criteria accepted in the modern hydropower industry:

1. For the station with the capability to produce up to 500 kW, the starting price should be \$1,500 US per kW.
2. For the station with the capability to produce 5000 kW and more, the starting price should be \$1,200 US per kW.
3. For the station with the capability to produce in the range of 500 - 5000 KW, the starting price should be calculated according to the following formula:

$$K=1500 - 0.067*(N_p - 500), \text{ US\$ per KW}$$

#### A.4.2 Influence of the Age of the Hydropower Station

The current price of the HPS considered as the part of the starting price according to the following:

- ▶ 5%, if the HPS was built during 1913-1930,  $K_A=0.05$  (coefficient of age)
- ▶ 7.5%, if the HPS was built during 1931-1950,  $K_A=0.075$
- ▶ 10%, if the HPS was built during 1951-1957,  $K_A=0.10$

#### A.4.3 Influence of the Current Conditions of the Hydropower Station

For the currently working HPS, as its current price is considered the starting price:  $K_C = 1.0$  ( $K_C$  - coefficient for current conditions). For HPS in good condition, but currently not working due to some causes:  $K_C = 0.8-0.9$  HPS, which are written off and need for renovation (considering the supply of resources)  $K_C = 0.6-0.8$

So, the starting price of HPS is the following:

$$P_{HPS} = N_p * K * K_A * K_C$$

Explanation to the state budget can be found on page 73

The deficit of the state budget of Republic of Armenia for 1997 and the sources of its replenishment (under the paragraph of ) Internal sources:

In 1997 it is planned to have 23.0 billion additional financial resources, which includes:

1. Issuing of Treasury bills - 6.0 billion Armenia drams
2. Privatization and denationalization of state enterprises - 13.9 billion Armenian drams
3. From the central bank in the form of loan - 3.1 billion Armenian drams

## A.5 BID CRITERIA RECOMMENDATIONS

This appendix describes a scheme for evaluating bids associated with the sale of small hydroelectric facilities under Resolution N. 321 of the Government of Armenia RA, dated September 30, 1996. The evaluation scheme presented below allows for objective and consistent evaluation of bid proposals based on well defined criteria and a transparent evaluation process. Creating a transparent bid process based on objective criteria will serve two important purposes. First, limiting the bidder's uncertainty associated with how the bid is evaluated will increase the number of bidders likely to participate, which in turn will result in a more competitive bid. Second, a transparent evaluation process based on objective criteria will minimize the potential for claims of unfair or biased bid evaluation procedures by losing bidders.

In order to evaluate various bids in an objective and transparent manner, Hagler Bailly recommends that the Ministry of Energy use a rating and weighting scheme. The primary advantage of this approach is that it specifies the importance of various evaluation criteria, thereby minimizing subjectivity in the evaluation process. Bidders should be notified regarding the use of a rating and weighting system and be informed about the specific scoring criteria *prior* to the submission of bids.

There are three aspects to the rating and weighting system: the evaluation criteria, the score for the given criteria, and the weight of each criteria. The evaluation criteria may include the creditworthiness of the investor, the initial payment, business plan, investment schedule and sources of financing, and other factors. Each of these criteria are then given a score. Finally, a weight is assigned to each criteria, based on the criteria's importance relative to the other criteria. The bidder's score for each criteria is multiplied by the criteria's weight and a total score for each bid is calculated. The bid receiving the highest total score is then selected. Scoring standards need to be developed to be able to differentiate scores. The range of possible scores may vary, but for illustrative purposes we shall assume scores fall between 0 and 3. In addition, the weights assigned to each criteria must be determined. (Criteria and weights can be based on expert opinion and the experience of other countries that have used this approach.) Following is a simple definition of scoring criteria:

- ▶ 0 -- Fails to meet criteria
- ▶ 2 -- Meets criteria
- ▶ 1 -- Meets criteria to a limited extent
- ▶ 3 -- Exceeds all aspects of criteria

Exhibit A-1 below illustrates potential evaluation criteria, bidder documentation associated with the criteria (if any), suggested scoring criteria, and the criteria's relative weight.<sup>1</sup>

**Exhibit A-1  
Bid Evaluation Criteria and Weight**

Bid Evaluation Criteria	Suggested Scoring Criteria	Weight (%)
<b>1. Present Value of Total Bid</b>	3 = Highest PV bid 2 = Above average of bid 1 = Below average of bids 0 = Lowest PV bid.	25%
<b>2. Business/Financial Feasibility Plan</b> - mission statement and strategic goals and objectives - annual goals for plant availability and output - financial forecast and expected cash flow with scenario analysis (low, base, high cases)	3 = Most comprehensive plan 2 = Generally comprehensive plan 1 = Somewhat comprehensive plan 0 = Least comprehensive plan	25%
<b>3. Proposed Power Sales Tariff</b>	3 = Lowest tariff 2 = Below average of proposed tariff 1 = Above average of proposed tariffs 0 = Highest tariff.	10%
<b>4. Creditworthiness of Investor</b> - letter of reference from bank - annual report (financial statements, balance sheet)	2 = Bidder provides documentation 0 = Bidder does not provide documentation	5%
<b>5. Initial Payment</b> (% of total payment) (% above minimum sales price) (relative to other bidders)	3 = Highest initial payment 2 = Above average of all bids 1 = Below average of all bids 0 = Lowest initial payment	10%
<b>6. Plant Rehabilitation and Investment Plan</b> - technical approach/rehabilitation plan - annual operation and maintenance plan for multi year period - financing guarantees and sources (% debt v. equity, % financing generated from plant operation)	3 = Most comprehensive plan 2 = Generally comprehensive plan 1 = Somewhat comprehensive plan 0 = Least comprehensive plan	15%
<b>7. Investor's Technical Expertise</b> -related experience owning or operating a small hydro facility.	3 = Bidder has the most related experience 2 = Bidder has significant related experience 1 = Bidder has little related experience 0 = Bidder has no related experience	10%

<sup>1</sup> The evaluation criteria listed in Exhibit B-1 are offered as examples of commonly used criteria. Likewise, the weights assigned to each criteria are based on international experience with power sector privatization and the consultants' judgment. Other evaluation criteria and weights may be used in order to meet the Ministry's specific privatization objectives.

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The following tables illustrate the effect of the rating and weighting scheme. Two investors submit bids for the same hydro plant. Investor A receives a raw score of 17, which is higher than Investor B's raw score of 15. Investor A loses the bid, however, due to the fact that Investor B's weighted score of 2.55 exceeds Investor A's weighted score of 2.3.

**Investor A**

<b>Bid Evaluation Criteria</b>	<b>Score (0-3)</b>	<b>Weight (%)</b>	<b>Total Score</b>
1. Present Value of Total Bid	2	25%	0.5
2. Business/Financial Feasibility Plan	2	25%	0.5
3. Proposed Power Sales Tariff	3	10%	0.3
4. Creditworthiness of Investor	2	5%	0.1
5. Initial Payment	3	10%	0.3
6. Plant Rehabilitation and Investment Plan	2	15%	0.3
7. Investor's Technical Expertise	3	10%	0.3
<b>Total</b>	<b>17</b>	<b>100%</b>	<b>2.3</b>

**Investor B**

<b>Bid Evaluation Criteria</b>	<b>Score (0-3)</b>	<b>Weight (%)</b>	<b>Total Score</b>
1. Present Value of Bid	3	25%	0.75
2. Business/Financial Feasibility Plan	3	25%	0.75
3. Proposed Power Sales Tariff	1	10%	0.1
4. Creditworthiness of Investor	0	5%	0
5. Initial Payment	3	10%	0.3
6. Plant Rehabilitation and Investment Plan	3	15%	0.45
7. Investor's Technical Expertise	2	10%	0.2
<b>Total</b>	<b>15</b>	<b>100%</b>	<b>2.55</b>

## A.6 SMALL HPP CONDITIONS OF TENDER

1. To define the initial price of HPPs in \_\_\_\_\_ thousand drams.
2. The registration of the winner in the State Register of Enterprises is done in case if the relevant license is available.
3. With the purpose of the HPP's efficiency improvement the Participant of the tender can submit proposals relating to the actions, terms and costs to be covered for rehabilitation of the plant.
4. The owner of HPP must operate the plant with purpose to generate electrical power in accordance with the technical conditions and instructions.
5. The new owner of HPP is the successor of the former state enterprise.
6. Annual water supply shall be provided to the HPP according to the RA established laws on the contractual basis.
7. The owner of HPP must perform regular maintenance to provide productivity and efficiency of the plant.
8. The owner of HPP must invest \_\_\_\_\_ USD in the period \_\_\_\_\_ years to increase HPP's operation efficiency. At the same time such rehabilitation shall not affect the mode of effluent.

The owner of HPP must make principal technological changes such as enlargement of regulation pool, additional land usage, derivational constructions, etc., pursuant to the RA laws. The owner of HPP has the right to sell the electric energy to Armenergo SE according to the annual contracts signed by the parties at the rates not less than the average purchase rate accepted by the producers of that energy system.

The amount of the electric energy supplied to other consumer(s) and tariff(s) are determined by the bilateral contract. The owners of the HPPs in the integrated energy system are bound by the instructions of the dispatch services in the framework of the signed contracts. The owner of HPP must ensure the observance of the environmental requirements. In the case of the HPP's resale the new owner is the legal successor of the former one.

## **A.7 EXAMPLE POWER SALES AGREEMENT FOR SMALL HYDRO PRIVATIZATION**

Final Version, Adopted by the Ministry of Energy

(NOTE: THIS POWER SALES AGREEMENT IS NOT APPROVED OR PROPOSED BY  
USAID OR HAGLER BAILLY)

Contract No  
On Sales and Purchase of Electricity

" \_\_\_\_ " \_\_\_\_\_ 199

Yerevan

The \_\_\_\_\_ the Ministry of Energy of the RA (hereafter the  
"Seller"), being governed by \_\_\_\_\_, represented by  
\_\_\_\_\_, on the one hand, and "Armenergo" State Enterprise being  
governed by \_\_\_\_\_, represented by the General Manager  
\_\_\_\_\_, on the other hand, (hereafter the "Buyer"), signed the following  
contract:

### **A.7.1. The Subject of the Contract**

1. The Seller produces and sells and the Buyer buys electricity at the wholesale prices and pays for that due to the established order by this Contract.
2. Parties to the agreement commit to be governed with this contract and "Electricity Consumption Rules" (hereafter "Rules").

### **A.7.2. The Price of the Electricity**

The wholesale electricity tariff is calculated by the Seller and approved by the RA Ministry of Energy. In the case of tariff changes the Seller commits to inform the Buyer immediately.

### A.7.3 The Liabilities of the Parties

The Seller commits:

1. To produce and supply the Buyer with electricity in accordance with the established amounts, as indicated in Appendix 1 which is inseparable part of this contract.
2. To assure the implementation of orders of the dispatcher's time-table, Central Dispatcher Office of Armenergo SE, if they do not contradict the orders established by the Ministry, cause damage to the equipment, threat the health and life of the staff .
3. Within established period to inform the Buyer about the scheme of the main equipment repair.
4. To assure the maintenance of the equipment and the additional schemes of the Buyer, installed at the Seller's connection point.
5. To assure the maintenance the relay protection of the equipment, automatics and the regulation, due to the Buyer's request.

The Buyer commits:

1. To receive the electricity supplied by the seller in accordance with this Contract.  
  
The Buyer has right to change the quantities of the supplied electricity, in case of the damage which caused the changes in the operation of energy system.
2. To pay for the received electricity at the established wholesale tariffs for electricity.
3. To assure the seller's technical norms for its electric equipment, and rule out damages.
4. To assure the following parameters of electricity on its and the Buyer's interconnection point: Frequency - 50Hz  $\pm$  1%, Voltage fluctuation - Unom +5% and -10%. And regulate the fluctuations of the electricity quality no more than in 30 minutes.

5. In written form submit to the Seller:
  - a) The annual energy plan prior to November 30 of the previous year.
  - b) The monthly energy production plan prior to November 20 of the previous month.
  - c) The daily schedule of the electricity and the capacity before the 15<sup>00</sup> of the previous day.
6. To inform the Seller the principals of the system automatics and the relay protection equipment, installed at the connection points.

#### **A.7.4 The Measurement of the Supplied Electricity Amounts**

1. The electricity supplied to the Buyer on the interconnection points is considered to be the amount of the delivered electricity. The location of meters and measurement methods see in the act, attached to this Contract. The measurement methodology for the purposes of monitoring the amount of electricity supplied to the Buyer see in Appendix 1.
2. Both commercial and controlling meters must belong to the first accuracy class, the metering transformers connected to them - 0,5 accuracy class, installed on the cables of the transformers secondary circuits.
3. The actual amount of the electricity supplied is determined in accordance with the mutually adopted act (see Appendix 2).
4. In case of doubt of the readings, by the request of any party the inspection of the meter has to be done according to the established order. The resettlement is done by the controlling meters and in case of their damage - by the mutually signed act.
5. Every 25th of the month at 24<sup>00</sup> the representatives of the Seller and the Buyer register the readings of the actual quantity of the electricity. If one of the parties doesn't attend the registration of the readings, unilateral act is made, which is obligatory for the other party.

### **A.7.5 The Procedure of the Inter-settlement and the Payment**

The Buyer commits to pay for received electricity due to the submitted invoice once in 10 days, within 3 days after receiving the invoice. The final settlement of the account is to be done till the 5th day of the next month and each payment is legalized in mutual financial acts. The payment is to be done within 5 days after final settlement, but not later than the 10th of the current month. In case of non-payment the Seller has right to submit an obligatory demand to the bank

### **A.7.6 The Obligations of the Parties**

1. The Seller commits to pay fines to the Buyer for power cuts through the fault of the former, for the missing amount of electricity, at the ten-fold rate.
2. If the Buyer breaches the payment deadline indicated in Paragraph 5.1, he pays a fine to the Seller at the rate of 0.5% of the debt for each day of delay.
3. If the Buyer breaches the amount or power of electricity and capacity indicated in Appendix 1, he pays the Seller for the excess amount or power at the ten-fold rate after having settled the account with the seller.

