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ARMENIA INDEPENDENT POWER  
DEVELOPMENT AND PROMOTION PROJECT

**REVIEW OF INSTITUTIONAL FRAMEWORK  
For Private Power Development in Armenia**

**Ministry of Energy of Armenia**

**&**

**USAID IPP Team**

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## EXECUTIVE SUMMARY

Armenia is a dynamic and resourceful country that has weathered fundamental change throughout its history and boasted a key role in the economic and technological life of the former Soviet Union. Armenia had also been a center of private sector activity before and during Soviet rule, and was predicted by many observers to become a pioneer of market-based reforms and transition in the post-Soviet reality. Armenia in fact led initial reforms upon the disintegration of the Soviet Union, and became host to the first high-profile joint ventures in the new economic landscape.

Since 1992, however, Armenia has plunged into a severe economic crisis as a result of an almost complete energy and transportation blockade by Azerbaijan, and at times Turkey. Unrest in Georgia also significantly curtailed trade routes and activity in this land-locked country. During the same period, investor interest in the country declined, and many of the businesses that were established experienced significant difficulties and were not able to continue viable operations.

Little investment, either from domestic or outside sources, has occurred in Armenia in the recent past. Two factors have generally contributed to this. First, investor interest in the CIS in general, including Armenia, continues to be highly reserved. Also, investors seem to be even more sceptical about stability in the TransCaucasus region, which has been wrought with political and ethnic unrest. Second, Armenia has recently lagged behind many other CIS, East European and Baltic countries in developing an appropriate legal and commercial framework for business activity and safeguarding investor interests. This has specifically impacted private sector investment in power projects, which are more capital-intensive and limited in markets than most other types of investments, and require a much more refined institutional framework.

Whereas Armenia may have little influence on the external factors constraining investment, it is fully capable of improving its internal environment for private power development and other types of investment to offset external factors. The primary tenet of this report is that Armenia can redress its disadvantage in competing for investment capital vis a vis other developing countries by creating an internal environment that provides comprehensive risk coverage and innovative terms to investors. This report focuses on the following institutional factors as part of an overall strategy to promote private power development.

***Political Environment*** Government policy making needs to be more transparent, and policies regarding reform and privatization in the power sector should be well articulated, comprehensive, and long term. The Government needs to take visible and substantive steps to communicate its eagerness to promote private power development, through the issuance of policy statements and development of a well defined process for project development and negotiation.

***Legislative Framework*** Armenia lacks a comprehensive commercial law framework as well as a legal framework for the energy sector. A draft energy law has been prepared to address many important aspects of Independent Power Production (IPP) development, and it will be a critical first step in IPP development upon adoption. Enforcement of laws and lack of a reliable judicial system remain issues.

of concern. One approach to offset the legislative gaps during initial stages is for developers to limit their legal and regulatory exposure through contractual means. For example, international arbitration procedures can be incorporated into contracts to avoid significant uncertainties related to the domestic judicial system.

**Regulatory Framework** The current regulatory approach needs to be restructured, as outlined in the draft energy law. A comprehensive package of incentives, including flexible tariff structuring and provision of guarantees should be developed to increase investor interest in opportunities in Armenia, enhance confidence that concessions will be provided, and reduce development time and expenses.

**Commercial and Financial Issues** The Armenian energy sector is characterized by non-payments, a situation that limits prospects for private involvement. Currency and inflation are also significant uncertainties. A stable commercial environment for IPPs could be created through the provision and implementation of sovereign guarantees to safeguard investor interests.

Table 1 provides a general summary of the institutional issues and corresponding recommendations presented in this report.

**Table 1**  
**Summary of Findings and Recommendations**

Developer Requirements	Situation in Armenia	Recommendation for Improvement
<b>Political Environment</b>		
Overall Political Stability in Country and Region	<ul style="list-style-type: none"> <li>• Investment Community Perceives the CIS, and Particularly the Caucasus Region as Politically Unstable</li> <li>• Armenia's Political Environment Has Been More Stable than Other CIS Countries</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate Armenia's Track Record in Internal Stability</li> </ul>
Stability in Government Structures and Predictability of Government Actions	<ul style="list-style-type: none"> <li>• Armenian Government Structures are Stable But Many Decision-Making Processes Are Not Clear to Outsiders</li> </ul>	<ul style="list-style-type: none"> <li>• Establish Roadmap for Development for Potential Investors, Address Issues of Uncertainty Prior to Discussions with Investors</li> </ul>
Government Commitment to Privatization	<ul style="list-style-type: none"> <li>• Armenian Government is Committed to Privatization, But the Industrial Privatization Process Has Only Recently Begun</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate Armenia's Commitment to Privatization, Ensure Broad Level of Internal Support in Privatization Process</li> </ul>
<b>Legal Environment</b>		
Availability of Comprehensive Commercial Law Framework, Predictability in Taxation Policies	<ul style="list-style-type: none"> <li>• Commercial and Investment Laws Available in Armenia, but Not Tested Yet</li> </ul>	<ul style="list-style-type: none"> <li>• Transform Utility into Commercially Viable Company</li> <li>• Establish Track Record for Commercial Operation and for Private Sector Involvement</li> </ul>

Availability of Comprehensive Energy Law that Addresses Key Private Power Issues	<ul style="list-style-type: none"> <li>Energy Law Has Been Drafted Awaiting Ministry of Energy Action</li> </ul>	<ul style="list-style-type: none"> <li>Approve Comprehensive Energy Law As Soon As Possible</li> <li>Begin Implementing Some Aspects of Law Where Possible</li> </ul>
Reliable and Independent Judicial System to Enforce the Law	<ul style="list-style-type: none"> <li>The Armenian Judicial System as With Other CIS Countries Has Not Had Much Experience Dealing with Foreign Investment Disputes</li> </ul>	<ul style="list-style-type: none"> <li>Can be Covered Under Existing Bilateral Agreements to Enforce International Arbitration of Disputes</li> </ul>
Clearly Defined Role for Industry Regulator its Functions and Jurisdiction	<ul style="list-style-type: none"> <li>Industry Regulator Proposed in Draft Energy Law Tariff-Setting Committee Recently Established to Evolve into Full-Time Regulatory Body</li> </ul>	<ul style="list-style-type: none"> <li>Transition Tariff-Setting Committee to Full-Time and Empowered Regulatory Body Assign Responsibility for IPP Promotion</li> </ul>
<b><i>Regulatory Environment</i></b>		
Experience of the Country in Private Power Development	<ul style="list-style-type: none"> <li>Armenia Can Show Limited Precedent of Private Power</li> </ul>	<ul style="list-style-type: none"> <li>Commercialize Existing Power Generation to Establish Precedent of Contracts with Independent Producers</li> </ul>
Government Willingness to Adjust Tariffs to Ensure Long Term Viability of Power Industry	<ul style="list-style-type: none"> <li>Armenian Power Industry Moving To Commercialized Operations, But Tariffs are Still Relatively Low</li> </ul>	<ul style="list-style-type: none"> <li>Establish Regulator With Mandate and Authority to Allow Viable Utility Operations</li> <li>Base Future Regulatory Framework on Actual Experience from Such Contracts</li> </ul>
Clear and Transparent Process for Tariff-Setting, Independent of Political Influence	<ul style="list-style-type: none"> <li>Tariff-Setting Process Not Clear to Outsiders, Tariff-Setting Committee Established but Regulations Still Need to be Developed</li> </ul>	<ul style="list-style-type: none"> <li>Establish Independent Regulator Now So That it Develops Tariff-Setting Experience</li> </ul>
Willingness and Authority of Regulators to Provide Appropriate Terms to Investors and Enforce Cooperation by Purchasing Utility	<ul style="list-style-type: none"> <li>Regulator with Adequate Authority Proposed in Draft Law but Not Yet Established, Utility's Approach to Private Power Not Defined</li> </ul>	<ul style="list-style-type: none"> <li>Establish Independent Regulator Approve a Private Power Package to be Implemented by Utility</li> </ul>
Permission to Developer to Sell Power to Third Parties	<ul style="list-style-type: none"> <li>Permission Available but Without Legal and Regulatory Basis</li> </ul>	<ul style="list-style-type: none"> <li>Define Regulatory Basis for Power Wheeling Allow Outside Sales in Draft Law</li> </ul>
<b><i>Commercial Environment</i></b>		
Availability of Financially Healthy Purchaser, Preferably with Hard Currency Earnings	<ul style="list-style-type: none"> <li>Armenergo May Not Be Able to Attract Large Projects Until Its Financial Health is Demonstrated</li> </ul>	<ul style="list-style-type: none"> <li>Commercialize Utility and Enable Operation as Financially Viable Company Build Credit Record</li> <li>Provide for Sovereign Guarantee Mechanism for Key Projects</li> </ul>
Assurance of Enforceability of Contracts	<ul style="list-style-type: none"> <li>Armenian Judicial System Not Yet Fully Tested, Sovereign Guarantees or</li> </ul>	<ul style="list-style-type: none"> <li>Develop Contractual Package Acceptable to Armenian</li> </ul>