### **A.7.7 Additional Conditions**

1. Monitoring and registration of electricity quality is implemented:
  - a) Frequency - in accordance with frequency value registered in Armenergo Central Dispatch Service;
  - b) Voltage - by means of measuring equipment installed by the Buyer (see the list of installation locations in Appendix 4);
2. Buyer's complaints about electricity quality to the seller must be filed within the settlement period and be confirmed in an act compiled by the parties with the participation of State Energy Supervision Division.
3. The Buyer commits to transfer on its account number an advance not more than 50 % from the amount of the sold electricity. The Buyer has right to own the remainder of the money after the final settlement with the Seller.

**A.7.8 Arbitration**

1. Whenever possible, the disputes concerning this contract are resolved by negotiation.
2. If it is impossible to resolve it by negotiation, it is resolved in accordance with established procedure in state arbitration of the RA.

**A.7.9 Force Majeure**

1. The parties are exempted from responsibilities indicated in this Contract in the case of force majeure (unpredicted) conditions: blockade, explosion of the gas pipe-line, military actions, earthquake, flood, fire, and other disasters.
2. The parties immediately have to inform each other the force majeure event and its duration. In each case, the force majeure event and its duration must be confirmed by the RA Ministry of Energy.

**A.7.10 The Validity of the Contract**

1. This contract comes into power starting \_\_\_\_\_ 199... and is valid up to \_\_\_\_\_ 199...
2. Each year, the contract is considered extended by one more year if none of the parties applied to each other for reconsideration or termination of the contract, one month prior to the expiration date.

**The Legal Addresses of the Parties:**

## A.8 SMALL HYDRO MODEL WATER AGREEMENT

The following Agreement on Water Supply and Acceptance is entered into between "Haidjrtnt" RSW \_\_\_\_\_, (hereafter "Water Supplier") in the person of Enterprise Director \_\_\_\_\_ on the one hand, and "Haidjrtnt" RSW \_\_\_\_\_, (hereafter "Water Receiver") in the person of Enterprise Director \_\_\_\_\_, on the other hand

The relations between the Parties are regulated by the RA Water Code, the RA Legislation, the orders and instructions of the Ministry of Agriculture and Food and "Haidjrtnt" RSW of the RA and the following Agreement.

1. "Water Supplier" is responsible to supply \_\_\_\_\_ mln m<sup>3</sup> water to "Water Receiver," in compliance with the approved "Water Usage Schedule" due to the established order, which is an integral part of the following Agreement. "Water Receiver" is responsible to pay for received water to "Water Supplier" due to the established order and terms by wholesale price \_\_\_\_\_ dram per cubic meter of water.
2. The fact of water supply and acceptance is to be registered and approved in the diary, created due to the established order, with signatures of Parties. The grounds for water acceptance payment are to be ten-days protocols, based on diary data and bilaterally approved.
3. The Agreement is of full force and effect upon the \_\_\_\_\_ % advance payment for water by "Water Receiver." The "Water Supplier" is responsible:
4. Within 10 days after receiving the Water Usage Plan approved due to the established order by "Water Receiver," sign the Agreement, due the order appoint the authorized person for water handling.
5. Provide the construction of water measurement point, furnishing with the limnograph, the measured and uninterrupted operation at the water supply point.
6. At the water measurement point provide water holding to "Water Receiver" according to the established schedule.
7. Provide uninterrupted water supply according to the water usage schedule.
8. In the event of less water supply through fault of "Water supplier" up to five days, within next five days "Water supplier" compensates the shortage of water.

9. In the event of water shortage in the water basin due to the climate "Water Supplier" carries out water supply due to the mutually agreed new schedule.
10. In the event of natural disaster, accidents immediately inform "Water Receiver" about the discontinuation, reduction or increase of water supply.
11. "Water Receiver" is not to pay for the additional quantity of scheduled water, supplied through fault of "Water Supplier." The additional quantity of scheduled water can be provided due to "Haidjrtn" RSW permission, a substantiated application of "Water Receiver," which is a subject of payment. "Water Receiver" is responsible:
12. Fifteen days prior to irrigation season submit the approved Water Usage Plan to "Water Supplier" and within next ten days sign the agreement.
13. Due to the order appoint the authorized person for water holding.
14. Within three days after ten-days period, based on the Water Supply-Acceptance Diaries establish and approve Ten-Days Statements.
15. Based on the Ten-Days Statements pay for the received water during the next ten days. For each delayed day pay a penalty on the amount of 0,1% of unpaid total.

**Legal Addresses of Parties**

"Water Supplier" \_\_\_\_\_  
Address \_\_\_\_\_ Account Number \_\_\_\_\_  
"Water User" \_\_\_\_\_  
Address \_\_\_\_\_ Account Number \_\_\_\_\_

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**A.9 CRITIQUE OF SMALL HYDRO PRIVATIZATION**

**EVALUATION OF THE  
PILOT PRIVATIZATION OF SMALL  
HYDROPOWER PROJECTS**

*Prepared for:*

US Agency for International Development  
Ministry of Energy of the Republic of Armenia  
Ministry of Privatization and Foreign Investment of the Republic of Armenia

*Prepared by:*

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Yerevan, Republic of Armenia

May, 1997

## 1.0 INTRODUCTION

This report has been prepared with the support of the U.S. Agency for International Development as part of the promotion of private power task under contract CCN-0002-Q-03-3152-00 to Hagler Bailly Consulting, Inc. (Hagler Bailly). The report was completed based on findings made during a trip to Armenia during the period of 30 April to 13 May, 1997. During the visit, the information gathered as a basis for this report included:

- ▶ interviews with Republic of Armenia (RoA) officials;
- ▶ published information from the tenders for privatization;
- ▶ background information on the projects;
- ▶ data from other Hagler Bailly reports; and,
- ▶ interviews with two of the successful bidders.

The goal of the evaluation was to provide an overview of the first round of the small hydroelectric facility privatization, an analysis of the shortcomings and recommendations for improvements. The purpose of this report is to document the discussions held in a summary workshop and provide the Armenian government Ministries with the perspective of an independent party making suggestions for improvement of the process for the final small hydroelectric tenders. The recommendations also have validity for future privatization activity in the electric power sector.

## 2.0 OVERVIEW OF THE SMALL HYDROELECTRIC PROJECT PRIVATIZATION PROCESS

### Pilot Program Summary

The Small Hydroelectric Project (SHP) privatization process is being carried out under the Armenian Law on Privatization and Denationalization of State Owned Enterprises and Unfinished Construction Sites. The SHP privatization was established by Government Resolution Number 321, dated September 30, 1996 which established a Tender Commission for privatizing the projects and outlined the schedule, process and initial price calculated for each of the projects. A total of 25 projects, which totaled 31 MW of installed capacity were initially targeted for privatization. Some of these projects were removed from the process for national security and other reasons.

On October 16, 1997, Resolution Number 14 of the Interdepartmental State Commission of Privatization approved the information to be published on the projects. On December 20, 1997, the Tender Commission set up by Resolution 321 made a decision to establish a timetable for the

first eight projects to be privatized. These were part of the first pilot group. The second group and remaining projects were also defined.

The tender conditions and information on the projects was approved by the proper authorities and the information was published on November 7, 1996 in the newspaper, "Republic of Armenia." Each of the eight projects had its own tender and conditions, although the business conditions and requirements were uniform among the projects. The major differences were in the technical parameters of the projects, requirements of the rehabilitation process and the "starting price" for each project.

The project bid submission deadlines and tender performance dates were set for three different dates, originally in January 1997, but rescheduled for late March and early April. Fourteen separate bidders submitted bids on seven of the projects. One project had no bidders. For six of the projects, the minimum bid was met or exceeded. For one project, there was only one bid which was well below the minimum bid. All bidders were Armenian and there was no bid submitted nor obvious participation by foreign bidders. As most of the projects were sold and there was competition for five of the eight projects, the pilot privatization could be considered to be successful.

### **Projects for Privatization**

The list of the 25 projects initially identified for privatization is in Exhibit 1. Several of the projects have been eliminated from the program. The Yerevan 2 project was excluded from bidding since the project lands and works are owned by the Earthquake Engineering Research Institute. The Institute has invested some time and money into rehabilitating the project. Also, the Zeroges Project is located in a sensitive military zone and will not be privatized.

The projects are in variable stages of operable condition. The projects in the best condition have all units operable, but are in need of maintenance and some repair to the electrical and mechanical components. The projects in the worst condition have had the equipment removed and the civil works are in advanced disrepair. However, all of the projects are apparently in a state where resumption of generation is possible without complete reconstruction. Generally, the water supply to the project is in place so that there is no major cost of impoundment or water conveyance. No inspection of facilities was made under this study.

The first group of pilot privatization projects included six which were in some stage of operation and two which were not in operation (Martuni and Yghegnadzor). Despite the need for new equipment, there were two bids on Martuni. Yghegnadzor, which has no equipment in place, received no bids.

A summary of the projects and successful bids, compared to the starting or minimum bids can be found in Exhibit 2. There is no clear pattern that can be deduced from examining the results, except for the relatively low costs per kilowatt when considered in relation to international replacement costs. However, considering that the expected value for the

power is speculative and expected to be low and the cost of rehabilitation for even the best plants will be a large multiple of the purchase price, the plants' prices are not surprising.

In the United States in the early 1980's, there were many retired hydroelectric plants which were sitting idle with abandoned or obsolete equipment. During the period of interest in the US in redeveloping alternative energy, developers took over some of these plants and placed them back into service. A number of these plants were acquired at little or no cost to the developer, as a significant investment had to be made to upgrade the plant. The power values for the plants restarted in the US generally ranged from \$0.04 to \$0.06 per kWh.

### **Positive and Negative Results of the Pilot Project Privatization**

As there were no specific goals stated prior to the SHP privatization, a true measure of the success of the program is speculative. In general, it would seem that the program was a qualified success. This judgment is based on a subjective measure of the positive and negative aspects of the results.

There were clearly several good results:

- ▶ Seven of the eight plants were sold;
- ▶ There was a reasonable level of competition that included 14 bids from 13 different bidders;
- ▶ The process worked as it was intended;
- ▶ Selection of the winners was obvious and there should be minimal controversy;
- ▶ Site owners have paid and are satisfied with the results so far; and,
- ▶ Valuation by the Privatization Committee was exceeded in six of the seven sales.

There were also some negative elements:

- ▶ There was no foreign participation in the tender;
- ▶ All of the sales were by voucher - no cash was received by the RoA<sup>2</sup>;
- ▶ Prices were low in comparison with replacement standards;
- ▶ There are many uncertainties for the new owners; and,
- ▶ Completion of rehabilitation requirements may be difficult to enforce.

On balance, the positive elements listed appear to significantly outweigh the negatives.

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<sup>2</sup> The vouchers, however, represent an outstanding obligation, similar to debt, to the citizens of Armenia. As these are redeemed, they represent a release of the Government from this obligation. Therefore, there is some inherent value in debt release received for the projects.

### **Future Plans for SHP Privatization**

After the sale of the first group of projects, there remain 16 plants which will undergo privatization. The next group which has been identified to be sold includes:

- ▶ Vogchi HPP-2
- ▶ Vogchi HPP-3
- ▶ Sisian HPP
- ▶ Zovashen HPP
- ▶ Agarak HPP
- ▶ Armaveer HPP
- ▶ Jermuk HPP

The last three projects listed are under a lease to non-Armenenergy operators. These operators will apparently have the first rights to the projects and may not be included in the actual tender. After this group of seven, there are five more projects which would be in the final group. None of these projects are operating. In addition to these projects, the Yeghegnadzor project which was included in the first tender is still available. Finally, there are three small projects, Yerevan-3, Dzora, and Vardenis which have not been designated in any of the groups as of the time of this report.

It is the stated intention of the Privatization Committee to complete the privatization of this entire group of projects in 1997.

## **3.0 PROCEDURE AND CONDITIONS OF THE TENDER**

This section is a discussion of the procedure and conditions of the pilot tender, including the information which was provided to the potential bidders. A brief critique of the conditions is also provided.

The procedure for the actual tender of the projects was relatively simple, outside the decision making processes of the Armenian government. Essentially, the projects were identified for the first group, information was collected, a starting price was placed on the projects and approval was provided by the appropriate authority for the privatization to proceed.

Initially, the project information and conditions of tender were published on November 7, 1996. There was limited response to the publication. The dates for submittal and opening of bids was set for January, 1997. These dates were later changed to March and April, 1997 due, in part, to recommendations received from foreign assistance agencies. The projects and tender information were publicized in the "Republic of Armenia," a state-owned newspaper, which is regarded as the most widely circulated in the country. This newspaper regularly

publishes all information related to the tender of projects and enterprises for privatization. Additionally, press releases were sent to international energy investor related publications (e.g., Independent Power Report, Privatization International).

A translation of the Reference Terms for the Areny HPP as published are provided in the attached appendix. The information includes:

- ▶ Authorization for the tender
- ▶ Location and technical information on the project
- ▶ Financial condition
- ▶ Terms of tender
- ▶ Terms of payment
- ▶ Terms of participation

In general, the reference terms published were those necessary for public notification in any process of this nature. However, this information was short of what would typically be available in a sale or privatization of a project asset. The additional information suggested in the following review could be provided in an information package which would be given to any interested bidder. The package would be separate from the reference tender publication. Further, the additional information for bidders should not pose any major effort on the part of the privatization staff as most of the items can be readily provided based on presently existing information in Armenia.

The information provided in the reference tender publication is all that was provided to any party interested in bidding. There was no invitation for a formal site visit, although there was also no restriction on one's own site visitation. The authorization for the tender included citation of the various statutes and resolutions which govern the privatization process.

The project information included a brief technical description of the plant's original design characteristics, facilities, condition of the facilities, past ten year's average production, lands and description of the rehabilitation work needed.

Information which was not included in the General/Technical description which generally would be included in a sale/privatization package are listed below. More details on this are provided in Section 4.

- ▶ A map of the project, with general and local location, showing transportation routes.
- ▶ Summary drawings of the projects - These should be available from the Hydroelectric Institute, Armenergo or the site itself. A plan of primary structures, with one or two section drawings of major facilities (dam/powerhouse/canal) is sufficient.
- ▶ Identification of the equipment manufacturers (if equipment is in place).

- ▶ Hydrology details - The information supplied should answer these questions: From where is the water supplied? Is this part of an irrigation system? If so, what are the operating rules affecting the plant? If the plant is located on a stream, is there a gauge? If so, the flows for the past ten years should be provided to allow the potential investor to compare to the annual output. This information allows the bidder to discover current potential and look at whether low output is due to the plant or water conditions.
- ▶ Production history - The last ten year average is not very meaningful by itself. Yearly or monthly output for the past ten years should be furnished.
- ▶ A description of the point of interconnection with the electrical system and ownership of the substation/intertie.
- ▶ Land map of the project property.
- ▶ A description of the most recent rehabilitation/repairs done on the project, if these have taken place in the last ten years.

The financial condition described in the tender documents provided only makes a statement that the project balance sheets were not kept separately. Recovering the details would be a major effort and is not likely to be possible. The prospective bidder is most interested in the costs of operating the project. If any of these costs are available, they are of value. If they are not available this should also be stated. Costs which are of interest to a bidder include operating budget, including labor, tools and incidental costs, costs of minor and major repairs and consumable items such as oil. Due to the prior nature of ownership of these plants, the bidders will not typically be expecting this level of detail.

The Terms of Tender and Requirements of Participants section spells out a number of business conditions for the bidders. A discussion of these conditions indicates the vague nature of some of the key points. These points cause uncertainty for the bidders, which results in less interest and lower bids for the projects. While uncertainty in some conditions will not mean no interest on the part of any single bidder, as the uncertainty in the tender increases, the likelihood of a bidder not responding to the tender increases quickly. The points below demonstrate some of the areas of uncertainty:

- ▶ The starting sales price, or valuation is provided. However, the exact significance of this price is not explained. If it is an absolute minimum bid price, such that lower prices will be rejected, it should be clearly stated as such. However, it has been represented that one half of this valuation is the actual minimum price of bids which will be accepted. One of the projects was sold to the labor group that operates the particular plant at just over one-half of the valuation. It is understood that this group did not receive any favorable status due to their position. They won the bid, as they were the only bidders and the price was acceptable. If one half of the valuation is the minimum bid acceptable, this must be stated clearly in the tender documents.

- ▶ A license is to be given to the tender winner. However, the parameters of the license and the rights and responsibilities bestowed by this license are not defined. This also should be made clear, perhaps in a short appendix. The license description does not have to be in the published tender, but should at least be part of a greater information package.
- ▶ Since the rehabilitation work to be done at a minimum is defined, any approvals necessary from the government or any ministry for work in addition to the minimum should be identified.
- ▶ Items 6 and 7 of the requirements cite the need for a water use contract with the Ministry of Agriculture and Food. This is needed so that project operations do not interfere with irrigation and existing water uses. However, the constraints which exist on a particular plant, such as water only during certain seasons, should be defined.
- ▶ It is understood that the cost of water use for the SHPs is not now defined and the Ministry of Agriculture and Food has requested a large reimbursement. This possible liability should be defined, or the cost to be borne by the project (after resolution) stated clearly. The government must define all liabilities to expect the bidder to give a firm bid. If liabilities are not clear, bidders will automatically lower the bid price.
- ▶ It is not clear from the conditions whether the bidder has the right or the requirement to sell power for the next ten years to the State. It is understood that it is intended by the documents that this is only a right. Since this issue can be misunderstood, it should be more completely defined. The right to sell to a third party should also be clearly defined, including the availability of transmission. This relates to the definition of an interconnection point to the system grid, which must be provided in the technical project information.
- ▶ Any environmental conditions which are specific to the project must be identified. This includes the amount of water flow which cannot be used for the project due to sanitary or other environmental considerations.
- ▶ Term 15 states that a penalty will be paid in the instance of non-compliance with the tender terms. The penalty would be in accordance with the contract. Since no draft contract is included in the information, the penalty should be defined.

The place, time and amount of payments to be made is clear. However, there are several items which are not clear, particularly to a foreign investor.

It states in the tender that the participant has the right to make payments in cash or bank draft. It is also implied that the purchase can be made using vouchers or cash. However, what is less clear is whether a non-Armenian bidder can make the project payment and bid bond (5% of valuation) in vouchers. Whether a foreign party can or cannot use vouchers should be clearly defined in the documents so that both the foreign and domestic bidders will understand the bidding and payment rules. While a foreign party may consider it a disadvantage if they cannot use vouchers for privatization, it will probably not stop them from bidding.

It is also referenced that a contract will be concluded with the successful bidder. A draft of this contract should be provided in a package of other information to the interested parties. If parties have a problem with certain contract conditions, they can provide exceptions in their bid package. If not, they can sign and return the contract in the bid package. The contract will only be signed with the winning bidder by the government.

The terms state what must be submitted. In general this is very clear. There are several items which are not entirely clear, however. For instance, there is no described method of submitting questions or clarifications to the Privatization Committee. In many of these bid situations, there is a date by which questions must be submitted in writing and a list of the questions and answers is provided to all parties that have gotten the project information package. Also, it is not entirely clear that the bid values submitted will be separated into the actual price to be paid for the project and the later investment. This should again be clearly stated.

## 4.0 RECOMMENDATIONS TO IMPROVE THE PROCESS

From the review of the entire pilot privatization process, a series of suggestions can be made to improve the process for the additional projects to be privatized, and for future, larger project privatizations to be scheduled in the future.

### **Recommendation 1: Clarify Privatization Goals**

This is the most basic and fundamental of the recommendations. The definition of what is actually hoped to be achieved by disbursing state assets should dictate the actual process used to disburse the asset.

Some potential goals for a privatization process by any governmental body include:

- ▶ raise cash from the asset sale
- ▶ achieve better management of facilities/resources
- ▶ rehabilitate the facilities
- ▶ provide an inexpensive source of power
- ▶ maximize participation by domestic enterprises

- ▶ attract international investment
- ▶ construct new power plants
- ▶ meet World Bank/IMF commitments

The definition of any appropriate goals for privatization within Armenia can only rightly be done by its elected and appointed policy and decision makers. Thus, the selection of the priority goals for the remainder of the SHP project and other electrical sector sales must be done by the appropriate authority. This review does not suggest which goals should be priority. However, it is our intention to demonstrate how the priority setting will affect the structure of the program. This point is illustrated best by comparing the sale of electrical generating assets by two different countries.

In Argentina, the electrical sector was dominated by a few government-owned utilities. The country went through a process of dividing the large company into smaller sectors. The generating plants were divided into single plants for sale or, in the case of smaller projects, groups of assets for sale. Very small projects were generally given to the state or cooperative level jurisdictions as payments for debts.

The generation system was set up as a completely free trading commodity system, with sales into the grid done on an hourly basis, based on hourly bid prices. Therefore, the goal for the sale of the assets in Argentina was simply to generate cash and retire some of the very large debt that the country owed to banks and other external institutions.

Basically, the privatization process did not care whether the buyer rehabilitated it, generated electricity or took it out of service to use the facility and site for other purposes. The goal was to raise capital. There were, however, some portions of the stock payments and stock in the companies reserved for pension funds for the labor union workers. Although the goal was not to force rehabilitation or good management, it was expected that any investor who would make the highest bid on the asset would manage that asset in the best possible way. Thus, the retained stock would have value for the future.

Bolivia approached its privatization in a separate manner. The country had a need for rehabilitation of some projects and also needed a commitment to new plant construction. The country also had a much smaller system and national economy than Argentina.

Bolivia privatized its plants on the basis of a bidder's commitment to invest for rehabilitation and new capacity rather than maximizing cash proceeds for the projects. The national utility generating system was divided into three generation companies, each of which were privatized as a company. The government did not sell the entire generating company but retained a large minority portion of the plant for the State and pension funds. However, a controlling interest was sold to the highest ranked bidder.

In order to participate in the bidding, a group or company had to be pre-qualified. This included the submittal of financial and experience data. The interested parties in the bid were also clearly identified by this process.

The focus of the Bolivian privatization was to attract investment into the plants, rather than capital up front. The winning companies were selected based on their commitment of capital into the generating companies. The government gained value by owning shares of a company with a significant infusion of capital and improved and new sources of generating capacity.

The difference between these examples illustrates how the goals of privatization influence the type of privatization program pursued.

For the remainder of the Armenian SHP sales, the goals will define any changes to the process. If the primary goals are decided to be to maximize the payment to the government and rehabilitation of the projects, the Privatization Committee should offer a standard contract with an attractive minimum power tariff. The tariff can be structured in two parts; a lower tariff until the proscribed rehabilitation of the plant is completed and a higher tariff after completion.

If the SHP goals are to attract foreign investors, the process should be far more heavily advertised. More details on terms and potential power customers should be provided along with a standard contract with guarantees and incentives.

### **Recommendation 2: Promote the Privatization**

One clear shortcoming of the pilot privatization process was that the promotion of the tender offer was very limited. Although there was a reasonable turnout of local bidders, there was no participation by foreign interests. This was not completely from a lack of interest. At least one American company heard of the privatization, sent a fax to a published number and attempted to call. They did not get any information in return. Additionally, the project team was informed that a British company was interested in the privatization but learned about it too late to react.

The Privatization Committee needs to promote the process better to get more bidders and thus better fulfill the goals of the sale. This means that there must be more publicity, a responsible contact point for all interested bidders, and the Committee must provide a package of information on the projects to interested parties. None of these activities needs to be difficult or expensive. The efforts should be recouped in a higher purchase price for the projects. Even if no acceptable foreign bids are received in the next privatization, the promotion will provide a good framework of experience for further activities on the larger thermal and hydropower projects.

The publicity for the privatization needs to be started well before the actual tender is published. For the remainder of the SHP sales, this should happen as soon as possible. A press release should be published immediately. The press release can be brief, stating the necessary items to interest possible bidders which should include:

- ▶ The fact that Armenia has recently completed the privatization of seven projects.
- ▶ There will be 10 to 13 more projects to be sold in 1997 comprising about 20 MW.
- ▶ The projects are in need of various degrees of rehabilitation.
- ▶ The sale will be open to all qualifying bidders.
- ▶ The approximate announcement date for the next round of tenders is late May/early June.
- ▶ A contact for further information with a title, address, phone and fax numbers and electronic mail (e-mail) address.

Any group responding to the press release should be placed on a list for follow-up information to be sent as it becomes available. When the reference tender is published, a copy should be furnished to the parties that responded to the press release.

A list should be compiled to receive this first press release and further releases that will be made, such as when the reference tender is published. The list should include all the local news interests as well as a list of international parties. For the SHP program, this list would include trade associations and publications of the international hydropower industry. Within the US, there is a National Hydropower Association which would publish the press release to its members. Additionally, a US publisher of "World Wide Hydro Review" is looking for this type of news. There are counterparts to these US companies in Europe, including the publisher of "Hydropower and Dam Construction."

In addition to these companies, international Armenian associations should receive the press release. This action will provide the notice to business interests outside of the hydropower industry. These groups may be interested in owning power sources for their own use or may be simply seeking an investment in a kindred community. The incremental cost of having these groups notified is very small.

The most important element is to respond to those who express interest. This can be done by e-mail or fax. Almost all companies now have an e-mail address where information can be sent inexpensively.

When the actual tender offer is published and the dates for bidding are set, a second press release should be issued to the same list of individuals, in addition to the list of those that asked for the information. This press release should state which projects will be privatized, when bids are due and where the tender and additional information is available.

Contacting parties should receive a package of information, including the reference tender as published, plus the additional information suggested in this report. If possible, the information could be made available on a Worldwide Web Site on the Internet. This is an inexpensive method of providing information to foreign interests and should be available to the Privatization Committee. Alternatively, foreign parties should be asked to provide a shipping account number (e.g., Federal Express, DHL) to receive a hard copy. Since the information is relatively small, the costs of duplication to the Committee should not be significant. However, the receiver should be asked to pay for the shipping. Otherwise, many non-serious parties will request the information simply out of curiosity.

Publicity is a very important and often overlooked element of the privatization process. Note that there are many sources of potential buyers for SHPs, not just the traditional hydropower community. None of these should be overlooked.

### **Recommendation 3: Provide Clear Commercial Conditions**

#### *Reduce Unknown Conditions*

The technical conditions which were provided in the Reference Tender in the pilot SHP privatization were adequate but left a large number of items open to estimation or speculation. It is the nature of business to attempt to define unknowns and manage them better than other companies. However, a business becomes too speculative when there are too many unknowns. By limiting the unknowns, the number of interested parties should increase and the bid prices will increase as well.

There are a number of unknowns in bidding for the SHP privatization including:

- ▶ power market and price
- ▶ cost for water use
- ▶ transmission price
- ▶ hydrology
- ▶ cost of rehabilitation
- ▶ cost of operations.

These unknown conditions are in addition to the typical risks of doing business, including production and payment risk and other hazards. Some of these listed risks must be borne by bidder. The bidder will have some management and control over these risks and is in the best position to take them. Others should be defined by the government so that the bidder does not have to adjust their value placed on the project to account for the uncertainties.

Several of the items are clearly risk items for the bidder to take. The cost of rehabilitation and the cost of operations are in these categories. It is necessary for the bidder to estimate what their costs of fixing the plant will be and determine whether they will be able to make the enterprise profitable.

The hydrology for the projects, particularly for SHP's is a risk for the bidder. However, the Committee should provide the bidder with the best available information so that the bidder can examine the source of water, the variability in supply and the expectation as to the quantity available for the plant in normal, good and poor conditions.

Two elements which are completely outside the bidder's control and should be defined as soon as possible by the authorities are the transmission costs for wheeling to third party customers and the cost for using water to be paid to the Ministry of Agriculture and Food. Due to the high degree of irrigation in Armenia, it is necessary to have a contract with the Ministry of Agriculture and Food for the use of the water. As the hydropower project is not consuming the water, this permit should mostly serve to protect the owner's rights and also make sure that their operation does not conflict with other users with senior rights to the water. A payment for such a permit is reasonable, but it should be very minor, as the water is not consumed and places no significant burden of enforcement on the Ministry. This is currently an open issue, such that bidders have no idea what this permit will cost. This issue should be addressed as soon as possible so that this unknown is removed. To do otherwise will cause bid prices to be reduced to account for this uncertainty.

The cost and ability to transmit power from a generator to a third party customer should also be established. A policy on direct sales to consumers and transmission prices should be adopted so that a prospective bidder that might want to wheel the power to another purchaser, or its own industry, will know whether such an action is possible and what the transmission cost associated with such a transaction will be. If it is not defined, a "worst case" will likely be estimated by the bidder, resulting directly in a lower bid price for the project.