	Third Party Arbitration Could Be Used	Parties Incorporate International Arbitration Procedures
Assurance of Prompt Payments by Power Purchaser	<ul style="list-style-type: none"> <li>• Non-Payments Situation Exists in All CIS Countries Including Armenia</li> </ul>	<ul style="list-style-type: none"> <li>• For Large Projects Provide Sovereign Back-Up Guarantees or Hard Currency Stream Collateral</li> </ul>
Availability of Insurance	<ul style="list-style-type: none"> <li>• Insurance Market Not Fully Developed in Armenia</li> <li>• OPIC Insurance Available</li> </ul>	<ul style="list-style-type: none"> <li>• Government or Utility Can Provide Insurance Services If Outside Insurers Not Available</li> </ul>
Sovereign Guarantees	<ul style="list-style-type: none"> <li>• Process of Obtaining Sovereign Guarantees Not Clear to Outsiders</li> </ul>	<ul style="list-style-type: none"> <li>• Identify Projects and Process for Guarantees</li> </ul>
<b><i>Financial Environment</i></b>		
Ability to Make Returns Commensurate With Risks	<ul style="list-style-type: none"> <li>• Armenia Does Not Yet Have A Defined Rate of Return That It is Willing to Offer Investors</li> </ul>	<ul style="list-style-type: none"> <li>• For Larger Projects Establish Rates of Return That Are Competitive with Other Markets</li> <li>• For Smaller Projects Establish Purchase Price</li> </ul>
Ability of Economy to Absorb Potential Tariff Increases	<ul style="list-style-type: none"> <li>• It is Not Clear Whether the Armenian Market Can Absorb a Significant Amount of Power at Higher Cost</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate Payment Ability of Consumers or Provide Creditworthy Purchaser to Absorb Impact</li> </ul>
Inflation and Predictability of Project Costs	<ul style="list-style-type: none"> <li>• Armenia Has Yet to Develop a Tariff Setting Methodology that Will Ensure Recovery of Cost Increases</li> </ul>	<ul style="list-style-type: none"> <li>• Tariff Structures With Flexibility in Adjustments to Inflation-Related Costs Should be Adopted</li> </ul>
Currency Stability	<ul style="list-style-type: none"> <li>• Armenian Currency Has Been Stable in Recent Months</li> <li>• International Investors Can Not Take Currency Risk</li> </ul>	<ul style="list-style-type: none"> <li>• Tariff Structures With Indexation of Foreign Capital Components Would Need to be Approved</li> </ul>
<b><i>Technical Issues</i></b>		
Diversity of Available Projects	<ul style="list-style-type: none"> <li>• Armenia Has Many Good Small Projects That Can be Implemented by Local Developers</li> <li>• Armenia Has a Few Larger Projects That Can Be Developed By International Developers</li> </ul>	<ul style="list-style-type: none"> <li>• Environment for Local Developers Can Be Improved Through the Establishment of Standard Contracts and Improved Licensing Process</li> <li>• Armenia Should Commit Development of Projects Only to Experienced International Developers</li> </ul>
Availability of Skilled Labor Force and Country's Experience in Construction, Operation and Maintenance of Projects	<ul style="list-style-type: none"> <li>• Armenia Has a Highly Skilled Labor Force and Can Show Tremendous Achievements in Hydro Field</li> <li>• Armenia's Recent Experience in Construction and Operation of Hydro Plants Needs to be Demonstrated</li> </ul>	<ul style="list-style-type: none"> <li>• International Developers May be Generally Skeptical of CIS Construction, Operations and Maintenance Practices Armenians Should Expect Significant Involvement and Oversight from Foreign Developer in All Aspects of</li> </ul>

		Implementation
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This report provides an overview of the current institutional environment of Armenia within each of the general areas outlined above, and presents examples of incentives provided by other countries to encourage private power development. Finally, it provides recommendations in the form of general principles of a comprehensive strategy to develop a conducive IPP environment in Armenia.

## **1 0 INTRODUCTION & BACKGROUND**

### **1 1 Purpose of the Study**

The purpose of this study is to identify the key institutional constraints to private investment in Armenia's power sector, and recommend to the Government of Armenia specific measures for improvement. Many of the issues identified in this report have been addressed extensively with Armenian counterparts as part of the overall Hagler Bailly energy program for Armenia, and several of the recommendations developed here are already in the process of implementation as a result.

Private sector involvement in developing Armenia's power sector resources has become an increasingly realistic option for the mid to long-term development of the country's energy infrastructure. The Government has for a long time expressed interest in attracting private power investment, and recently demonstrated its willingness to introduce reforms in the power sector. Also, the international donor community has shown increasing preference in supporting private sector participation in the development and operation of power sector assets.

Armenia, due to its small size, limitation of marketable natural resources, and location in a region known for its political instability, is at a significant disadvantage with numerous other countries worldwide in competing for private investment capital for the power sector. Institutional constraints have put Armenia at a further disadvantage with other developing countries in competing for investment resources, and had a significant impact on the level and quality of investment that has taken place in the country. There has been little noticeable investment from domestic resources in new physical plant and infrastructure, and even less activity on the part of foreign investors. As a result, Armenia needs to adopt a more innovative and aggressive approach than many other countries, through the development of a stable and attractive environment for private power activity, in order to attract investment.

The objective of this report, therefore, is to develop a comprehensive set of recommendations as a single strategy that would be necessary to attract private capital to Armenian projects, from both within and outside the country. The audience of this report is intended to be interested parties within the Government of Armenia for consideration of recommendations, and the report is not intended for use as an investment promotion mechanism. This report provides the principles of a comprehensive strategy for enabling private power in Armenia, and upon acceptance by the Government, should be developed into a specific roadmap for timely implementation.

A second study, analyzing strategies for the financing of power projects in Armenia is under development.

### **1 2 Overview of the Power Sector**

Armenergo is the state-owned utility which currently maintains and operates some generation and all transmission facilities in Armenia for the Ministry of Energy. A recent restructuring by the Ministry of

Energy led to the separation of the Hrazdan power station and the Sevan-Hrazdan hydro cascade from Armenergo. These facilities are intended to become self-supporting (i.e. self-financing) commercial entities. Similarly, all distribution was also separated from the utility. At present, 55 distinct distribution enterprises have been created.

Prior to the break-up of the Soviet Union, Armenergo was a regional distribution grid operating as part of the TransCaucasus grid, representing three regional utilities with a dispatch center in Tbilisi, Georgia. This grid was in turn part of a highly integrated power system extending throughout the former Soviet Union with a central dispatch center in Moscow. All aspects of this system were planned from the perspective of meeting shifting peak loads within the vast single national grid that covered eleven time-zones, without consideration for the specific characteristics and self-sufficiency needs of regional distribution grids.

As a result, many of the regional utilities that have been transformed into independent entities since the break-up of the Soviet system now find themselves with an inadequate generation profile. Armenergo, for example, had become a power exporting utility due to its nuclear capacity, but was almost fully dependent on imported fuels. Domestic hydro resources were initially developed to meet peak loads, but were not developed to their full potential. Today, Armenia faces the dire need to replace aging facilities with additional domestic and renewable power generation resources and reconfigure its energy profile. Given limitations in the resources of Armenergo and the Armenian Government, significant opportunities have emerged for private power developers to play an unprecedented role in rebuilding the country's electric infrastructure.

### **1.3 Overview of Institutional Factors Conducive to IPP Development**

This report analyzes Armenia's institutional environment through the perspective of an international private power developer. Key factors that are typically identified by developers in evaluating and comparing various country environments are listed below, while other sections evaluate Armenia's environment based on these generic criteria and provide recommendations for improvement.

#### **Political Climate**

One of the most important factors contributing to the success or failure of privatization in the power industry of any given country is the stability of its political environment, and its ability to foster a sustainable framework that supports independent power development. In order to make long term financial commitments, investors, lenders, and independent power developers must have a clear view of the stability of a host country's political system. Countries with stable and predictable political climates which provide for orderly transition of governments, have an established legislative process, maintain civil order and respect private property are much more likely to attract external investors for independent power projects than those which do not provide such political conditions.

In addition to political stability, political consensus is essential to provide a suitable framework to support independent power development. Policy makers and political leaders must agree on a clear

definition of what role the private sector will play in the electric power industry then move expeditiously to execute the laws, regulations, and mechanisms which will facilitate the implementation of independent power projects. Moreover, a degree of political consensus must be reached, because many of the issues involved in establishing an attractive environment for independent power will likely impact on other politically sensitive matters. For example, in countries where electric power is sold by government-owned utilities at subsidized prices non-subsidized independent power may not be competitive. Removal of these subsidies, or other workable alternatives, will likely be a major political issue which must be addressed and resolved by the political system if independent power is to become a viable alternative.

Independent power developers and lenders are also concerned about political issues impacting the pace of long-term reform of the electric power sector including

- Adoption of broader privatization policies, such as divestiture of assets of public enterprises and utilities,
- Legislation insuring and protecting ownership and operation of public franchises, such as electric power systems by private and/or foreign entities,
- Removal of price subsidies and the adoption of incentives such as tax holidays, sovereign guarantees, and import duty exemptions on fuels and pertinent equipment

### **Legislative Framework**

A sound legislative framework must also exist, and provide a minimum level of legality for the presence of foreign investors in the power subsector, guarantees against expropriation of assets by the government, means to effectively appeal government actions, and the ability to meet the financial needs of the project and its investors. At a minimum, enabling legislation should define or establish

- Objectives and scope of the law in terms of safety and environmental legislation,
- Responsibilities of ministries and government agencies for independent power sector,
- Utilities and power companies that will be subject to the law,
- Right of ownership of power franchises and trade restrictions,
- Relationship of the law to its operative rules and regulations,
- Basis for the regulation, control, and pricing of tariffs and changes in taxation conditions,
- Rights related to easements of land for power plants and transmission facilities, and,
- Broad regulations for operation, labor regulations, and management oversight

In this regard, it is essential that these laws be clear. Vague legislation creates uncertainty for investors and developers which may deter or impede the development process.

### **Regulatory Structure**

Establishing a proper regulatory structure is essential for countries that do not have an extensive track record in commercialized and viable utility operations and established experience in favorable treatment

of private investment in infrastructure. The key features of a sound regulatory framework are transparency and openness of the system, clear articulation of reform objectives, including tariff policies, a legal structure that clearly defines the rules and procedures to increase participation and accountability of the private sector, and defined entry and exit conditions for private companies. Moreover, the objective of the framework should be to provide clear published rules and procedures for independent power developers, including the agency (or agencies) in charge, permit and licensing procedures, tariff policies, etc.

Some countries may have an existing regulatory entity governing the electric power sub-sector, but most are not presently equipped to handle the consequences of expanded private participation. Professional management and institutional independence for regulatory bodies are necessary for an effective regulatory function. Furthermore, the regulatory structure should ensure the financial stability and credit-worthiness of utilities purchasing power from private sources. Otherwise, investors and lenders will be cautious and will look to other sources, such as state and central governments, for assurances and guarantees.

Regulatory considerations that should be reviewed for their financial effect on utility creditworthiness include:

- The degree to which subsidies are carried out through utility regulation and the effect of those programs on utilities' rate structure and financial health,
- The potential effects of changing utility revenue requirements on all wholesale and retail rate structures,
- The status of, and need for, a bulk power market, and the role of wholesale transmission or wheeling between regions, and,
- The degree of independence in the relationship between the purchasing utility and its regulatory body, which may affect the agency's ability to oversee management and ensure adequate rate setting.

These features promote financially sound practices by utilities, and therefore, increase investors' and lenders' confidence in the regulatory regime.