A major unknown for any potential bidder is the price which they will receive for the power generated. It is clear that Armenergo will buy the power; however, it is not clear whether this is a right or an obligation over the ten year period. This must be clarified. The actual price to be paid by Armenergo is not clear at all. No rate has been established but there are some indications that an average cost of system production (about \$0.025 per kWh) will be paid. Lack of clarity on this point will be reflected in the bid price.

From interview information, consideration is being given to requiring a bid price for power sold from the projects as well as a bid price for buying the project. While this adds another element of competition to the bidding, it will also make the selection of a bidder much more complex. There will need to be some formula which combines the energy purchase price and the bid price. Weighing these will not be easy. This step is not recommended.

To make the process more open and secure, it is suggested that an offering tariff price be made for the power from the rehabilitated plants. The tariff could consist of two parts - a single tariff for any pre-rehabilitation power from the plant and a post-rehabilitation rate. The later rate should be higher and reflect the costs of new sources of power. Experience and studies of rehabilitation and the cost of new power should be used to set this rate. It is also recommended that the rate be made the same for all future SHP's privatized. While the cost

of rehabilitating the plants is quite variable, the differences in plant values should be reflected in variable bid prices for the projects. In other words, bidders should be prepared to pay more for projects in better condition, if the price for power is the same. Having a standard rate is more transparent than attempting to get agreement and approval for many different small plants.

### *Clearly Define the Rules*

Particularly from a potential foreign investor point of view, but also for domestic investors, the clarity of the rules could be improved. The additional clarifications can be described in the detailed package of information recommended to be provided to interested bidders. This additional information does not need to be published.

In particular, the ability for a foreign investor to use vouchers for the privatization should be clarified. This should be done specifically for the SHP privatization. Conflicting information on this point was received from different knowledgeable individuals. A foreign investor may consider that they are at a disadvantage if domestic groups can use vouchers purchased at a discount while the foreign group cannot. Although this may not preclude participation by foreign groups, it will send a negative signal to the international investment community.

Any preference conditions for certain groups should be clearly disclosed. If there are legal requirements for preference given to SHP operating collectives, this should be stated. Disclosed preferences are not a barrier to bidding; however, if they are not disclosed, the reputation as to the validity of the process will be in question and future privatization will receive less participation.

The method for selecting the winning bidder should also be clearly defined. Typically, in a privatization, the highest bidder who meets the tender requirements is the winner. If the unknowns which are discussed earlier in this report are removed, the highest bidder will be the winner. This removes controversy from the process. The key point is that however the winner is to be selected, the method must be disclosed to all of the potential bidders.

The actual requirements for the bidders were very well presented in the pilot program. Some consideration to expanding the explanations should be given in the next round for potential foreign interests that may not understand Armenian institutions as well as domestic individuals. For example, a better description of the registration requirements and process for foreign bidders should be included so that this will not need to be researched by each bidder.

Any possible restriction on the future sale of the project should be included. It appears from the Reference Tender that there is no such restriction. The only reason to add in such a restriction would be to minimize the use of so-called "middlemen" or speculators. This could be done by placing a one to two year restriction on resale. It is foreseeable that a foreign investor, if they could not directly use vouchers, could use a domestic company in Armenia to win the bid using vouchers and then purchase the plant at a discount over the cash price that would have had to have been paid by the foreign company during the privatization tender.

*Clearly define what is being purchased*

One element where the tender documents could be more clear is to comprehensively describe what assets are actually being tendered. What property rights go with the purchase? Does the bidder have all rights to the land or only for SHP operation? If the bidder does not operate the plant in some future time, what rights do they retain? Since land ownership in Armenia is different from other countries, some clear explanation will be helpful for the bidder.

This explanation should include:

- ▶ The lands the winner will receive (this was included in the prior tender);
- ▶ That the winner receives all buildings and equipment, in existing condition, with salvage rights;
- ▶ Any commitment to the current operating staff that law or policy requires;
- ▶ The period and condition of ownership; and,
- ▶ Specific rights to the lands the project occupies.

It is also stated in the tender documents that a license will be granted to the bid winner. A draft of this license should be included in the bidder's information package, or at least a summary of the conditions which the license will contain. This is very important to provide prior to bidding.

As already briefly discussed, the power sales possibilities should also be addressed in the information package. If the bidder is free to arrange a retail sale to a third party, it should be clearly stated along with the current retail tariffs paid. It will be the bidder's responsibility to assess the likelihood of finding such a buyer. Further, any transmission costs which will have to be paid for providing power to a third party should be identified.

It is recommended that a standard wholesale tariff be offered by Armenergo to the SHP's which are privatized. This will provide a standard base for all bidders to consider. Having the bidder also specify its price for power from the rehabilitated projects is cumbersome to evaluate and will not be a clear way to determine the bid winner. If a standard tariff is set, the addition of currency indexation would be a very attractive addition for a foreign investor. This also provides inflation protection of some sort for the domestic bidder.

Finally, it is recommended that the Committee include a provision that foreign investors provide a local contact that will receive official notices and be the point of contact for potential ownership. This removes any communication problems from the responsibility of the Committee.

#### **Recommendation 4: Provide Complete Technical/Bid Information**

The information which was provided in the reference tender was acceptable, but did not provide enough data for evaluation by most project purchase standards. Most companies are going to want far more information in certain areas than was available in the pilot SHP privatization.

As noted under the recommendation for more promotion of the privatization, after the tender is published, a more detailed information package should be provided to interested parties, either by pick up at a designated office, Internet, or by bidder pre-paid shipping. The package of information is not expected to be larger than a typical sized report, but is very important for presenting a valid impression of the process.

It is highly recommended that the following technical details be included in this package. Some of this information was briefly discussed in Section 3.0.

- ▶ **Project drawings:** A plan and section of critical project features such as the powerhouse, dam and water conveyance facilities will tell the bidder a great deal. These can be copies of any existing drawings and need not be of high quality. Some specification is far better than none.
- ▶ **Hydrology:** The source of flow should be clearly identified. If it is an irrigation canal or pipe, the conditions when flow is released should be defined. If the project is on a river, available hydrology for the river should be provided. It is understood that a great deal of hydrological information exists for the country. Information specific to the project is very necessary for a bidder, as the water is their fuel supply. The last ten years of data should be supplied if possible, to correspond to the last ten years of production information.
- ▶ **Historical production:** In the reference tender, only the last ten years' average was provided. This is not sufficient as it does not indicate any trend or the possibility that the plant produced no power for the last several years. Annual production figures should be provided. Historical production on a monthly basis, if available, is preferable.
- ▶ **Equipment characteristics:** The manufacturers of the major equipment (e.g., the turbine and generator) should be indicated.
- ▶ **Irrigation impacts:** A clear explanation of how any irrigation or other domestic water supply need will impact the project should be described.
- ▶ **Environmental considerations:** Any environmental conditions for compliance should be clearly identified. This includes any flows which must remain in the stream, any restrictions on diversion or other conditions which would affect plant production.

A copy of the tender application should be included as part of the package. Instructions for filling out the form should be provided and a method for posing questions to the Committee should be described.

As there will be some contracts necessary for the successful bidder to complete, it is beneficial to include drafts of these contracts in the bidder's information package. Providing the contracts will help to clearly identify the rights and responsibilities of all parties including the expectations of the Committee and other governmental authorities.

Draft contracts which should be included in the package include the Property Registration and Denationalization Contract which was cited in Section 4.3 of the Reference Tender for the pilot projects.

A draft power contract from Armenergo should also be included in the package so that the buyer can read and understand the contract. Inclusion of this information helps to remove as many unknown conditions as possible for the potential bidders.

Finally, the payment conditions which were provided in the reference tender for the pilot projects were thorough and complete. These should again be made available to the bidders.

#### **Example of a SHP Sale Bid Package**

As an example of information which can be provided as part of the bid package, the following demonstrates the approach used in one US sell-off. During mid-1996, a bank repossessed four hydropower projects located in Northern California. The owner had borrowed money to construct the projects. Due to a seven year dry period and excessive costs during construction, the projects could not pay back the bank loans.

In order to recoup some of their capital, the bank held a sale similar to the privatization done for the SHP's in Armenia. The bank notified American parties who may be interested in purchasing the projects. Packages of detailed information were provided to the interested parties and site visits were scheduled with the plant operators at the option of the bidder.

While this sale was a private transaction, the sale was done by the bank on a bid basis, similar to a privatization. A date was set for the bid to be submitted and the highest bidder entered final negotiations to complete the sale. The projects were sold as a group which comprised a total of about 10 MW.

The outline of the bid information package for the projects was as follows:

#### Volume I: Terms and Supporting Information

- ▶ Summary information: A description of the terms of sale and historical performance were provided.

- ▶ Project participants: This section described the project owners, operators and other important parties to the transaction.
- ▶ Facilities: This section described in detail the project facilities, including equipment and civil works and provided general drawings for each of the four facilities. A section which listed any project defects or problems was also included.
- ▶ Power sales history: The monthly power sales and revenues for each of the projects was provided.
- ▶ Twenty-five year hydrology and rainfall for each of the projects was included. Where hydrological information was not available, the rainfall could be used to determine whether any particular year was wet or dry.
- ▶ Agreements: A description of each of the project power sales contracts was provided.
- ▶ Federal license and contracts: A summary of the contracts and license were included. Project specific agreements for lands, transmission, and other details for each project were also provided.
- ▶ Historical financial statements: The projects were approximately seven years old. The financial statement for each project for this time period was provided.

#### Volume 2: Supporting Agreements

Copies of the agreements which were summarized in volume 1 were included for the review of bidders. Not all agreements for each project were included but they were made available if the bidder requested them.

#### Volume 3: Pro Forma Financial Statements

The bank had developed a series of financial projections for each project which the owner could use to determine the project value. These are not often found in this type of offering but were helpful for the bidder to understand some future conditions for the projects.

There were some issues at the project which were unknown conditions for the bidders and had to be assessed by each. For some of the projects, fixed prices were not included in the power contracts. The power rates floated with the wholesale market exchange rates for California, which sometimes fell as low as US \$0.02 per kWh. Thus, the bidder had to estimate a future price which they felt would be paid for power, a significant unknown condition. There were also some technical conditions which caused problems for the bidders. One project sold its power through a substation of another project owned by another

company. The other project was old and tripped off-line regularly. When the old project went off-line, so did the plant which was being sold thus causing a periodic loss in revenue. Another of the projects received its water from the tailrace of an upstream project. The upstream project was owned by another party. If the upstream project was off-line for repairs or for another reason, the project being sold was also off-line. Therefore, the condition of the upstream project was a problem over which the downstream owner had little or no control. Finally, one of the projects had a pipeline that traversed a geologic slide area. Providing regular repair to alleviate this problem was expensive and there was a risk of a large land slide damaging the plant.

Despite these problems and risks, the bank received six bids for the projects. The bank considered four of the bids serious and two frivolous. The highest bid was about 50% greater than the other serious bids. A sale was successfully completed in about four months after the bid. The bidders were allowed about 60 days from the time information was available to prepare and submit a bid.

## **5.0 IMPLICATIONS FOR THE PRIVATIZATION OF LARGER PROJECTS**

Finally, the lessons learned during the privatization of the SHPs will be valuable as Armenia proceeds in the privatization of its larger hydropower and thermal projects. Most of these recommendations will apply to the larger projects, particularly for the larger hydropower projects.

Several points are offered for future consideration outside of those found in Section 4.0.

1. The goals for the privatization of the larger projects must be carefully considered before the process is designed. Depending on whether the most important goal is rehabilitation, cash realized by the Republic or availability as a long-term low cost power source, the rules and parameters supplied to the bidders will be different.
2. The larger projects must have complete data. This will be more important than the smaller projects. Bidders will want to see specific information on project performance and will want to be able to estimate the efficiency of the plant and possibly individual units at the plant. Any studies that have been done on the projects for rehabilitation should be provided to the bidders. Any unknown information or conditions will definitely lower the bid prices received.
3. Make the power sales option clear. For the larger projects, quite likely the only logical sale will be to the larger grid of Armenenergo. A target tariff which is defined for the project will provide a solid basis for the bidders to evaluate and prepare the bids and will provide an even basis for the Committee to select a bidder.

4. Armenia should consider holding a minority share in the larger project. After rehabilitation, there may be a capital market for the sale of the remainder of the plant. Some of the plant company stock could also be put into a pension fund or any other similar funds held by the government.
5. Define any rehabilitation expectations clearly. If rehabilitation of the individual plants is a primary goal, the rehabilitation should be described in some detail so that the appropriate work is done by the winning bidder.
6. Consider carefully how any of the cascades are privatized. Currently, the Sevan-Hrazdan cascade is undergoing studies for environmental recovery of the lake. This introduces a large uncertainty about the amount of power the plant can generate. If this cascade is privatized prior to complete resolution of these issues, it is likely that full value of the cascade will not be realized by the government. Further, it may make sense to bundle all of the Vorotan Cascade together or to divide it into two or more groups. Generally, there should be some efficiency by the same group operating all of the plants, however the situation should be studied first before making a final decision.
7. Consider making the privatization process two-stage. The first stage should be a pre-qualification of bidders. The interested party should submit its team, qualifications, and financial information. The best five or six teams can then be invited to bid. The second stage is to accept the actual bids.

The use of the two-stage process allows the Committee to identify interested parties and determine how many bids they can expect. If they do not receive quality submittals in the first stage, changes can be made to revise the process and improve the privatization parameters (e.g., wholesale rate offered, criteria for evaluation of the bids).

Finally, it is suggested that the Ministries and Armenian government consider examining in detail the Bolivian privatization activity as an example relevant to Armenia for how to approach privatization in the energy sector. In 1995-1996, Bolivia, a country with approximately the same population as Armenia and less infrastructure, privatized its utility. Rehabilitation of the generating equipment was of primary interest to provide more capacity to the country in a short period of time. A premium was placed on a bidder's capital contribution to the generating company being privatized. The government did not receive large sums of capital in the short term but retained a minority position in the generating companies, which will have greater value as the rehabilitation progresses. Further, this process had widespread public support due to the minority share ownership provided to the state pension fund. Given the market size and need for rehabilitation of the energy sector, the Bolivian experience appears relevant for Armenia to help achieve a proper and successful privatization process.

Source: Tender information and information from bids received.