### **Institutional Considerations**

Finally, the institutional structure of the electric power industry is a key element in the advancement of independent power in most countries. The financial strength, administrative autonomy, and managerial capability are essential requirements to cope with adverse circumstance and economic and financial uncertainties.

To promote independent power, there must be rationalization and coordination among utilities, ministries, and government agencies that affect the power industry. In countries with both central and regional institutions, rules and regulations must be reconciled. It is imperative that the country's institutional structure is organized in such a fashion as to expedite and facilitate timely review and

resolution of independent power project proposals Lengthy evaluation and resolution processes increase development costs and the cost of the project itself When possible, governments should institute a "one-stop" concept whereby developers can obtain information about approval and permits from a single agency thereby saving time

## **2 0 OVERVIEW OF POLITICAL & ECONOMIC ISSUES**

### **2 1 Political Structures & Overview**

Armenia has enjoyed a relatively stable government since its independence in 1991. In general, the country has adapted to the post-independence crisis conditions, and it seems to have emerged from the worst of the crisis period of 1992-1993. Parliamentary elections were held in July of 1995. At the same time, a new constitution was adopted by referendum.

Along with the relative internal stability achieved, it is expected that the Government's drive towards economic reform will resume. The Government's policies and commitment in such areas as political and economic reform, privatization, and investment promotion are key factors in mobilizing internal and external capital, and need to be demonstrated more clearly. Also, Armenia's internal political and decision-making processes are still being shaped and appear to be relatively less transparent and accessible, and this may affect, for example, the formation of a de-politicized and transparent power regulatory process in the future.

As many of the barriers to IPP development are internal in nature, it appears that the Government has significant opportunity to improve the environment for investment. The first step towards addressing institutional issues outlined in this report is the development of a well-communicated long term program of reform. Government commitment to reforms can be best demonstrated through achievement of internal political consensus on long term strategies, improved internal organization that defines decision-making responsibilities and procedures, and implementation of specific measures that clearly fit within the overall strategy and are not perceived as stop-gap actions.

Externally, investor interest in Armenia has been constrained primarily by the regional political instability caused by recent armed conflict in Georgia and Azerbaijan, and the continuing transportation and energy blockade of Armenia by Azerbaijan and Turkey, which has led to an economic and energy crisis in the country. Despite an apparent reduction of tensions recently, the international financial community continues to view the Trans-Caucasus region of the former Soviet Union as one of the high risk areas of the world.

### **2 2 Economic Policy**

Upon the disintegration of the Soviet Union, Armenia led the CIS in economic reform efforts and had become an example for others in the region. Examples of this record include the almost complete privatization of arable lands and retail trade activities in 1991. A preliminary legislative framework was established addressing rights to property ownership, entrepreneurial activity, and foreign investment. During the acute crisis period of 1992-1993, however, the Government's primary focus seemed to have shifted to addressing an overwhelming set of emergency issues. This siege mentality resulted in a temporary halting of almost all reform efforts, and little was done since the end of 1992 to further develop a reliable framework for business activity.

Most recently with guidance and assistance from the IMF and the World Bank, Armenia's Government has begun to focus on economic planning and reform. The Dram, Armenia's currency has maintained a stable course since May of 1995. On the other hand, prices for consumer goods continue to escalate (due to the import-dependence of the economy), while official wages have decreased in Dollar terms. The Government's renewed reform efforts have included issuance of privatization vouchers in early 1995, continuation of the privatization program with a wider scope of industries, and initiation of a legislative program to be presented to the new Parliament.

Armenia needs to demonstrate its commitment to privatization through the comprehensive sustained implementation of its privatization program. Given the fundamental changes occurring in the economy and the limited transparency currently existing in the policy-making process, the Government should ensure a broad level of domestic support for its economic programs. At the same time, Armenia needs to further clarify its policies and decision-making processes, particularly as they relate to economic development and investment, in order to establish transparency and predictability of policies of concern to domestic and foreign investors.

### **2.3 Energy Policy**

Until recently, the effects of the Government's siege mentality had been most apparent in the energy policy development process. The Ministry of Economy, charged with reforms and restructuring in the energy sector, had not formulated a vision of the future structure of the industry. The Ministry of Energy, which owns and controls all energy assets in the country including Armenergo, had been mostly occupied with solving day-to-day energy supply issues. Armenergo continued operations under a centrally controlled regime to meet emergency requirements. Although open to the concept of private power, none of these agencies addressed issues relating to the integration of private power with the grid, such as wheeling, transmission pricing, market-based power agreements, tariff design, and monopoly regulation. Recently, however, signs of Government commitment to power sector reform, imperative for IPP development, have emerged.

One of the Government's most ambitious reform programs was recently developed and introduced for the power sector. A series of reforms were introduced at the beginning of 1995 with the intent to gradually transform Armenergo into a commercially viable entity. One such measure was to index Armenergo's tariffs to the Dram/Dollar exchange rate. Another measure has been to allow Armenergo to disconnect non-paying customers from the grid, with exceptions provided for vital industries.

The most fundamental institutional changes in the power sector were introduced through a series of decrees in December of 1995, calling for the reorganization of Armenergo, and its restructuring into multiple distinct commercial entities. Thus, the power generation and distribution functions, as well as other divisions of the organization are intended to become mutually independent companies. In addition, a special Tariff-Setting Committee was formed to establish electricity, heat and natural gas tariffs. These reforms are intended to increase the accountability and efficiency of power sector organizations, provide transparency to operations and pricing development throughout the complex,

and provide incentives for more effective payments collections. These measures, however, have not yet defined a role for and process for the development of IPPs.

Armenia's reforms in the energy sector will have a significant positive impact on prospects for further assistance from the donor community, and will help pave the way for additional reforms required to improve the environment for private sector activity. Over time, Armenia will need to demonstrate its genuine and unwavering commitment to these reforms, through a well-planned and expedient implementation of the announced measures, and proactive continuation of restructuring activities to attain the intended objectives. Most importantly, Armenia should develop and communicate its vision for the future of the power sector in order to mitigate uncertainties, from the perspective of potential investors, resulting from the current transitioning process.

## **2.4 Conclusions**

Despite external factors affecting both Armenia's economic development and investor interest in the country, significant opportunities exist to develop an internal institutional environment conducive to private power development in Armenia. As discussed in this report, Armenia needs to address, in a comprehensive manner, the regulatory, commercial, financial, and other technical constraints to IPP development that currently exist. The key to such an aggressive approach, however, lies in the internal organization, policies and strategy of the Government.

The Government has expressed commitment to encouraging private power development, but needs to develop and publicize a comprehensive and long term plan. This will put current individual reform measures within a clearly defined policy context and improve the credibility of these reforms from the perspective of domestic investors, the assistance and donor financing community, and the international investment community.

Most importantly, the IPP strategy should be developed and implemented with active sponsorship from the highest levels of Government. Responsibility should be given at a high level (e.g. Deputy Prime Minister) to ensure proper communication with developers up-front, to address any issues involving the Government, negotiate agreements on the Government's behalf, including dealing with the issue of sovereign guarantees, and ensure safeguarding of investor interests throughout the development and implementation process (e.g. helping with customs issues, etc.). This would be of tremendous assistance to developers, as most services and processes in the country are still within the control of the Government.

## **3 0 REVIEW OF LEGAL FRAMEWORK**

### **3 1 Framework for Investment**

Armenia has a legal framework for investment and private business activity that was largely established in 1992. The two primary laws relevant to investment are the ‘Law on Enterprises and Entrepreneurial Activity,’ and the ‘Law on Foreign Investments.’ These two laws, along with several Presidential and Governmental decrees regarding investments and privatization, provide a basic legal framework for business activity. However, a more comprehensive framework for commercial and energy-specific law has yet to be developed in Armenia. In addition, the enforceability of laws continues to be one of the main concerns, for both domestic and foreign entrepreneurs.

#### **Investment Laws and Commercial Codes**

Armenian law guarantees the basic rights of individuals and organizations to engage in profitable private business activity, and the creation of a wide variety of corporate structures. These include limited liability companies, joint stock companies, production cooperatives, and joint ventures. Most business activities are unrestricted by the Government. A limited number of activities, such as the ownership and operation of power generating and other utility facilities are permitted upon receipt of a license from the Ministry of Economy.

Companies with up to 100% foreign ownership can be formed in Armenia. Both domestic and foreign investors can freely choose the capital structures of their companies, obtain commercial credit in domestic or foreign currency, and issue securities. Enterprises with foreign investment can lease or use, but not own, land. They can acquire buildings and other property, shares of enterprises, and other types of securities and assets.

Despite the development of these general investment and business laws at an early stage in Armenia, little has been done since 1992 to develop a system of reliable commercial codes. Armenia continues to rely on old Soviet-era codes for many aspects of commercial law such as registration of property and securities titles. Also, Armenia needs to enable and ensure the creation of a framework for safeguarding investor and creditor interest, including the right to foreclose on property (private or Government) in accordance with principles agreed upon by the contracting parties in case of default. The absence of such codes will be a barrier to the proper development of all types of business activity in Armenia.

#### **Taxation Structure**

The primary taxes relevant to the development and operation of power facilities in Armenia are customs duties, corporate profits taxes, value-added taxes, property taxes, and personal income taxes. Most industrial production equipment imported is exempted from custom duties and most other taxes.

A Value Added Tax (VAT) varying from 16.7% to 20% depending on the nature of products is applied to the turnover of goods and services. Several categories of services and products are exempted from this VAT tax, including the following:

- 1) Goods, exported from countries of the former USSR, their loading, unloading, transportation service and transit convey through the Republic of Armenia,
- 2) Official purpose commodities for foreign diplomatic and consular representations, also commodities purchased in Armenia for purposes of individual use by non-residents or administrative-technical personnel of those representations,
- 3) Construction activities and other related activities financed by the Armenian Diaspora, international or foreign public/religious organizations, and
- 4) Public utility services (water supply, heat supply, energy supply, garbage removal)

A two year corporate income tax holiday is provided for all newly formed companies, with additional tax incentives for joint ventures as described in the next section. In general, corporate income taxes are applied in accordance to the progressive scale presented in Table 2.

**Table 2 Corporate Income Tax**

<b>Annual Income Range</b>	<b>Income Tax Calculation</b>
Less Than 360 Dram	12% of Income
361 Dram to 720 Dram	43.2 Dram + 18% of Income Over 360 Dram
721 Dram to 1080 Dram	108 Dram + 25% of Income Over 720 Dram
More Than 1080 Dram	198 Dram + 30% of Income Over 1080 Dram

Property taxes for enterprises range from 0.2% to 0.8% of the net asset base reflected in the company's balance sheet. Land taxes are also applied to the total value of private land owned or state-owned land leased, ranging to up to 15%, for example, for the use of agricultural lands. Personal income taxes are applicable to all individuals, for both Armenian citizens and foreigners, for all income derived from commercial activity within Armenia.

### **Foreign Investment**

Armenian law extends guarantees against expropriation, nationalization, discriminatory treatment, and unlawful confiscation of foreign investments without fair compensation. Foreign enterprises are also allowed unrestricted transfers of capital, including revenues, profits, compensation, interest payments, and liquidated investments in hard and domestic currency. An open currency exchange market exists in Armenia, and commercial banks can be used for international conversions and other transactions.

Foreign corporations and joint ventures operating in Armenia are, in general, subject to the same tax structure as domestic enterprises. Beyond the two-year tax holiday extended to all enterprises, joint ventures with foreign capital component are given tax exemptions of 30 to 50% of profits through the tenth year of operation, varying on the basis of the foreign share of the venture. These profit tax

exemptions are also extended to enterprises operating in the earthquake reconstruction zone. Furthermore, imports of machinery and equipment and other means of production destined to be used in the manufacturing process of enterprises with foreign investment are exempt from all customs duties.

The rights of US investors are further protected through two significant bilateral agreements between Armenia and the US. Both countries have signed the Overseas Private Investment Corporation (OPIC) agreement and the bilateral investment treaty. Armenia was the first of the former Soviet republics to sign an agreement with OPIC. The agency has agreed to provide investment insurance to US investors against political risk, project financing, loan guarantees, and overall investor services. OPIC coverage also includes inconvertibility coverage, enforcing the legal right to convert local currency into hard currency.

Armenia has also signed a bilateral investment treaty with the US. This treaty guarantees non-discriminatory treatment of US investments (competitive equality) in their admission to Armenia, and the right to repatriate into hard currency profits earned in Drams. The treaty also guarantees prompt, effective and adequate compensation in the event of expropriation, and the right to third party international arbitration in the event of a dispute between a US investor and the Armenian Government.

### **Enforcement**

While the Armenian Government intends to proceed with the development of additional legislation, it is widely recognized that one of the most important constraints to the implementation of this legislation will be the enforcement of laws and regulations. Armenia, not unlike other CIS countries, does not have a long history of fair and independent judicial processes. In Armenia, for example, judiciary functions are not separated from the executive branch of the Government by the newly adopted constitution, which gives the executive full powers to appoint and replace judges. Therefore, it can be assumed that impartial and transparent judicial processes may only develop over time.

Given the Government's continuing presence in most aspects of the economy, Armenia also needs to demonstrate precedents of fair settlement of disputes arising between private parties and the Government. In the case of US investors, Armenian law and bilateral treaties with the US have provisions for the settlement of disputes with the Armenian Government, but there have been no such precedents to date. The incorporation of international arbitration procedures are a common tool to mitigate uncertainties related to settlement of disputes in similar countries, and the Armenian Government has not raised any specific objections to arbitration in neutral forums. However, uncertainty remains regarding enforcement within Armenia of third party/international arbitration. It appears inevitable that inefficiencies, long delays and even inequities may arise in enforcing third party arbitration decisions due to the lack of experience with such issues in the judicial system.

### **3.2 Energy Legislation**

The greatest and most pressing institutional constraint to private sector development of energy resources is the lack of a legal framework specific to the energy sector. However, it appears that significant interest in passing and implementing a comprehensive energy law has been developing within the Government. The Hagler Bailly Consortium funded by USAID has been working with Armenian officials in developing an energy law since early 1995. If passed, this law would represent a significant improvement in the institutional environment for private investment in the energy sector.

The current draft of the energy law calls for the establishment of a decentralized and competitive energy complex, open to participation by the private sector. The current draft, if enacted, would provide enabling legislation for the private (or mixed private and public) ownership and operation of power sector facilities. In addition, clarifying policy-making roles in the energy sector, the draft provides clear responsibility to the Ministry of Energy to develop reform and development policies in the sector, while relinquishing direct operational and management control over the sector. This clarifies the uncertainties that currently arise from the division of policy-making responsibilities between the Ministry of Energy and the Ministry of Economy.

The draft law also calls for the establishment of an independent regulatory body, the National Energy Commission (NEC) responsible for approving tariffs and overseeing power sector activities. The Commission would have three commissioners nominated by the President and confirmed by Parliament, working in a non-political and professional environment. In addition to setting energy tariffs in non-competitive situations, the functions of the NEC, as proposed, would include issuance of licenses and oversight of safety and reliability standards for the sector.

The rate-making approach of the NEC would be based on the philosophy of full recovery of costs, including capital, operation and maintenance, and debt service, as well as profits, to accurately reflect cost of service and enable the future development of the sector. Rule-making by the NEC would be transparent, providing an opportunity for comment by affected parties and the population. These decisions would be binding, and subject to appeal only to the Supreme Court of the country. Finally, the draft law provides independent power generators open access to national transmission and distribution grids for the wheeling of power to third parties, with fair wheeling charges established by the NEC.

In addition to considering the adoption of the draft energy law, the Armenian Government has initiated several reform measures through Government decree. These include a decision to restructure the state utility, Armenergo, into independent commercial units, and the establishment of a Tariff-Setting Committee to regulate electricity tariffs, as a precursor to a permanent regulatory function in the future.

Although these decrees do not represent final solutions to reform needs, they are important transitional measures necessary to enable implementation of the energy law as it is currently drafted.

### **3.3 Conclusions**

Despite Armenia's initial progress in areas of privatization and legislative development, it currently lags behind many more progressive former Soviet republics, such as Russia and Ukraine, in developing

comprehensive commercial codes, energy sector legislation, and judiciary reform. Armenia's potential advantage, however, is that it could regain its status as a pioneer of reforms due to its manageable size and the availability of technical assistance resources.

Armenia's main focus at this point should be to adopt a comprehensive energy law as the first step of enabling private power. In the meantime, a market-based energy sector can be gradually implemented to provide the industry with the necessary experience in regulation and rate-making, and establish a track record of viable utility and power generation operation.

Until development of a comprehensive legal framework occurs, developers can mitigate numerous institutional risks through contractual means, as illustrated in this report. The advantage of this approach is that project development can proceed in parallel with legal framework development. The main risk, however, is that the development and negotiation process could be unnecessarily delayed in case the Government does not have a clear policy on the terms, concessions and guarantees that it is willing to provide for various potential projects. This would not only result in additional expenses for the developer, but a sense of frustration that could impact the financial community's perception of Armenia's readiness to facilitate IPP development. As a result, a key short term objective of the Government should be to develop internal consensus on the key issues, preferably in the form of standard agreements it is willing to enter into with developers. This will not only reduce development stage delays and risks, but also enhance investor confidence in the Government's commitment to enforcement/implementation of the contract terms.

## 4 0 OVERVIEW OF REGULATORY ISSUES

### 4 1 Regulatory Structures

An institutional framework conducive to private power development should have as its cornerstone a reliable fair, transparent efficient, and predictable regulatory system clearly defined by law. Despite Armenia's progress in power sector reform, it is still at an early stage in developing an appropriate regulatory framework. Concepts of regulatory independence and transparency have yet to take hold. Although the draft energy law has been designed to provide a reliable framework for utility regulation and private power development, significant work needs to be done before and after adoption of the law to further improve the environment for private power.

The draft energy law clearly defines the status, structure and authority of an independent power sector regulator, initially structured as a transitioning body within the Ministry of Economy, and over time evolving into a professional stand-alone regulator. However, even after adoption of the law, implementation of such a body capable of meeting its intended functions may take several years, as demonstrated by the experience of numerous other countries. Moreover, the current lack of a Government policy regarding the role of private power in the energy sector has resulted in general indifference or even resistance to private project development within the utility sector, and the unavailability of an established process for procuring and negotiating private power deals has resulted in unnecessary frustration for potential domestic and foreign investors.

Therefore, a transitional regulatory body, with increasing transparency and independence, should be initiated within existing Government structures to develop and train a nucleus group of experts for the future regulatory organization, provide practical experience in regulation to both the Government and the utility industry, and to demonstrate the Government's commitment to implementation of the energy law.

It appears that the inter-Ministerial Tariff-Setting Committee recently formed can serve this role and enable an effective transition to a permanent regulatory body in the future. This is certainly a major step towards facilitating implementation of the law when enacted, and enhancing confidence in Armenia's commitment to energy sector reform. Having established a legal framework and functioning regulatory organization, Armenia would need to show practical experience in application of the law and regulatory treatment of independent generation.

Although Armenia currently lacks experience with private power production, it can establish legal precedence in commercially viable power generation through the commercialization of existing generation assets. For example, as the generating plants in the Armenergo system are restructured into separate subsidiary companies, as is currently called for by decree, and it can be shown that wholesale tariffs for these plants are being set in a fair manner, and adjusted in a timely way to ensure the viability of the enterprises, investor confidence in the effectiveness of Armenian regulators would be significantly increased.

The restructuring of these assets, as it is currently called for by decree will not only set a precedent of independent generation for future private investments, but will also provide valuable experience to utility and regulatory officials in contracting with and pricing independent power. At the same time, Armenia's IPP strategy should include a clearly mapped process for not only obtaining licenses for power projects, but for initiating, developing and negotiating projects as well.

The following step should be to grant private producers additional revenue-side flexibility to increase profits and mitigate risks, as additional incentives. This can take the form of an established framework that provides IPPs the ability to choose their own customers, negotiate prices, and serve their end-users through a power wheeling arrangement with the grid. This can improve prospects of IPP development due to the existence in Armenia of viable small to mid size enterprises that can become creditworthy purchasers of power generated by IPPs.

## **4.2 Power Sector Rate-Making**

In terms of power pricing, three fundamental conditions need to be established to enable private power development in newly emerging markets. First, a reliable and predictable basis for setting and adjusting tariffs should be established for the entire power sector, including for independent wholesale generation. Second, developers must be assured that in the long term, tariffs will be adjusted in a timely and fair manner to ensure the viability of the generator as well as the purchaser, regardless of political pressures. Finally, if electricity tariffs in the country are relatively low, as is the case in Armenia, consumers' ability to absorb tariff increases resulting from new investments in generation must be either demonstrated or ensured through a viable mechanism (e.g. single creditworthy purchaser).