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**APPENDIX B**

**B.1 International Mergers & Acquisitions Data ..... B-1**

**B.2 Southern California Edison Generation Plant Sale ..... B-5**

**Mergers & Acquisitions Transactions**  
**Completed Non US Targets**  
**1992 - March, 1997 (SIC Codes 4911 & 4939)**

Date	Target Name	Acquiror Name	Target Nation
February-97	London Electricity PLC	Entergy Power UK(Entergy Corp)	United Kingdom
February-97	Energy Group PLC	Shareholders	United Kingdom
January-97	Northern Electric PLC	CE Electric UK PLC(CalEnergy)	United Kingdom
January-97	East Midlands Electricity PLC	DR Investments(Domion)	United Kingdom
November-96	Norweb-Electrical Retail Opera	Kingfisher PLC	United Kingdom
October-96	Darrington Quarries Ltd	Investor Group	United Kingdom
July-96	British Energy	Investors	United Kingdom
July-96	PowerGen PLC-Crt Generating	Eastern Group(Hanson Trust)	United Kingdom
June-96	National Power-Electricity Gen	Eastern Group(Hanson Trust)	United Kingdom
June-96	Midlands Electricity PLC	Avon Energy(General Public)	United Kingdom
April-96	Seaboard PLC	Central & South West Corp	United Kingdom
February-96	South Wales Electricity PLC	Welsh Water PLC	United Kingdom
December-95	Norweb PLC	North West Water Group PLC	United Kingdom
December-95	First Hydro(National Grid Co)	Mission Energy Co(SCEcorp)	United Kingdom
December-95	Drakelow C and High Maruham	Eastern Group(Hanson Trust)	United Kingdom
December-95	South Western Electricity PLC	Southern Co Inc	United Kingdom
December-95	National Grid Company PLC	Shareholders	United Kingdom
November-95	Manweb PLC	Scottish Power PLC	United Kingdom
October-95	Eastern Group PLC	Hanson PLC	United Kingdom
July-95	Furst Specialist Contracting	Omega Earthing Ltd	United Kingdom
January-95	Power Plant	First Industries(Nevis Group)	United Kingdom
September-94	Peterborough Power Plant	Eastern Electricity PLC	United Kingdom
March-94	European Gas-Power Station	Regional Power Generators Ltd	United Kingdom
June-93	Northern Ireland Electricity	Investors	United Kingdom
March-93	BAA-Electricity Distrib Assets	London Electricity PLC	United Kingdom
February-93	Roosecote Power Station	Mission Energy Co(SCEcorp)	United Kingdom
June-92	Belfast West Power Ltd, I Other	Investor Group	United Kingdom
April-92	Cookeeragh Power Holdings	Investor Group	United Kingdom
March-92	Keadby Power Ltd	Norweb Power(Norweb PLC)	United Kingdom
March-92	Northern Ireland Elc-Power Stn	British Gas PLC	United Kingdom
March-92	Northern Ireland Elc-Power Stn	Investor Group	United Kingdom
June-96	Khanom Electricity Generating	Electricity Generating	Thailand
June-94	Electricity Generating	Investors	Thailand
December-93	JV-Royal Taiwan, Undisclosed JV	Undisclosed Acquiror	Taiwan
September-96	Vattenfall Electrotec AB	Svenska ABB(Asea Brown Boveri)	Sweden
July-96	Skandinaviska Elverk(Incentiv)	Gullspangs Kraft AB	Sweden
June-96	Nykoping Energi AB	Vattenfall AB(Sweden)	Sweden
May-96	Graningeverkens AB	Electricite de France {EDF}	Sweden
May-96	Hudiksvalls Energiverk	Halsingekraft(Gullspangs Kraf)	Sweden
April-96	Jarfalla Energi(Jarfalla)	Graningeverkens AB	Sweden
May-95	Vanersborg-Power Station	Vattenfall AB(Sweden)	Sweden
November-94	Molkon Kraft	Gullspangs Kraft AB	Sweden
September-94	Avesta Energi	Stockholm Energi(Stockholm)	Sweden
April-93	Eksjo Energiverk-Power	Smalands Kraft AB	Sweden
January-93	Vannas Kraft AB(Sydskraft A/B)	Skelleftekraft	Sweden
January-93	Bakab Energi	Sydskraft A/B	Sweden
December-92	Stora Kraft AB(Stora)	Gullspangs Kraft AB	Sweden
November-92	Solna & Sundbyberg	Vattenfall AB(Sweden)	Sweden
June-92	Haelsingekraft AB	Gullspangs Kraft AB	Sweden
June-92	Uddeholm Kraft Ab(AGA AB)	Gullspangs Kraft AB	Sweden
November-96	Cia Sevillana de Electricidad	ENDESA(SEPI/Spain)	Spain
November-96	Fuerzas Electricas de Cataluna	ENDESA(SEPI/Spain)	Spain
October-96	Carburos Metalicos of Spain	Air Products & Chemicals Inc	Spain
January-96	Iberian Hy Power Amsterdam BV	Mission Energy Co(SCEcorp)	Spain
December-95	Hidruna I(Empresa Nacional)	Empresa Nacional Hidroelectric	Spain
December-94	ERZ(ENDESA/INI/Spain)	ENDESA	Spain
December-94	Endesar	ENDESA	Spain
December-94	Union Fenosa-Power Plants(2)	Hidroelectrica del Cantabrico	Spain
April-94	Hidruna I(Hidroelectrica Cata)	Empresa Nacional Hidroelectric	Spain

Date	Target Name	Acquiror Name	Target Nation
January-94	Union Fenosa-Ribadelago	ENDESA	Spain
March-92	Salto del Nansa	Investor Group	Spain
November-96	Cullinan Hldgs-Electrical Div	Undisclosed Acquiror	South Africa
January-97	TASS	Velosi(Malaysia) Sdn Bhd	Singapore
July-92	Undisclosed Electric Services	Isolux SA	Portugal
February-97	Magellan Power(Magellan Capit)	East Asia Diesel Power Corp	Philippines
September-96	Magellan Capital Holdings Corp	Ultrana Energy and Resources	Philippines
October-95	Mactan Power,M&M Holdings	Mabuhay Holdings Corp	Philippines
July-95	Northwest Hldgs & Resources	East Asia Power(Van der Horst)	Philippines
June-94	Atlas Cnsld Mining & Dvlp-Cebu	Toledo Power Corp	Philippines
August-93	Luzon Power Associates	CMS Generation Co	Philippines
February-97	Electro Sur Medio(Peru)	Investor Group	Peru
July-96	Empresa de Generacion Electric	Dominion Peru SA(Dominion	Peru
February-96	Distribucion Electrica de	Distrilima	Peru
December-95	Empresa de Generacion Termica	Generalima	Peru
October-95	EDEGEL(Peru)	Generandes	Peru
April-95	ElectroPeru-Cahua Electric Pla	Sindicato Pesquera del Peru	Peru
August-94	Eldenor(Peru)	Inversiones Distrilima SA	Peru
August-94	Empresa de Distribucion de	Ontario-Quinta AVV	Peru
January-97	Skankraft Holdings AS	Hafslund ASA	Norway
October-95	Sauda Energiverk	Oslo Energi	Norway
October-94	Norgeskraft AS	Norsk Energallianse AS	Norway
June-94	Nortelco A/S	Sherman Goetz & Associates	Norway
May-92	Maudal Kraftlag	Lyse Kraft	Norway
December-96	Electro Power	Central Power Ltd	New Zealand
September-96	Capital Power Ltd(TransAlta)	Energy Direct Ltd(Hutt Valley)	New Zealand
August-96	Wairapa Electricity(Amuri)	Amuri Corp Ltd	New Zealand
July-96	Bay of Plenty Electricity	Power New Zealand Ltd	New Zealand
June-96	Capital Power Ltd	TransAlta Energy Corp	New Zealand
October-95	Wairapa Electricity	Amuri Corp Ltd	New Zealand
October-95	Taranaki Energy	Powerco Ltd	New Zealand
September-95	Taupo Electricity,Taupo Genera	Trustpower(Tauranga Power Tr)	New Zealand
December-94	Rotorua Electricity	Trustpower(Tauranga Power Tr)	New Zealand
June-94	Waitemata Power	Valley Power(Thames Valley)	New Zealand
March-94	Trustpower Ltd	Tauranga Power Trust	New Zealand
September-93	Wairapa Electricity	Investors	New Zealand
	Power New Zealand Ltd	Mercury Energy Ltd	New Zealand
June-92	Frigem	EGD	Netherlands
Effective	Target Name	Acquiror Name	Nation
July-96	Windhoek Electrical Works	Asea Brown Boveri AG	Namibia
March-97	Platinum Power(Malaysia) Sdn	Venture Capital Sdn Bhd	Malaysia
January-97	Daqing Engineering Development	Malaysia Electric(Kuala)	Malaysia
January-97	Unique Connection Sdn Bhd	Malaysia Electric(Kuala)	Malaysia
July-94	Genting International Paper	Genting Berhad	Malaysia
March-94	Sikap Ventures Sdn Bhd	Malakoff Bhd	Malaysia
March-94	Sikap Power Sdn Bhd	Malaysian Resources Corp Bhd	Malaysia
September-92	Malaysian Resources Corp Bhd	Investor Group	Malaysia
October-96	Undisclosed Coal-fired Power	Ispat International	Kazakhstan
August-96	Almatyenergo(Kazakhstan)	TRACTEBEL SA	Kazakhstan
August-96	Pavlodar Power Station	White Swan Ltd	Kazakhstan
April-96	Finidreg(Ansaldo/FINMECCANICA)	De Sanctis Costruzioni SpA	Italy
July-95	Ilva Centrali Elettriche(Ilva)	Finanziaria Regionale Valle	Italy
August-94	Societe Energheia	L'Air Liquide SA	Italy
December-93	Cimel	ABB Sae Sadelmi(ABB Technomas)	Italy
March-92	Sie Systems	Hartmann & Braun Italia	Italy
December-95	Stanvac Indonesia PT	Medco Energy Corp	Indonesia
March-95	Freeport Indonesia-Power Plant	Punchak Jaya Power	Indonesia
October-96	Dunamenti Eromu Rt(Hungary)	POWERFIN SA(TRACTEBEL)	Hungary
July-96	Energy Services(Dunaferr)	Tenneco Inc	Hungary
July-96	Tiszai Eromu Rt(Hungary)	AES Summit Generation Ltd(AES)	Hungary
June-95	Caepel Power Plant(CMS Mgmt)	PowerGen PLC	Hungary
June-95	Csepele Eromu Rt	PowerGen PLC	Hungary
January-97	Consolidated Electric Power	Southern Electric Intl	Hong Kong
January-95	Access Power Ltd	Com-Tek Resources	Hong Kong

Date	Target Name	Acquiror Name	Target Nation
June-96	Reifenwerk GmbH(Nina Inv)	Investor	Germany
November-94	Gasversorgung Scheuditz GmbH	Investor Group	Germany
September-94	Vereinigte Energiewerke AG	Investor Group	Germany
August-94	Bayernwerk AG(Bavaria)	VIAG AG	Germany
August-94	Elektrifizierungs und Ingenier	Investor Group	Germany
June-94	Vereinigte Mitteldeutsche(WG)	Investor Group	Germany
April-94	ENAG(WG), OTEV(WG), SEAG(WG)	Bayernwerk AG(Bavaria)	Germany
March-94	Meag	Investor Group	Germany
March-94	Westmecklenburgischen	Hamburgische Electricitats	Germany
February-94	Institut fuer Energieversorgug	Kema Group	Germany
February-94	ESSAG,WESAG,EVS	RWE Energie(RWE)	Germany
February-94	Elektrotechnische Handels	CDME(CFDA SA/Pinault-Printemp)	Germany
January-94	Frankenluk-Electricity Distn	Thuega AG	Germany
March-93	Nebelhambahn AG	OBB	Germany
February-93	Eschweiler Bergwerk-Station	Steag AG(Ruhrkohle AG)	Germany
December-92	Ebag(Germany)	Berliner Kraft-und Licht	Germany
June-92	Harpener AG(Omni Holding AG)	Investor Group	Germany
February-96	Zellweger Sauter Energie SA	Deutsche Zaechler GmbH	France
May-93	SAPLELEC-Hydro Plants	SHEM(Societe Nationale)	France
January-93	SNEF Electric Flux	Investor Group	France
May-92	AMCR	Cie Gen d'Installation Elec	France
May-92	Montelec	GTIE(Cie Generale des Eaux SA)	France
January-97	Isalmen Energialaitos	Savon Voima Oy	Finland
January-97	Lansivoima Oy	Imatran Voima Oy(Finland)	Finland
August-96	Fellessanlegget Kykkelsrud	Hafslund ASA	Finland
November-95	Hameen Sähkö Oy	Vattenfall Oy(Vattenfall AB)	Finland
April-95	Jyllinkosken Sähkö Oy	Lounais-Suomen Sähkö Oy	Finland
February-95	Hanko-Electricity Plant	Lounais-Suomen Sähkö Oy	Finland
June-94	Imatron Voima Oy-Rgional	Savon Voima Oy	Finland
June-94	Imatron Voima Oy-Rgional	Keski Suomen Valo	Finland
May-94	Imatran Voima Oy-Power Line	Suur Savan Sähkö Oy	Finland
February-94	Veistiluodon Voima(Veitsiluot)	Perus Voima	Finland
February-93	Terrasilvana AB Oy	Lounais-Suomen Sähkö Oy	Finland
December-92	Securus Oy-Assets	KOP	Finland
November-92	Pohjolan Voima-Elec Distn Ntwk	Teollisuuden Voima Oy	Finland
September-92	Mantan Voimalaitos	Vapo Oy(Finland)	Finland
September-92	Tamturbine Oy	Kvaerner Energy(Kvaerner A/S)	Finland
January-92	Keijarven Sähkö Oy	Leppakosken Sähkö	Finland
December-96	Nasr Public Utilities &	Investor Group	Egypt
March-97	Power Services Ecuador	Marathon Power Tsachila Ltd	Ecuador
December-92	Emelec	Investor Group	Ecuador
June-96	Enron Corp-Puerto Plata Power	Enron Global Power & Pipelines	Dominican Rep.
June-95	Cia de Electricidad de Puerto	Investor Group	Dominican Rep.
December-96	Domínica Electricity Services	Commonwealth Development Corp	Dominica
June-95	Teamtech	GI Electronics(PBI Holding)	Denmark
May-93	KE-Safematic	Burgmann Group	Denmark
January-93	Nordfab(Active)	{DISA}	Denmark
May-94	Energetické Centrum Kladno A/S	Investor Group	Czech Republic
December-96	Chivor(Colombia)	Energy Trade and Finance Corp	Colombia
December-96	Colombia-Betania Hydroelectric	Investor Group	Colombia
December-96	Yangzhou Xinxing Power Co	Shanghai Diesel Engine Co Ltd	China
February-96	Enron Corp-Hainan 150 Megawatt	Singapore Power Pte(Singapore)	China
June-94	Guangdong Power International	Guangdong Investment Ltd	China
February-94	Shaoguan Pingshi Power Plant	Hai Yue Power Investment	China
January-96	Central Termoelectrica	Investor Group	Chile
March-97	Yoho Power Ltd(Synex)	Investor Group	Canada
December-96	Hydro-Pontiac Inc	Great Lakes Power Inc(Brascan)	Canada
October-96	Canadian Niagra Power Co	Fortis Inc	Canada
October-96	AEC Power Ltd	TransAlta Energy Corp	Canada
April-96	Great Lakes Power Inc	Brascan Ltd	Canada
December-95	Megener(Boralex,3089-8183 Que)	Boralex Inc	Canada
November-95	Hydro-Quebec Intl-Power System	Mitsubishi Electric Corp	Canada
September-95	PEI Energy-Prodn Facilities	Trigen Energy Corp	Canada
September-94	Maritime Electric Co	Fortis Inc	Canada