Armenia has recently taken some steps towards reforming prices in the power sector. In early 1995, a Government decree allowed Armenergo to calculate electricity rates for consumers using a dollar-denominated base, set at a level to cover operating costs. Power tariffs were set at an equal level for all classes of consumers. Although the Government's move to end the previous cross-subsidization of residential tariffs by industrial consumers is a step forward, power tariffs currently only reflect operating costs of the utility and do not include capital recovery or investment provisions for development of the sector.

The Government also allowed Armenergo to deny supply to non-paying customers that are not designated as vital industries, and implement stricter measures against power theft to reduce non-technical losses. These measures combined have resulted in certain promising improvements in the non-payments situation, and raised consumers' awareness about the need for a viable power sector.

One shortfall of these measures has been that they have not been presented as forming part of a comprehensive long term program for reform and reconstruction of the sector, but seem to be a continuation of the stop-gap measures adopted for crisis management. This accentuates the need for a long term strategy and implementation plan to increase pricing accuracy and enable predictable rate regulation, as well as improve management accountability in the power sector.

Regarding the regulation of IPPs, Armenia's power regulating agency, or the Armenian Government until the creation of such an agency, has yet to establish clear guidelines for the procurement and pricing of private power projects. In order to initiate the IPP development process, Armenia needs to specify up-front the financial incentives and tariff concessions it is willing to provide to investors in order to ensure financial returns commensurate with the country and commercial risks assumed. Table 4 presents examples of financial and other incentives provided to four diverse power projects.

One major recent step forward has been the creation of the inter-Ministerial Pricing Committee to regulate electricity tariffs. This Committee can now not only address the need to develop a framework for pricing IPP power, but also act as an initial contact group to institute an overall IPP strategy and enforce utility sector responsiveness and cooperation with private developers.

Another major challenge for Armenia will be to demonstrate the economy's ability to absorb the tariff levels that will be necessary to sustain new investments in capacity. One approach to minimizing the rate impact on consumers by new private power entrants would be to initiate lower cost smaller projects with tariffs that would be "blended" into the overall system, gradually phasing in larger projects as the capacity base expands and tariff levels increase.

### 4.3 Hydro Licensing

Building, owning and operating hydro-electric facilities in Armenia is considered a regulated activity, and requires a license from the Ministry of Economy. Despite the Government's expressed interest in the encouragement of privatized development of new hydro facilities, obtaining a license for a potential site has proven to be a bureaucratic, paper-intensive, highly confusing, and long-winded process.

The hydro-licensing procedures involve numerous Government ministries and agencies who are eager to control the process, yet who may not comprehend the complexities of developing private power projects and the related incentives that should be granted to promote investment. Table 3 identifies the Governmental agencies that take part in approving hydro facility licenses.

**Table 3**  
**Key Authorization Required for Hydro Licensing**

<b>Ministry/Agency</b>	<b>Jurisdiction</b>	<b>Typical Review Items</b>
1) Local Authorities	Land Ownership and Leasing	<ul style="list-style-type: none"> <li>• Lease terms</li> <li>• Asset transfer pricing</li> </ul>
2) Water Agency	Water Use and Availability	<ul style="list-style-type: none"> <li>• Diversion of water resources</li> </ul>
3) Ministry of Ecology	Environmental Impact of Hydro Facilities	<ul style="list-style-type: none"> <li>• Impact on quality of water, contamination</li> <li>• Environmental impact of dams</li> </ul>
4) Ministry of Agriculture	Land Irrigation, Fish Farms	<ul style="list-style-type: none"> <li>• Impact on water availability</li> </ul>

		for agriculture <ul style="list-style-type: none"> <li>• Impact on downstream fish farms</li> </ul>
5) Architecture Agency	Project Siting Building Design	<ul style="list-style-type: none"> <li>• Hydro site feasibility</li> <li>• Safety of designed structures, equipment</li> </ul>
6) Ministry of Energy and Armenergo	Energy Production, Transmission and Distribution, and Resource Allocation	<ul style="list-style-type: none"> <li>• Optimal siting of hydro projects</li> <li>• Efficiency of energy resource utilization</li> </ul>
7) Ministry of Economy	Privatization and Economic Reforms	<ul style="list-style-type: none"> <li>• Agreements from all Government agencies</li> <li>• Financial capability of developer</li> </ul>

Each ministry or agency in the process has, in effect, the authority to block a proposed project. At the same time, none of these entities has a developed set of guidelines and evaluation criteria for approval of projects, and there are no time requirements on any of these organizations to produce a positive or negative answer. When a license is issued by the Ministry of Economy, the developer is granted use of a given site for seven years, during which the plant must be constructed, operated and then potentially transferred back to the state. This in effect precludes financing of most hydro projects through traditional means.

In order to rectify this system, however, a detailed proposal has been developed by the USAID IPP Team and the Ministry of Energy to create a streamlined and transparent hydro licensing process which will be conducive to development and financing of private projects. This proposal is attached in Appendix A.

#### 4.4 Conclusions

Given its relative disadvantage in competing with other emerging markets for investment capital, Armenia's approach to promoting private power should be part of a comprehensive IPP strategy, rather than a series of reform measures that are not presented within the context of a long term vision for the industry. With the development of attractive concession packages (including guarantees and standard contracts) for specific projects and delineation of an efficient licensing and negotiation process, Armenia can eliminate many of the uncertainties and frustrations that developers experience now.

Armenia needs to determine the level of concessions in financial returns that will be required to compensate investors for the level of country and commercial risk that they are asked to assume. These should be competitive with concessions offered by other developing countries. Table 4 provides examples of concessions provided to private projects in four other countries as reference.

At the same time, it must be kept in mind that at a certain threshold of perceived risk, generally lower than for other types of investments, developers lose interest in projects regardless of the financial returns promised. IPP developers are more risk-averse than investors in many other sectors due to the high level of development costs required up-front, and the large levels of capital that can be put at risk. Therefore, the prospect of high returns should be combined with the ability for the country environment to effectively mitigate these risks.

## 5 0 COMMERCIAL ISSUES

### 5 1 Creditworthiness of Power Purchasers

The key to the financing of private power projects is the ability of the developer to enter into a long term and enforceable power purchase agreement with a creditworthy purchaser. In Armenia, this could be either Armenergo or one or more industrial enterprises. The creditworthiness of Armenergo, especially during the current phase of restructuring and decentralization, is unclear, and most probably would not sustain the development of sizable private power projects. Likewise, much of Armenian industry has only begun to emerge from the crisis situation, and even the most successful of enterprises may not be able to demonstrate a track record and certainty in future growth that is required to establish creditworthiness.

As a result the Armenian Government should be prepared to consider the extension of sovereign guarantees to back-up power purchase agreements with Armenergo or other state enterprises for projects which may not be financeable otherwise. Although Armenian Government representatives have often expressed willingness to extend such guarantees to investors, no clear mechanism or guidelines for obtaining sovereign guarantees for power projects has been developed to date.

One approach to resolving the issue of government guarantees is to identify a priority list of projects that the Government can promote with private developers, with a predetermined level of concessions and sovereign guarantees that can be obtained for each project. In this way, developers would have a clear understanding of the guarantees available, without undergoing a lengthy negotiation process to resolve such issues. This approach would also help the Government ensure that guarantees are used only as planned and appropriate, and can be phased out over time when IPP development gains momentum.

### 5 2 The Non-Payments Situation

The consumer and inter-company non-payments situation generally prevalent not only in the Armenian energy sector, but also throughout the CIS at this transitional stage, is also a major source of uncertainty that will only be resolved over time. A long chain of non-payments, compounded over time, has caused severe disruptions throughout the energy procurement and delivery process and the economy as a whole.

Although there are signs of improvements in this situation in Armenia as a result of recent reform measures, this is another area where sovereign guarantees would most likely be needed, in the near term, to back-up power purchase agreements between independent generators and state-owned enterprises and ensure timely payments to producers in case of default. Such guarantees may also be necessary, depending on the size and nature of certain projects, in light of difficulties in enforcing contracts and relying on the domestic judicial system, as described earlier.

### 53 Conclusions

However both the nature of guarantees that the Government is prepared to extend as well as the process of obtaining such guarantees has not been clarified. At the same time, the level and extent of guarantees that the Government may be willing to provide should correspond with the creditworthiness of the Government itself, particularly due to its limited resources and already extended obligations. This may not be an issue to extend guarantees to small projects, but specific assets may need to be provided as collateral in the event that guarantees are provided for larger projects, depending on the financing requirements.

In general, though, Armenia needs to demonstrate that it can offer a financially and commercially stable environment for business and investment activity, both foreign and domestic. Little demonstrable investment has taken place in the country since its independence, and several high profile foreign ventures have actually resulted in failure. As a result, policies promoting private power and concrete safeguards against factors that have led to the failure of other ventures, to ensure successful projects should be promulgated in a timely manner and effectively communicated.

## **6 0 FINANCIAL ENVIRONMENT**

### **6 1 Locally Available Financial Services**

The Armenian financial and banking sector given its early stage of development, is widely viewed as both limited and unreliable, as demonstrated by recent cases of securities and financial services fraud and bank closures. Numerous banks exist in Armenia, but most seem to be geared towards the financing of trade and other short-term, high-yield transactions. A legal framework has yet to be developed for the sector. As a result, investment in private power projects will be impacted both in terms of unavailability of local debt financing instruments for domestic developers, and limitation in the ability to conduct large scale currency conversions and international transfers for foreign investors.

This situation is promising, however, and may be improved through appropriate Government attention. The Armenian Government, with assistance from USAID and other technical assistance organizations, is in the process of developing a more stable framework for the financial services industry, and at least one reliable foreign bank is in the process of establishing branch offices in Yerevan. At a minimum, key financial transaction services would be available as a result. What may continue not to be available for some time, however, are such services as performance bonds and letters of credit, which may make contracting with domestic contractors more difficult and costly.