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Date	Target Name	Acquiror Name	Target Nation
December-93	Buckingham Hydroelectric Plant	Cascades Energie Inc(Cascades)	Canada
June-93	Centra Power Inc	Canadian Utilities Ltd	Canada
August-92	Nova Scotia Power Corp	Investors	Canada
March-97	Nacional Energetica SA	Investor Group	Brazil
November-96	{CERJ}(Brazil)	Investor Group	Brazil
May-96	Light SE(Brazil)	Investor Group	Brazil
July-95	Espirito Santo Centrais Elec	Investor Group	Brazil
February-97	Spring Assets Ltd	Malakoff Bhd(Sikap Power Sdn)	Br. Virgin I.
December-96	Bolivian Power Co Ltd	NRG Energy Inc	Bolivia
January-96	Electricidad de La Paz SA,	Iberdrola Inwestimentos	Bolivia
July-95	Empresa Guaracachi SAM	Energy Initiative Inc	Bolivia
July-95	Empresa Valle Hermoso(Empres)	Investor Group	Bolivia
October-96	TRACTEBEL SA	Societe Generale de Belgique	Belgium
December-94	Nizet	Cie d'Enterprises	Belgium
August-94	FOS Engineers En Contractors	Cegelec Comsip(Ceg/Ale Als/Fr)	Belgium
April-93	Freeport Power Co	Southern Electric Intl	Bahamas
August-93	Gemeinschaftskraftwerke	Oesterreichische	Austria
September-96	Energy Brix Australia	Investor Group	Australia
March-96	Yallourn Energy(Victoria/AU)	Investor Group	Australia
January-96	Citipower(Energy Corp)	Energy Corp	Australia
December-95	Powercor Australia(Victoria)	Investor Group	Australia
December-95	Eastern Energy(Victoria)	Texas Utilities Co	Australia
October-95	Solaris Power(Victoria)	Investor Group	Australia
September-95	United Energy(Victoria)	Investor Group	Australia
February-95	Energy Info Tech(Victoria)	Integrated Sys Solutions	Australia
March-94	Queensland-Gladstone Power Stn	Investor Group	Australia
November-93	Qingyuan Qiaoyuan Power Plant	Amcol Holdings Ltd	Australia
December-96	Central Dock Sud SA	Investor Group	Argentina
July-96	Empresa de Energia v Vapor SA	CMS Generation Co	Argentina
April-96	Edeer(Argentina)	Inversora Distribucion de	Argentina
March-96	Ave Fenix Energia SA(Merrill)	Charter Oak Energy Inc	Argentina
January-96	Empresa Electrica de San Juan	Agua Negra SA(Emec SA/Sigdo)	Argentina
May-95	Empresa Distribuidora	Electrica La Rioja	Argentina
April-95	Hydroelectrica Futaleufu SA	Aluminio Argentino SAIC	Argentina
January-95	Districuyo	Electrigral	Argentina
January-95	Santiago del Estero-Electric	Houston Industries Energy Inc	Argentina
September-94	Hydroelectrica Ameghino SA	Hydroelectrica del Sur	Argentina
June-94	Agua y Energia-Elec Generating	Investor Group	Argentina
January-94	Hydroelectrica Piedro de	Investor Group	Argentina
July-93	Central Hidroelectricas Cerros	Patagonia Holdings SA	Argentina
July-93	Argentina-El Chocon, Arroyito	Hidroinvest SA(ENDESA/Chile)	Argentina
July-93	Hidroelectrica Alicura SA	SEI y Asociados de Argentina	Argentina
June-93	Transener SA	Investor Group	Argentina
May-93	Argentina-Power Plant	Investor Group	Argentina
December-92	SEGBA-Dock Sud Power Plant	Polledo	Argentina
November-92	SEGBA-La Plata Electric Distn	Investor Group	Argentina
September-92	Central Termica Guemes SA	Powerco SA	Argentina
September-92	SEGBA-Pedro de Mendoza Plant	Investor Group	Argentina
August-92	Empresa Distribuidora Norte	Electricidad Argentina SA	Argentina
August-92	Edesur SA(SEGBA)	Distrielec Inversora SA	Argentina
May-92	Central Costanera	Investor Group	Argentina
March-92	Central Puerto SA(SEGBA/AR)	Investor Group	Argentina

Source: Securities Data Company, Inc. (201) 622-3100

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**APPENDIX B**

**Southern California Edison Generation Plant Sale**

## INTRODUCTION

On November 21, 1996, the Boards of Directors of Edison International and its wholly-owned electric utility subsidiary Southern California Edison Company ("SCE") approved a plan to auction the 12 SCE-owned power plants (collectively the "Plants") located in SCE's service territory. The Plants represent 100% of the utility's natural gas and oil-fired generation assets. Edison International and its affiliates will **not** participate in the auctions for these assets. The first auction is scheduled to begin in the second quarter of 1997.

The Plants to be sold have a combined dependable summer operating capacity of about ten thousand megawatts and a combined book value of approximately \$700 million. The generating facilities to be sold are:

- Alamos Generating Station
- Cool Water Generating Station
- Ellwood Energy Support Facility
- El Segundo Generating Station
- Etiwanda Generating Station
- Highgrove Generating Station
- Huntington Beach Generating Station
- Long Beach Generating Station
- Mandalay Generating Station
- Ormond Beach Generating Station
- Redondo Generating Station
- San Bernardino Generating Station

## RESTRUCTURING THE CALIFORNIA ELECTRIC UTILITY INDUSTRY

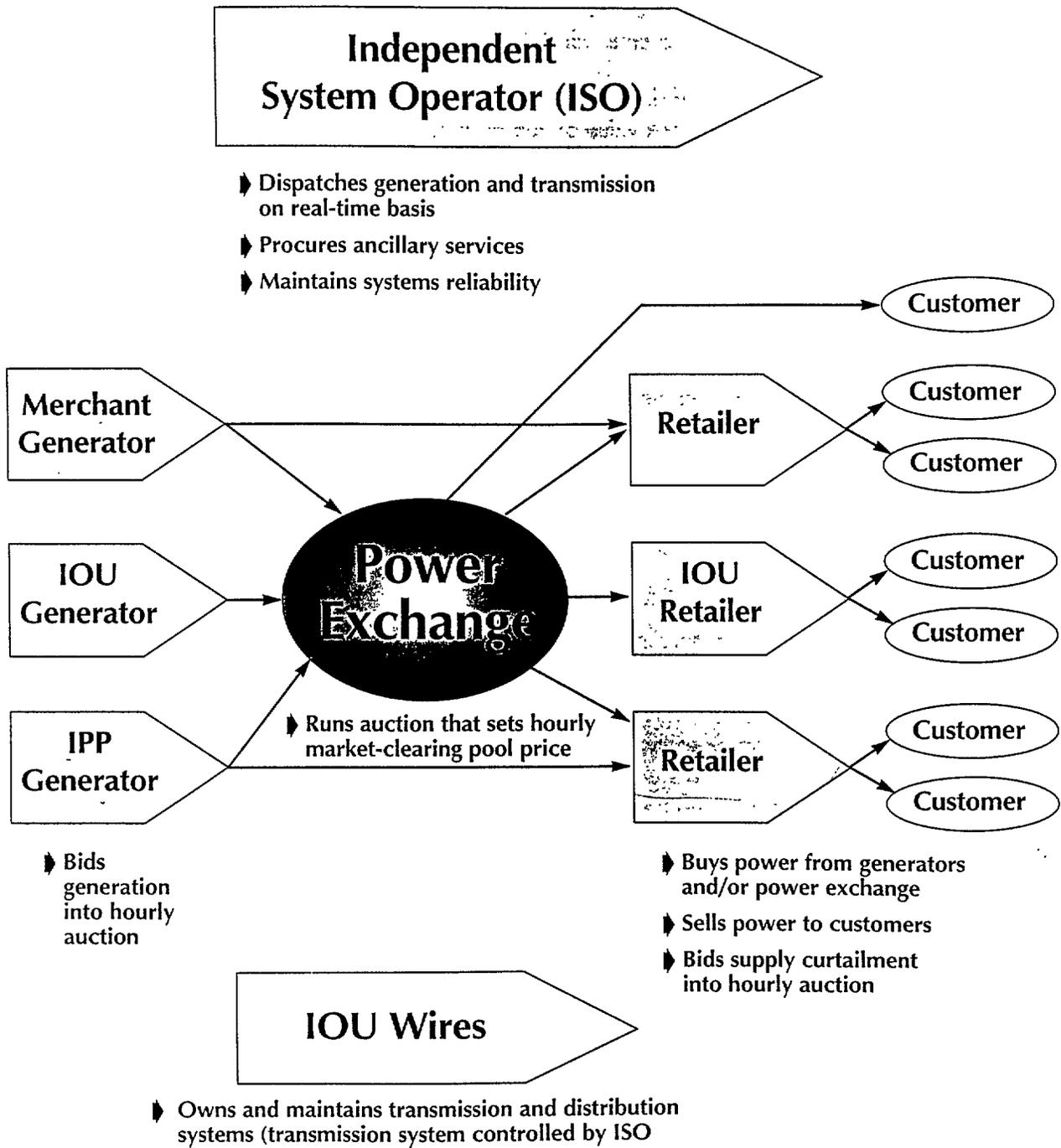
On September 23, 1996, Governor Wilson signed into law the much anticipated bill (AB 1890) that directs the restructuring of California's electric utility industry. The new market and regulatory structure will provide for competition and customer choice. The transition to a competitive electric generation market is scheduled to begin on January 1, 1998, with all consumers participating by 2001. Key elements of this competitive electric market include:

- creation of an independent power exchange
- creation of an independent system operator
- customer choice of generation suppliers

The independent power exchange will manage supply and demand through a continuous economic auction. California's investor-owned utilities will be required to conduct all electricity purchases and sales through the power exchange during a five-year transition period, while others can participate voluntarily. The independent system operator ("ISO"), regulated by the Federal Energy and Regulatory Commission ("FERC"), will have full operational control of all transmission facilities in California belonging to the state's investor-owned utilities ("IOU"), and to those municipal utilities electing to participate. The California Public Utilities Commission ("CPUC") will continue to hold regulatory authority over IOUs with service territories in the state of California.

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# THE RESTRUCTURED CALIFORNIA ELECTRIC INDUSTRY



## THE CALIFORNIA MARKET FOR ELECTRICITY

The electric utility industry restructuring bill (AB 1890) directly affects California's investor-owned electric utilities: Pacific Gas and Electric Company, PacifiCorp, San Diego Gas & Electric Company, Sierra Pacific Power Company and SCE. At the end of the transition period, all customer classes of these utilities will enjoy the right to select their generation suppliers.

During the year ended December 31, 1995, the combined electricity sales and revenues of California's three largest IOUs, San Diego Gas & Electric Company, Pacific Gas and Electric Company and SCE, were as follows:

Customer Class	Sales		Revenues	
	gWh	Percent	MM	Percent
Residential	52,890	31.9	\$6,548	38.8
Commercial	61,619	37.2	6,536	38.7
Industrial	33,612	20.3	2,397	14.2
Public Authorities	6,542	4.0	658	3.9
Agricultural	4,529	2.7	509	3.0
Resale	6,380	3.9	245	1.4
<b>Total</b>	<b>165,572</b>	<b>100.0</b>	<b>\$16,893</b>	<b>100.0</b>

The electricity to meet California's total energy demand comes from a combination of in-state and out-of-state utility-owned generation plants, power purchase contracts with other electric utilities and Qualifying Facilities in the Western System, and from self-generation.

As of December 31, 1995, California's three largest IOUs owned the following generating resources:

Plant Type	Capacity	
	MW	Percent
Oil and Gas	17,833	58.4
Hydro	5,071	16.6
Nuclear	4,783	15.7
Coal	1,617	5.3
Geothermal and Battery	1,234	4.0
<b>Total Generation</b>	<b>30,538</b>	<b>100.0</b>

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## PLANTS AND AUCTION BUNDLES

SCE intends to expedite the auction and complete as many of the sales as possible by January 1, 1998 (the target commencement date for the power exchange) by auctioning the Plants in four separate "bundles." The bundles are configured to include geographically proximate plants in order to maximize the potential for operating efficiencies.

The "**Ventura Bundle**" will include three plants located in Ventura and Santa Barbara counties. The "**Eastern Bundle**" is comprised of SCE's four inland gas-fired plants. The "**South Bay Bundle**" includes three facilities located in the Los Angeles South Bay and Harbor regions. The "**Local Reliability Bundle**" includes two plants located in the Long Beach-Orange County region. SCE believes these are the only plants required to remain "Local Reliability" facilities (assuming the completion of several transmission system upgrades), and as such will be subject to a FERC-approved contract. (Plant descriptions and operating statistics, arranged by bundle, are included in Section 2.)