### **6 2 Insurance Market**

At least as important as the availability of a reliable banking sector, however, is the availability of insurance services. Insurance is a critical risk mitigation tool in power project development, utilized to cover certain construction and operation risks, equipment transport and storage, and other accidents, as well as political risks. Armenia currently lacks an insurance market, and as seen in other CIS countries where foreign business activity is more prevalent, outside insurance providers would most likely be highly hesitant to cover in-country events for a long time to come. Furthermore, political risks may be covered for American developers through OPIC, but such coverage is not yet available for other investors.

Until a reliable insurance market develops in Armenia, the most effective source of coverage for many in-country events would most likely be the Government. Such coverage can be extended by the Government to specific projects for a fee, with terms similar to those that may be obtained from the private sector elsewhere.

### **6 3 Currency & Inflation**

The Government has adopted a clear policy of pegging electricity tariffs to the Dram-Dollar exchange rate, as most energy resources are imported in hard currency. It appears that a similar willingness to compensate independent power producers for losses incurred as a result of currency and inflation variations also exists, but such guidelines have not yet been developed. Such indexation of tariffs

should be part of the overall concession package, as they would be required by investors and lenders of any project with a foreign currency investment component

Flexible tariffs should also be adopted to cover unexpected cost increases during the construction phase of projects due to the highly uncertain macro-economic environment in the country. Armenia is still at a very early stage of price formation due to the slowdown of economic activity and it will be difficult to accurately estimate equipment, transportation, labor, and other construction and operation costs over any extended period of time.

#### **6.4 Conclusions**

Given the limitations in availability of key financial services such as insurance in Armenia, Government involvement, to the extent possible, is necessary to diminish investor uncertainties. Such involvement can be reduced over time, as financial and insurance markets develop as required to sustain power project development.

Projects should also be given relatively favorable treatment at an initial stage in tariff flexibility due to the inability of outside investors to assume domestic currency or inflation risks. Sovereign guarantees for protection of investment capital against unexpected currency fluctuations should also be explored for certain cases.

## 7 0 TECHNICAL & INFRASTRUCTURE CONSTRAINTS

### 7 1 Physical Constraints to Energy Resource Development

There are two general technical and physical characteristics of the Armenian power sector that may affect development of private power projects. These factors should be considered in the selection, structuring and financing of projects.

First, private power development, in the near term, will most likely be largely limited to hydro and renewable sites, due to the tremendous fuel risk posed by frequent fuel supply interruptions. At the same time, only three large hydro sites (60 MW and higher) and another two (between 20 and 60 MW) are available in the country for greenfield development. Most of the approximately 400 MW of hydro and other renewable potential consists of smaller sites that can sustain stations of 2-10 MW. Given the high fixed development costs required to develop international private power projects, it is likely that involvement by foreign project developers in greenfield projects in Armenia will be limited by the availability of good sites.

Second, due to the severe energy shortages in Armenia, the national grid is currently operated on a rotational blackout basis, which isolates entire regions or districts from the main grid for much of the day. Under this system, some hydro stations in remote areas may be frequently isolated, without power sales, except for short periods of time within which the specific region receives central service. Due to these frequent interruptions, therefore, the concept of wheeling power from captive generation assets across regions could be unrealistic for many proposed projects in the near term.

### 7 2 Labor & Contracting Resources

Armenia's recent experience in construction of power plants, especially during the few years since independence, is very limited. In addition, limitations in resources that need to be applied for the proper operation and maintenance of existing plants have also led to substandard maintenance practices and severe equipment degradation, potentially undermining investor confidence in the availability of reliable labor resources in the country. As a result, projects with foreign capital components will require higher than usual involvement by expatriate construction and operation personnel, thereby raising project costs.

A second practical constraint is that the Armenian labor force is still organized largely within structures of state-owned organizations. Private construction or other contracting firms that can complete sizable projects reliably are yet to be formed. This poses two potential difficulties. First, adequate pricing of services provided by existing institutes or contractors may be difficult, as these organizations have not yet had much experience dealing with private clients. Second, developers may not want to risk contracting with organizations which have not been proven viable in the current market, in the event of the need to enforce performance guarantees and penalties, or to resort to liquidated damages provisions.

### 7.3 Conclusions

Armenia's IPP strategy should recognize the realities of technical constraints as well as limitations in the labor market. With regards to limitations in potential sites that may be developed through foreign investment in a viable manner, the Government should ensure that these key sites are developed in the most effective and efficient manner possible. These sites should be awarded to developers on an exclusive basis only upon demonstration of the ability of the developers to finance the project, in order to avoid unnecessary delays in the future. Without such scrutiny of the capabilities of developers, these key sites may be awarded to unqualified developers precluding potential participation by qualified groups.

Regarding the availability of reliable contractors in Armenia, the ongoing commercialization of the power sector and the planned privatization of support organizations should over time create an efficient and reliable contracting pool. Until then, and until the development of an insurance market that can backstop performance guarantees, Government involvement may be necessary to backstop/guarantee performance commitments for key projects by state-owned enterprises.

## 8 0 EXAMPLES OF INCENTIVES FROM SUCCESSFUL IPP PROJECTS

### 8 1 Overview of Investment - Related Incentives

In the general context incentives to stimulate and encourage private investments in the power sector must recognize that the preponderance of private investors/developers will utilize project financing or bank financing to augment and support their investment. The incentives highlighted below have all been used by countries, including the United States, to successfully encourage private sector investment in the power sector.

These incentives range from those which are absolutely essential (i.e. - minimum required) in any context, to those which provide additional concessions to investors to compensate for relatively higher risk factors in the overall environment. In this regard, not all such incentives are purely financial in nature, but each incentive highlighted below offers a major inducement to inside and outside investors considering an independent power project in a country like Armenia.

- (1) **Currency Protection** - National Legislation must foster currency protection. This includes making available foreign exchange for all project costs and incomes, repatriation of all profits, guarantees against expropriation of investment by the National Government.
- (2) **Sovereign Guarantees** - If the entities, supplying, purchasing or paying for the independent power supply are governmental agencies, such as utilities, fuel supply or transportation agencies, and if those agencies are not financially sound, then the government may have to guarantee the payment of the obligations of those agencies.
- (3) **Legal Framework Governing Private Ownership** - Laws must exist which clearly spell out the permissibility of private ownership of generation (and also transmission/distribution) assets, and which allow establishment of in-country project companies which are solely liable for the project's activities/obligations. Allow internationally acceptable contract-law processing, such as arbitration resolution.
- (4) **Trade Barrier Protection** - Protection against restrictive import tariffs, customs duties, levies, etc., on both imported equipment and fuel.
- (5) **Streamlined Regulatory Processes** - Elimination of confusing multiple bureaucratic processes for issuance of permits, licenses, clearances, etc. Rationalization of the agencies and ministries with which the developer must deal. Provide a clear process for the developer to follow, e.g., "one-stop processing". Establish a high level government entity with authority to approve foreign investment.
- (6) **Creditworthy Market Opportunity** - Allow sales to, and revenue from creditworthy private industries, in addition to government owned utilities and agencies which might be financially unsound, or which depend on government subsidies.

- (7) **Financial Incentives** - Provide attractive financing incentives, such as allowed minimum "Return on Equity" depreciation methodology (e.g. allowance for tax-deductibility acceleration, etc.) debt-to-equity ratios on investment etc

## 8.2 Comparative Incentive Analysis

To provide a useful comparison tool for Armenia, Table 4 below presents the incentives provided by various developing countries to attract private investment into their generation sector. These incentives generally are designed to compensate for the level of perceived institutional risk from the point of view of a private investor, domestic or foreign. The four projects presented in Table 2 are all successfully privatized projects developed over the past five years. Each presents a unique approach to structuring private power projects, specifically tailored to the institutional environment of the host country. Below is an overview of each project.

- **1,292 MW Hub River Power Project, Pakistan**

Hub River has emerged as a unique model for successfully implementing complex commercial financing schemes in a complex environment. It is the largest Build-Own-Operate (BOO) power project of its kind. When completed, this project will provide 1,292 MW capacity addition to the Pakistan national grid. Sponsorship for the project is provided by the Hub River Power Group, consisting of international private interests. These include Xenel Industries (Saudi Arabia), Mitsui & Co (Japan), Ishi Kawajima - Harima Heavy Industries (Japan), British Electric International (UK), and K&M Engineering and Consulting Corporation (US). Lending for the project was obtained from numerous commercial banks around the world, at varying currencies and terms. The World Bank has provided significant financing support as well as political risk guarantees to commercial lenders. The negotiated tariff is based on an 18% allowed/real internal rate of return (IRR).

- **Al Manah Power Project, Oman**

The Al Manah project has become a model for the privatization of infrastructure projects throughout the Middle East. This 90 MW project is being financed by a private consortium, consisting mostly of domestic Omani industrial concerns. The project will be transferred to the Oman Ministry of Electricity and Water after 20 years of operation. This project has been partially financed by the IFC, and 40% of the stock will be floated on the Oman Stock Exchange. The tariff for the project was based on a competitive bid.

- **Rockfort Diesel Power Station, Jamaica**

In 1991, the Government of Jamaica introduced legislation which encourages private participation in the power sector. Shortly after the legislation was officially in place, K&M was retained by the World Bank and USAID to undertake a broad policy review of the existing

institutional constraints that must be addressed before private power can become a reality in Jamaica. The services involved structuring the project security package, preparing the procurement documents and evaluation criteria for the procurement of this 65 MW diesel power project on a privatized basis. The project has been awarded to a U.S. investor based on a competitive international tender. Electricity will be sold back to the national utility.

- **Mamonal Power Project - Colombia**

Under the new policy of the Government of Colombia to allow cogeneration and private power, the project developer was not only the first to implement such a capital project in Colombia, but in Latin America as well. The project reached financial close in eight months. It is considered to be one of the most innovative deals in the world, as the first private power project to be financed on a non-recourse project basis, without any sovereign guarantees to backstop the power purchase agreement. Based on the success of this first private project, Colombia has been able to procure several additional projects with outside investment. This project was developed and is owned by K&M under Colombia's new energy and institutional policies for private power development. Electricity produced by this power generation facility will be sold to twenty-four nearby industrial users on a take or pay basis in a major shift in energy policy in the country. The first phase of the 100 MW, US \$70 million Mamonal gas-fired power generation facility reached commercial operation in July 1993. The plant will be leased to a private Colombian group which will be responsible for its operation and maintenance. Power will be wheeled to nearby industrial customers at a negotiated tariff.

**TABLE 4**

**COMPARISON OF INVESTMENT - RELATED INCENTIVES FROM  
FOUR SUCCESSFUL PRIVATIZED INDEPENDENT POWER PROJECTS**

<b>Type of Incentive</b>	<b>Hub River BOT Power Project - Pakistan</b>	<b>Manah BOT Power Project - Oman</b>	<b>Rockfort BOO Power Station - Jamaica</b>	<b>Mamonal Independent Power Project - Colombia</b>
<p><b><u>Currency Protection</u></b> (Foreign Exchange Convertibility, Repatriation of Profits, Guarantees Against Expropriation)</p>	<p>Full foreign exchange convertibility Profits can be repatriated cannot be nationalized without fair compensation Foreign currency bank accounts can be kept in Pakistan and, for selected uses outside of Pakistan</p>	<p>Government guaranteed availability of foreign exchange, right to maintain foreign currency bank accounts in Oman, and right to transfer any foreign exchange abroad from the project</p>	<p>Government will not impede the developer's ability to purchase foreign exchange, maintain foreign currency accounts or transfer profits abroad If exchange controls are subsequently imposed Government commits to make foreign exchange available</p>	<p>Guaranteed free convertibility of currency</p> <p>Repatriation without taxation of project revenues to pay for hard currency expenses</p> <p>Repatriation of profits with little or no taxation under leasing arrangement</p>
<p><b><u>Government Guarantee</u></b> (Guarantee of Obligations of Governmental Contractors/Suppliers)</p>	<p>Government guarantees the contractual obligations of the purchaser of electricity and the seller of fuel (both of which are government entities)</p>	<p>Government guaranteed fuel supply and deliverability if fuel is unavailable, MEW will still pay the capacity charge for the plant</p>	<p>Government guarantees JPSCo's payment obligations to the developer under the PPA</p>	<p>No government justification of private sector agreements</p> <p>Private sector guarantees all public sector obligations to the project</p>
<p><b><u>Legal Framework Governing Independent power Ownership</u></b> (Laws in Existence Spelling Out Permissibility of Private Ownership Internationally Acceptable Contract Law, Arbitration Resolution)</p>	<p>Extensive legal framework encouraging independent power development Implementation, power purchase, fuel supply, and offshore loan agreements are under British Law Arbitration under international rules</p>	<p>Private investment laws already in place</p> <p>Government granted an exclusive right to develop build, own, and operate a power project and transmission interconnection to the developer owner and warranted</p>	<p>Independent power and private investment laws already on the books</p>	<p>Long tradition of acceptable contract law</p> <p>System for litigation to adjudicate contract disputes</p> <p>Strong enforceable lien law to taking security interest in project in event of default</p>

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		that it will purchase all net energy generated Government granted leasehold interests for the site including all rights of way, easements, and access arbitration and governing contract law clearly spelled out		
<b><u>Trade Barrier Protection</u></b> (Tax Incentive Protection Against Restrictive Import Tariffs, Customs & Duties on Imported Equipment)	Exemption from import duties on all power generation equipment  Income tax holiday for the life of the operating company	Exemption from all customs duties  Ten year exemption from all Omani income taxes	Exemption from all customs duties and tariffs for imported electrical generating equipment	Exempt from the 15 percent customs duty  Independent power projects exempt from 14 percent value added tax  No trade barriers or tariffs for imported equipment  No obligations to purchase locally made products in lieu of imports
<b><u>Streamlined Regulatory Processes</u></b> (Provide a Clean Process for the Developer to Follow such as One-Stop Processing)	Specific agency established to coordinate private power projects Responsibilities of the agency being expanded to simplify process of dealing with government	Government warranted that all permits, licenses and approvals would be granted in a timely manner	Government will not indiscriminately prohibit the developer from obtaining required permits and licenses If Government fails to grant such approvals, the developer is excused by Force Majeure	Generally clear and precise legal and regulatory framework  No restrictions on developer contact with ministries involved

**TABLE 4**

**COMPARISON OF INVESTMENT - RELATED INCENTIVES FROM  
FOUR SUCCESSFUL PRIVATIZED INDEPENDENT POWER PROJECTS**

Type of Incentive	Hub River BOT Power Project - Pakistan	Manah BOT Power Project - Oman	Rockfort BOO Power Station - Jamaica	Mamonal Independent Power Project - Colombia
<p><b><u>Creditworthy Market Opportunity</u></b> (Permit Electricity Sales Directly to Creditworthy Private Industries)</p>	<p>Allowed</p>		<p>provisions Not presently in the Agreement</p>	<p>All sales go to a private purchaser with some onward sales to the government grid for excess electricity</p>
<p><b><u>Financial Incentives</u></b> (Provide Attractive Return on Equity Debt-to-Equity Ratios, and Depreciation Methodologies)</p>	<p>Market Oriented Tariff with Appropriate Indexation, at target IRR allowed of 18% (real)  Debt-Equity ratio is 80/20  Private Sector Energy Development Fund endowed by bilateral and multilateral donors  ECO Fund access at the World Bank</p>	<p>Tendered process with competitive tariff  Debt-equity ratio is 67/33</p>	<p>Tendered process with competitive tariff  Flexible debt-equity ratio from 80/20 to 70/30 depending on financing sources</p>	<p>No restrictions on equity return  No requirement for local equity participation  Debt-equity ratio is 80/20  Modern depreciation and tax credit methodologies</p>

## 9 0 SUMMARY OF RECOMMENDATIONS

Armenia's IPP strategy should be based on the specific strengths and weaknesses of the country taking full advantage of opportunities and offsetting barriers already identified. As presented in this report one of Armenia's key weaknesses is its institutional environment. Armenia also lacks the market size and related opportunities of countries as large as, for example, Russia. At the same time however Armenia has a significant strength in that as a relatively small country it can be more manageable and more innovative in creating an attractive environment for investors.

Armenia should also tailor its IPP strategy specifically to the types of power developers it needs to attract, and the sources of financing that will be available in the near future. For example, it is more likely that small to mid size developers may be more likely to be interested in Armenia due to its market size, while larger and more recognized developers focus more on countries such as China, India and Russia. Therefore, Armenia can structure an environment that specifically encourages development of small to mid size projects on a project finance basis.

Also, it is most likely in the near term that most projects will involve financing from donor and multilateral banks, until the environment can sustain the involvement of commercial banks. Therefore, any IPP procurement process adopted should be compatible with multilateral bank requirements, such as transparency in regulation and competitive bidding for project awards.

The following are a series of recommendations in summary form, based on the findings and conclusions presented in this report. They provide general principles for a comprehensive and proactive approach to developing an institutional environment conducive to IPP development, specific to the unique situation of Armenia.

### **Political Environment**

- A) Ensure internal consensus regarding privatization policies and private power,
  - 1 Develop cross-political understanding of objectives of proposed energy law,
  - 2 Develop comprehensive strategy with input from all influential interest groups,
  - 3 Ensure public understanding of and confidence in Government initiatives through well-planned communication
  
- B) Develop a comprehensive strategy for promoting private power,
  - 1 Define desired long term role of IPPs in the Armenian power sector,
  - 2 Develop Government policy related to concessions that can be provided to developers, taking into account incentives provided in other countries,
  - 3 Prioritize projects for development, and develop financing strategy for various types of projects, with corresponding required concessions,
  - 4 Publish Government guidelines and incentives, with a road-map for application/negotiation

- C) Ensure high-level sponsorship,
  - 1 Assign high-level official with responsibility for promotion of IPP investment
  - 2 Create an IPP “task force” to assist developers with addressing Government-related issues  
Assign negotiating and decision-making responsibilities on private power within Government The IPP “task force” could be the energy regulatory body, or a committee of multi-disciplined specialists from various ministries and Armenergo

### **Legal Framework**

- A) Adopt a comprehensive and progressive energy law,
  - 1 As a minimum, adopt key principles outlined in current proposed draft law,
  - 2 Implement aspects of the law as soon as possible, through decrees if necessary, to ensure timely implementation and demonstration of commitment
- B) Improve overall legal framework to address issues relevant to private power,
  - 1 Continue ongoing work on modernization of commercial codes,
  - 2 Adopt contractual approach to addressing legislative gaps
- C) Demonstrate impartiality and efficiency of the judicial system, demonstrate acceptance and enforcement of international third party arbitration decisions

### **Regulatory Framework**

- A) Develop an efficient and transparent process for initiating, negotiating, and pricing of private power,
  - 1 Require the Tariff-Setting Committee to develop guidelines for pricing wholesale generation, for example
    - Establish pre-determined bid prices (e.g. 6 cents/KWh) to procure small hydro projects
    - Establish rate of return approach for larger projects
    - Test private sector appetite for projects by tendering a project as BOT/BOO
  - 2 Develop overall process for interfacing with developers
  - 3 Define process and scope for providing Government guarantees,
  - 4 Provide training to regulators on private power development
    - Regulatory regime should be based on actual experience with contracts
- B) Streamline current licensing process to resemble a one-stop approach (See Appendix A)

- C) Commercialize and partially privatize the current energy complex,
  - 1 Develop practical experience in contracting with and regulating independent generators
  - 2 Demonstrate regulatory fairness to generators through establishment of a track record of viable operations,
  
- D) Develop and publish concessions that the Government is willing to provide to various types of projects, including
  - 1 High profitability (taking into account availability of return of 25-30% in countries perceived to be less risky),
  - 2 Revenue-side flexibility (regulatory enforcement of power wheeling),
  - 3 Sovereign guarantees, where necessary,
  - 4 Insurance, with Government involvement where no insurance market available,
  - 5 tariff indexation to currency exchange or other indexes as appropriate
  
- E) Develop standard contracts, based on sample contracts already provided by the Hagler Bailly Consortium, including
  - 1 Power purchase agreement defining creditworthy customer, tariff structure and adjustment mechanisms, wheeling arrangements, tariff levels/profitability,
  - 2 Implementation agreement defining Government's role to support project, pre-approved guarantee terms, project implementation process, possible on-lending if multilateral bank financed

### **Commercial Issues**

- A) Address non-payments and default risks through Government guarantees,
  - 1 Identify creditworthy purchaser, where possible,
  - 2 Provide Government back-up guarantee if necessary
  
- B) Develop standardized agreements to demonstrate up-front commitment and enforcement of contracts by Government,
  
- C) Provide full coverage for equipment transportation, and physical security, if insurance unavailable,
  