<u>Bundles and Plants</u>	<u>Active Units<sup>(1)</sup></u>	<u>Entered Operation</u>	<u>Capacity (MW) (Summer Effective)</u>
<b>Ventura Bundle</b>			
Ellwood	1	1974	48
Mandalay	3	1959, 1970	570
Ormond Beach	2	1971, 1973	1,500
<b>Total</b>	<b>6</b>		<b>2,118</b>
<b>Eastern Bundle</b>			
Cool Water	4	1961 to 1970	628
Etiwanda	5	1953 to 1969	1,030
Highgrove	4	1952 to 1955	154
San Bernardino	2	1957, 1958	126
<b>Total</b>	<b>15</b>		<b>1,938</b>
<b>South Bay Bundle</b>			
El Segundo	4	1955 to 1965	1,020
Long Beach	2	1976 to 1977	530
Redondo	4	1948, 1967	1,310
<b>Total</b>	<b>10</b>		<b>2,860</b>
<b>Local Reliability Bundle</b>			
Alamitos	7	1956 to 1969	2,083
Huntington Beach	3	1958 to 1969	563
<b>Total</b>	<b>10</b>		<b>2,646</b>
<b>Total To Be Sold</b>	<b>41</b>		<b>9,562</b>

***In the event that more of the plants are determined to be required for local reliability purposes, SCE reserves the right to revise the auction bundles described above.***

(1) Includes all units not in long-term shutdown.

The California utilities restructuring legislation (AB 1890) requires that all divested generation plants be subject to a mandatory two-year contract with the selling IOU for the provision of operating and maintenance services. In addition, a Facilities Service Agreement will cover the rights to, and responsibilities for, facilities that will be shared by the new owners and SCE in the operation of its transmission system. Certain plants will also be subject to a Radial Lines Agreement covering the power lines connecting those plants to the ISO-controlled transmission grid. (Summary descriptions of proposed forms of contracts are included in Exhibit 1.)

Under the restructured California electricity market, new generation plant owners will be free to bid into the power exchange, or to enter into bilateral contracts with wholesale buyers and retail buyers as they are phased into the competitive market. All of the plants that are not determined to be required for local reliability purposes will be sold without power sale contracts. It is anticipated that the Mandalay, Etiwanda, El Segundo, and Redondo Generating Stations will be subject to local reliability obligations through the summer of 1998, pending the completion of several transmission system upgrades. SCE has filed an application with the CPUC for approval to undertake these transmission system upgrades.

### OWNERSHIP AND BIDDING RESTRICTIONS

In order to promote a competitive generation market within its service territory, SCE will restrict the number of bundles and plants that any one bidder may acquire in the auction process.

SCE intends to auction the Ventura, Eastern, and South Bay bundles simultaneously, in Phase I of the Auction Process, following a schedule that will result in the divestiture of those facilities before January 1, 1998. Phase I auction participants may submit up to a total of six different bids: bids will be accepted for any one or more of the three individual Phase I bundles separately, or for any one or more of the three possible two-bundle combinations.

Permitted Bids:	<u>Single Bundles</u>	<u>Combined Bundles</u>
	Ventura	Ventura / Eastern
	Eastern	Eastern / South Bay
	South Bay	South Bay / Ventura

No bidder will be awarded more than two bundles. Bids for partial bundles (*i.e.*, individual plants) will not be considered. However, bidders interested in individual plants are being encouraged to form partnerships, joint ventures, consortia, or other associations or organizations in order to participate in the auctions, after first disclosing the arrangements to SCE. No member of such bidding groups may acquire indirectly, as a member of more than one group, more of the facilities than a single bidder would be permitted to acquire.

Assuming receipt of all necessary FERC and ISO approvals for the local reliability contract, SCE intends to commence the Phase II auction of the Local Reliability Bundle shortly after Edison's selection of the successful bidders for the three Phase I auction bundles. SCE reserves the right not to entertain bids for the Local Reliability Bundle from bidders awarded one or more of the other three bundles.

***In the event that more of the plants are determined to be required for local reliability purposes, these additional plants and any others to be sold with them as part of the presently contemplated bundles, or as part of newly configured bundles, will be included in the Phase II auction process.*** Ownership and bidding restrictions similar to those described above will apply to the revised auctions.

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## AUCTION PROCESS

SCE has established the following steps for auctioning the Plants (see Exhibit 2 for proposed auction schedule):

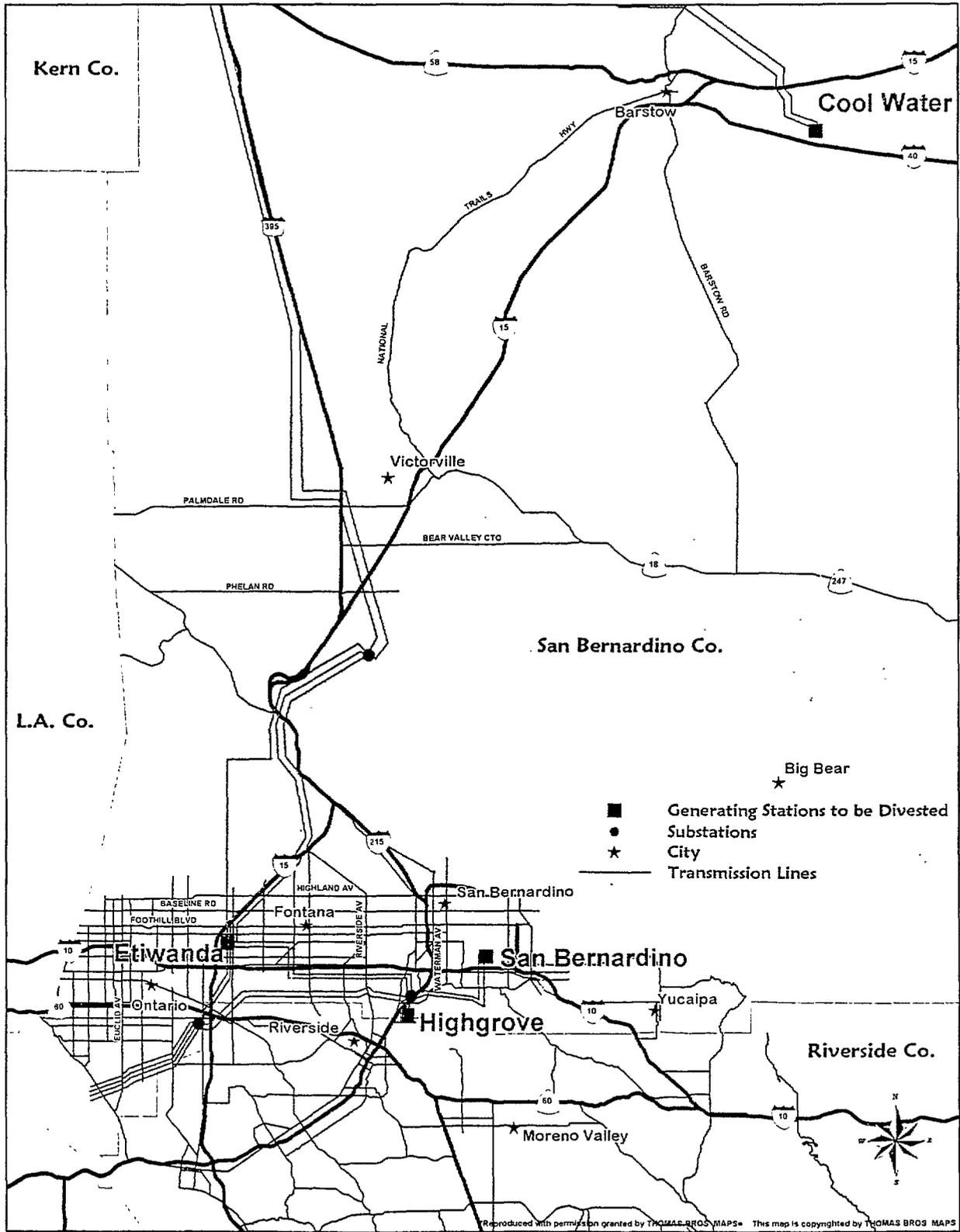
- Conditional CPUC approval to sell the Plants
- Solicitation of interest from a wide range of potential bidders
- Prequalification of interested potential bidders
- Execution of Confidentiality and Auction Protocols Agreements
- Distribution of a confidential Offering Memorandum
- Submission of initial nonbinding indications of interest
- Selection of a "short list" of bidders to proceed to next round
- Distribution of additional information
- Due diligence including management presentations and site visits
- Submission of final bids
- Selection of winning bidder(s)
- Execution of contractual agreements
- CPUC review and approval of the agreements
- Closing of the transaction(s)

In order to accelerate the due diligence process, SCE will make available to the short-listed bidders, an independent engineer's report prepared by Stone and Webster Management Consultants Inc., Phase I and II environmental assessments for each facility, as prepared by independent consultants CH<sub>2</sub>M Hill, and other relevant documents.

In the conduct of SCE's analysis of final bids SCE may: (a) notify bidders that they have been chosen to acquire one or more bundles, (b) invite one or more bidders to submit further bids, (c) notify all bidders that SCE invites further submissions of bids, or (d) take such other action as SCE deems best suited to successfully conclude the auction.

Each sale will be made pursuant to a definitive asset sale agreement along with ancillary documents, the forms of which SCE has submitted to the CPUC for approval. Copies of the CPUC-approved forms of agreements will be included as exhibits to the Offering Memorandum. SCE will submit the executed definitive agreements for each sale to the CPUC for final approval under Section 851 of the California Public Utilities Code. CPUC approval and a fully operational power exchange will be conditions to closing each sale.

# EASTERN BUNDLE



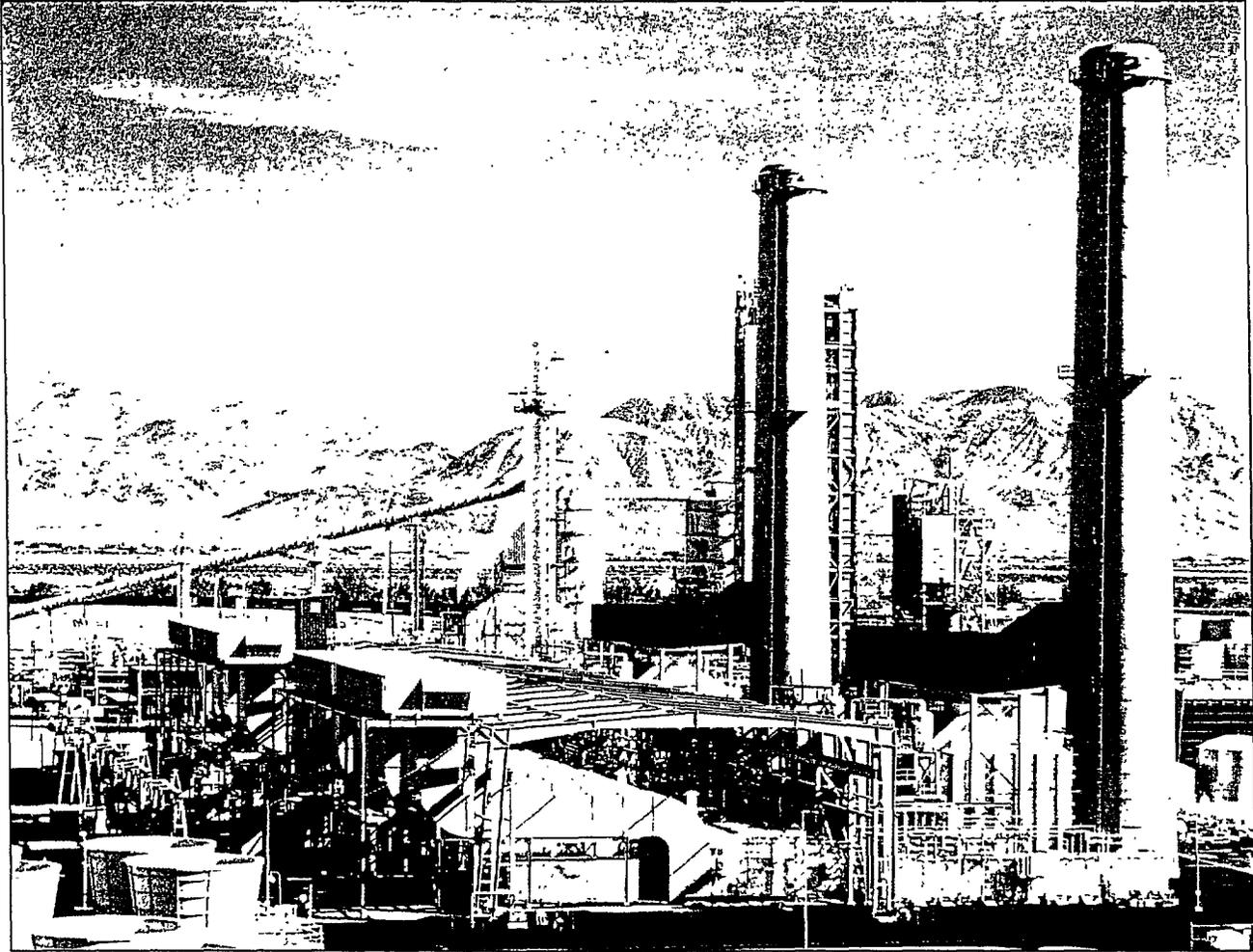
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# COOL WATER GENERATING STATION

37000 E. Santa Fe St., Daggett, CA 92377



*The Cool Water station's power block has four generation units and related cooling towers. The station has a total dependable summer operating capacity of 628 MW with all units in operation. The major equipment manufacturers are General Electric, Westinghouse, and Allis Chalmers. The station includes an office building, training center, general maintenance shop and miscellaneous equipment storage.*

## COOL WATER GENERATING STATION OPERATING STATISTICS

Unit	Cool Water 1		Cool Water 2		Cool Water 3		Cool Water 4	
Commercial Operating Date	June 1961		May 1964		May 1978		August 1978	
Unit Type	Steam Turbine		Steam Turbine		Combined Cycle		Combined Cycle	
Typical Loading	Periodic startup, load following daily, reduced nightly load				Periodic startup, load following daily, reduced nightly load			
Fuel Used	gas, oil		gas, oil		gas, oil		gas, oil	
Heat Rate at Full Load gas basis, HHV (Btu/kHr)	10,200		10,080		9,909		9,909	
Turbine Nameplate Capacity (MW)	64		75		238.5		238.5	
Start-Up Fuel (MMBTU to start cold)	728		909		Steam Turbine 1,900 Gas Turbine 20		Steam Turbine 1,900 Gas Turbine 20	
Ramp Rate (% Capacity/% per Minute)	34-95% 95-100%	2.0% 0.5%	44-95% 95-100%	2.0% 0.5%	13-100% 59-97%	0.5% 2.0%	13-100% 59-97%	0.5% 2.0%
Start-Up Time Hours — Cold — Hot	10 2		16 8		11.5 1		11.5 1	
Black Start Capability	No		No		No		No	
AGC Capability	No		No		Yes		Yes	
Maximum Burn Rate Natural Gas (MCF/Hr)	630		720		242		242	

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## ETIWANDA GENERATING STATION

8996 Etiwanda Ave., Etiwanda, CA 91739



*The Etiwanda station's power block has five generation units and related cooling towers. The station's total dependable summer operating capacity is 1030 MW with all units in operation. The major equipment manufacturers are Combustion Engineering, General Electric, and Pratt & Whitney. Additional facilities include an office building, a general maintenance shop, and a warehouse.*

## ETIWANDA GENERATING STATION OPERATING STATISTICS

Unit	Etiwanda 1		Etiwanda 2	
Commercial Operating Date	July 1953		November 1953	
Unit Type	Steam Turbine		Steam Turbine	
Typical Loading	Operated to meet summer, peak load demand as required (short-term standby 5-days to return to service)			
Fuel Used	gas, oil		gas, oil	
Heat Rate at Full Load gas basis, HHV (Btu/kHr)	11,166		11,174	
Turbine Nameplate Capacity (MW)	100		100	
Start-Up Fuel (MMBTU to start cold)	1,813		1,813	
Ramp Rate (% Capacity/ % per Minute)	27-61%	2.0%	27-61%	0.5%
	61-92%	0.5%	61-92%	0.5%
	92-100%	1.0%	92-100%	1.0%
Start-Up Time (hours)				
— Cold	15		15	
— Hot	6		6	
Black Start Capability	No		No	
AGC Capability	Yes		Yes	
Maximum Burn Rate Natural Gas (MCF/Hr)	1,400		1,400	

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## ETIWANDA GENERATING STATION OPERATING STATISTICS

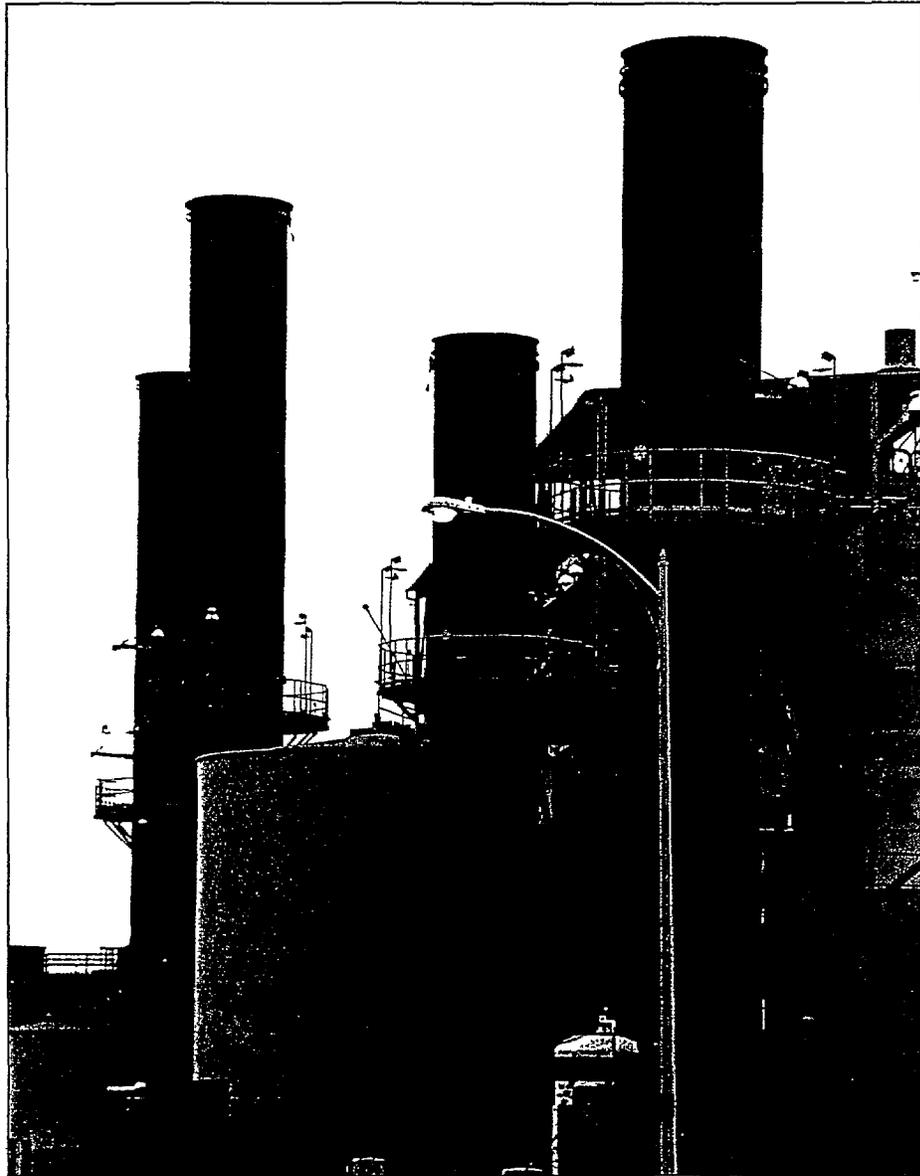
Unit	Etiwanda 3		Etiwanda 4		Etiwanda 5	
Commercial Operating Date	May 1963		October 1963		January 1969	
Unit Type	Steam Turbine		Steam Turbine		Jet Engine	
Typical Loading	Periodic startup, load following daily, reduced nightly load				Peaking Unit, started to meet unusual and system emergencies; limited to 1,300 hours of operation annually	
Fuel Used	gas, oil		gas, oil		gas, distillate	
Heat Rate at Full Load gas basis, HHV (Btu/kHr)	9,483		9,628		15,995	
Turbine Nameplate Capacity (MW)	310		310		110	
Start-Up Fuel (MMBTU to start cold)	4,518		4,518		48	
Ramp Rate (% Capacity/% per Minute)	22-59%	0.5%	22-59%	0.5%	0-100%	10.0%
	59-97%	2.0%	59-97%	2.0%		
	97-100%	0.8%	97-100%	0.8%		
Start-Up Time Hours						
— Cold	15		15		0.16	
— Hot	6		6		0.16	
Black Start Capability	No		No		Yes	
AGC Capability	Yes		Yes		No	
Maximum Burn Rate Natural Gas (MCF/Hr)	2,890		2,930		2,160	

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# HIGHGROVE GENERATING STATION

12700 Taylor St., Grand Terrace, CA 93234



*The Highgrove station's power block has four generation units and related cooling towers. The station has a total dependable summer operating capacity of 154 MW with all units in operation. The major equipment manufacturers are Combustion Engineering, General Electric, and Westinghouse. Additional facilities include two office/administration buildings.*

## HIGHGROVE GENERATING STATION OPERATING STATISTICS

Unit	Highgrove 1		Highgrove 2		Highgrove 3		Highgrove 4	
Commercial Operating Date	August 1952		July 1952		November 1953		October 1955	
Unit Type	Steam Turbine		Steam Turbine		Steam Turbine		Steam Turbine	
Typical Loading	Operated to meet summer peak load demand, as required (short-term standby 5-days to return to service)				Operated to meet summer peak load demand, as required (short-term standby 5-days to return to service)			
Fuel Used	gas, oil		gas, oil		gas, oil		gas, oil	
Heat Rate at Full Load gas basis, HHV (Btu/kHr)	13,279		13,279		12,315		12,315	
Turbine Nameplate Capacity (MW)	33		33		44		44	
Start-Up Fuel (MMBTU to start cold)	240		240		327		327	
Ramp Rate (% Capacity/% per Minute)	23-100%	1.0%	23-100%	1.0%	23-100%	1.0%	23-100%	1.0%
Start-Up Time Hours — Cold — Hot	12 6		12 6		12 6		12 6	
Black Start Capability	No		No		No		No	
AGC Capability	No		No		No		No	
Maximum Burn Rate Natural Gas (MCF/Hr)	420		420		520		520	

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# EXHIBIT 1

## TRANSACTION AGREEMENT SUMMARIES

SCE has prepared, and included as part of its CPUC filing, forms of various contracts to govern the sales of each bundle of generating stations and the post-transaction rights and obligations of the purchasers and SCE. The central document is an Asset Sale Agreement covering the transfer to the buyer of generating assets and associated liabilities. In addition, an O&M Agreement provides the terms under which SCE will supply plant operation and maintenance services for two years after the sale. A Facilities Services Agreement governs the maintenance, operational control and use of certain facilities which will be shared by SCE and the new owners of the Plants. Four of the plants will be subject to a Radial Lines Agreement covering the radial power lines connecting the plants to the ISO controlled transmission grid. Finally, the plants that are determined to be necessary for system stability and reliability purposes will be subject to a Local Reliability Dispatch Agreement which must be approved by FERC and the ISO. The terms and conditions of the agreements are subject to CPUC approval.

### Asset Sale Agreement

The Asset Sale Agreement provides, on commercially reasonable terms and conditions, that the purchaser acquire the generating and related assets, and associated liabilities described in the Agreement. In general, SCE will retain obligations occurring prior to the transfer of ownership, with certain exceptions specified in the agreement. SCE will retain all liabilities arising from pre-closing activities, including pre-closing environmental liabilities known at the time of closing or proven within 15 years after closing, except for environmental liabilities related to plant decommissioning. The Agreement requires SCE to operate the plant in the usual and ordinary course in the period between signing and closing. The Agreement contains representations and warranties, covenants, conditions to closing, and indemnities of the type which are customary for asset sale contracts.

### O&M Agreement

As required by California Public Utilities Code Section 363, the proposed O&M Agreement provides that SCE will operate and maintain the divested generation facilities for a period of at least two years following the sale on terms that are "reasonable for both the seller and the buyer." In general, the Agreement requires SCE to provide O&M services in accordance with good industry practice subject to parameters determined by the new owner. The owner may change these parameters at any time pursuant to a defined change order process, and is responsible for performing only those tasks for which owners are conventionally responsible when a third-party operator is hired. As compensation for its services, SCE receives reimbursement for its costs without a return on capital component, except with respect to owner responsibilities delegated to SCE and specialized services provided on a competitive bid basis. In addition, the Agreement contains various standard commercial terms, including a confidentiality clause restricting SCE's disclosure of the new owner's proprietary information.

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## **Facilities Services Agreement**

The Facilities Services Agreement establishes a practical and reasonable allocation of maintenance, operational control and use of certain assets located at or adjacent to the plant sites which will remain integral to the operations of both SCE and the plant following the sale. These assets consist primarily of electrical switching equipment, and fuel handling equipment used in providing backup fuel capability to the plant and in the operation of the Edison Pipeline & Terminal Company. The Agreement places primary responsibility for services related to the assets on the party in the best position to provide such services. Various other commercial terms, as well as access easements necessary for each party to accomplish its obligations under the Agreement, are also contained in the Agreement.

## **Radial Lines Agreement**

The owners of the "radial line" plants (Cool Water, Huntington Beach, Mandalay, and Ormond Beach) will each enter into an agreement with SCE whereby SCE will agree to operate and maintain the radial lines. The agreements will allow SCE to recover from the owners, SCE's cost of the radial lines, including a rate of return, together with any operation, maintenance and upgrade costs.

## **Local Reliability Dispatch Agreement**

The plants that are determined to be required for system stability and reliability purposes will be subject to a Local Reliability Dispatch Agreement between the ISO and the plant owner setting forth the terms under which the buyer is required to provide power when requested by the ISO. In general, the proposed form of Agreement allows the ISO to request the new owner to dispatch electricity from specific units, subject to certain performance limitations described in the contract. As compensation, the owner receives a monthly payment equal to one-half of its deemed fixed O&M costs for the facility. If the requested power is not sold pursuant to a bilateral contract or through the Power Exchange in merit order, the owner is also compensated based on its deemed variable cost of generating the power. The Local Reliability Dispatch Agreement is subject to approval by the FERC and the ISO.

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## EXHIBIT 2

### PROPOSED AUCTION SCHEDULE

<b>1997</b>	<b>Event</b>
May 15	Executed Confidentiality and Auction Protocols Agreements returned to SCE
May 16	Distribution of confidential Offering Memorandum.
<b>Phase I: Ventura, Eastern, and South Bay Bundles</b>	
Jun 30	Indications of Interest for the Ventura, Eastern and South Bay Bundles due
Jul 3	Short-listed bidders invited to continue
Jul 3 to Aug 14	Due diligence, including management presentations and site visits
Aug 14	Final bids due
Aug 21	Determination of successful bidders
Aug 27	Executed definitive agreements submitted to the CPUC approval
<b>Phase II: Local Reliability Bundle</b>	
Aug 25	Distribution of Offering Memorandum and approved form of Local Reliability Dispatch Agreement
Sep 8	Indications of Interest for Local Reliability Bundle due
Sep 12	Short-listed bidders invited to continue
Sep 13 to Oct 13	Due diligence, including management presentations and site visits
Oct 13	Final bids due
Oct 17	Determination of successful bidder
Oct 21	Executed definitive agreements submitted for final CPUC approval

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*SCE retains the right to alter its auction process and schedule as necessary to accommodate unanticipated events, including the determination that additional plants are required for local reliability purposes. Auction participants will be promptly notified of any changes.*

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## REQUESTS FOR ADDITIONAL INFORMATION

SCE has retained New Harbor Incorporated as exclusive financial advisor in connection with the sale of its wholly-owned gas and oil-fired electric generating plants. All communications, inquiries and requests for information relating to the sale of the Plants should be addressed to the representatives of New Harbor Incorporated listed below. Under no circumstances should SCE, its employees, independent engineers (Stone and Webster Management Consultants), environmental consultants (CH<sub>2</sub>M Hill) or its outside legal counsel be contacted directly.

**John G. Paton**  
Managing Director  
Tel. 212/486-3668

**Gary Greenblatt**  
Vice President  
Tel. 212/486-3672

**NEW HARBOR INCORPORATED**  
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