- D) Continue to commercialize the utility sector to improve viability in the power industry, leading to self-financing and individually accountable enterprises,
  
- E) Enforce full utility sector cooperation with selected private power developers

### **Financial Issues**

- A) Ensure availability of key financial services and full convertibility of the Dram, and extend coverage of investment capital against currency fluctuations (currency risk),
- B) Provide tariff adjustment mechanisms to ensure coverage of inflation and currency exchange uncertainties,
- C) Provide insurance coverage, for a fee, in areas where insurance is critical for project development but lacking in Armenia

**Technical & Labor Resources**

- A) Provide coverage for performance of domestic contractors
- B) Ensure qualification of project developers prior to awarding of projects, avoid precluding other investors by allowing one developer to “lock-up” a project,
- C) Ensure full cooperation by Armenergo to resolve all interconnection and technical matters

The recommendations above should be implemented as one cohesive package, rather than on a piecemeal basis in order to raise investor confidence that the Government has adopted a comprehensive and well-developed program

**ATTACHMENT A**

**ARMENIA INDEPENDENT POWER  
DEVELOPMENT AND PROMOTION**

**JOINT PROPOSAL FOR  
RESTRUCTURING THE LICENSING PROCESS  
For Private Sector Hydro Power Projects**

**Ministry of Energy of Armenia**

**&**

**USAID IPP Team**

*December 1995*

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## Executive Summary

With the opening of Armenia's electrical sector to private development, a system for licensing hydroelectric projects was instituted. While the system addresses some necessary elements of regulating the projects, there are too many uncertainties to attract necessary private capital to the projects.

Weaknesses of the current system include, a cumbersome and non-comprehensive process, questionable rights of a licensee, lack of priority setting, limited methods for resolving project issues. An even larger problem is that the license holder's rights and responsibilities are not clearly provided by the license. The term of 7 years is too short. There are also very limited requirements on the licensee, both for taking action in constructing the project and later in project operations. There are no clear procedures for revoking the license, which leaves both the developer and Government unprotected.

Based on review of Armenia's process and resource potential and the systems which have worked in other countries, a proposed change to the licensing system has been developed. The proposed system is similar to the United States system, however with less bureaucracy and a shorter process.

The proposed system would have the license issued by the National Electric Commission, which would be established under the proposed Energy Law. The NEC would have a dedicated staff to hydro power licensing and monitoring. A process is proposed where the current multiple required approvals and permits from the Water Agency, Ministry of Ecology, National Land Authorities and the Hydro Institute would be combined into a single action and license document. The NEC would be responsible for receiving approvals and project comments from each of these agencies and would combine them into the issued document. The NEC would also have the responsibility of resolving issues and making final decisions on the license conditions.

The structure and status of the NEC will be defined in the new Energy Law. However, recommendations in this report can be implemented in a staged manner even before approval of the law, with the NEC's licensing functions residing in one of the ministries initially.

Under this proposal, the developer is required to find a power market for the project power separately and acquire the non-national land rights for the project.

## 1 Background

The Armenian electrical supply system is in a state of rapid change. Government and electrical sub-sector reforms and restructuring have been taking place since the gaining of independence.

The private sector is being considered a major resource for the future electrical supply for Armenia. Within the total country resource base, potential hydroelectric developments are a significant sum. Previous studies have identified as many as 300 projects which could provide over 500 MW of project capacity.

Despite the need for additional generating capacity, the existence of these resources and the interest of local and international developers, the implementation of even the most economic projects has not progressed. There are a number of institutional reasons for this lack of progress. Many of these have been identified and addressed in other tasks of the overall USAID program and other international missions and activities. Some of these items include:

- Institutional Uncertainty
- Lack of Clear Private Power Policies
- Inadequate Legal Framework
- Inadequate Regulatory Framework
- Inadequate Commercial Environment

Included in the problems of the regulatory framework are the inherent problems in the licensing of hydroelectric projects. The current system provides for licensing potential projects. However, the license does not provide for any particularly clear rights or responsibilities of the license holder. The process is cumbersome, without clear lines of responsibility and authority within the Government to make decisions. It is possible for a license holder to tie up a site for a long period of time, without ever initiating construction on the project.

In early 1995, an analysis of the current licensing process was completed with preliminary suggestions on an alternative approach. In October 1995, discussions were held with individuals within the Ministry of Energy and as well with representatives of other Ministries at the Roundtable on Private Power in October, 1995. A major topic of consideration was the regulation of private sector hydropower projects. The reasons for regulation and alternative methods of regulating the projects were discussed at the roundtable. Following the collection of this information, the following recommendations for license process improvement have been formulated. Certain issues which must be decided by the Armenian decision makers are also identified.

## 2 The Existing System

Currently, a license for development, construction and operation of a hydroelectric project is issued by the Ministry of Economy. The license is limited in definition, but has a seven year

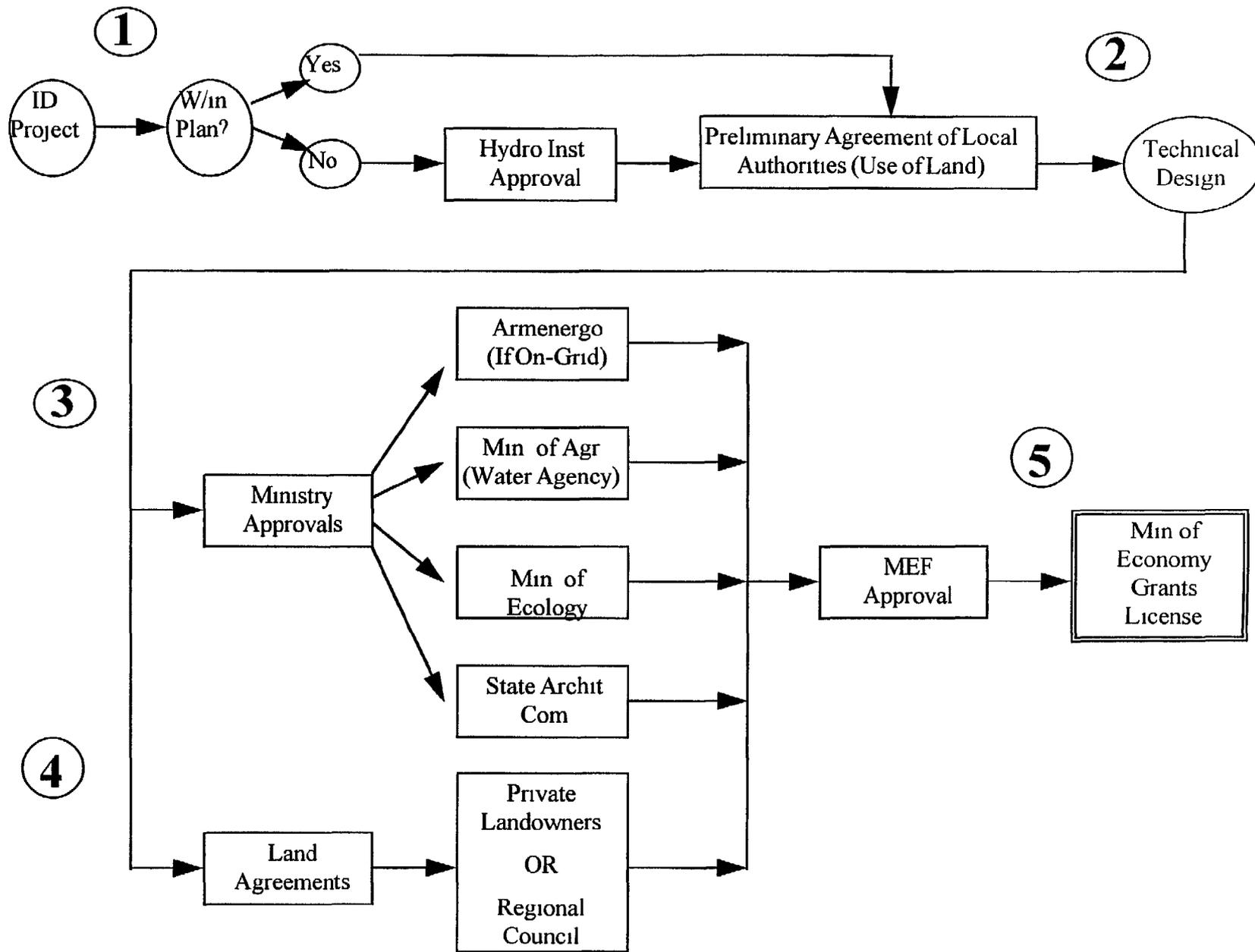
effective period. There are no milestones for the licensee to perform in constructing the project nor are there specific obligations to do so.

Over 300 hydroelectric projects have been identified by ARMGUIDROPROJECT as part of the master plan for project development. This plan covers most of the country and most water courses where any size development could be completed. These projects are open for development by any private entity at this time. Other potential projects are also open for development, however any other projects must not interfere with the national Master Plan projects.

The general process for the licensing of projects under the current program is shown in Figure 1. The following general steps must be followed:

- a) After identification of the project, the developer must review the Master Plan of ArmguidroProject. If the project has been identified and there is no license, the developer can proceed to seek approvals from other authorities for submitting a license request.
- b) Once the project is approved as consistent with the Master Plan, the developer can proceed to the land owner to attempt to gain a preliminary approval for use of the project lands. In many cases, the land owner will be a regional authority.
- c) The project developer is required to develop a preliminary design of the facility. This level of design is simplistic, requiring only simple diagrams and descriptions of the output and operations parameters. For projects in the Master Plan, most of the information will be available.
- d) The preliminary design is then submitted for approval from four Ministries and Governmental organizations:
  1. Armenergo, if power is to be sold to the grid,
  2. Ministry of Agriculture Water Agency for water use rights
  3. Ministry of Ecology for environmental approval
  4. State Committee on Architecture for construction approval
- e) Concurrently, the developer must secure the use of the land at the proposed site through agreements with land owners.
- f) With approval from the four Governmental organizations and regional authorities in hand, the developer applies to the Ministry of Energy and Fuel for its approval.
- g) After approval by the Ministry of Energy and Fuel, the developer applies to the Ministry of Economy, Licensing Department for issuance of the license.

**FIGURE 1: CURRENT LICENSING PROCESS**



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After issuance of the license the licensee has 7 years of "rights" to the project. The license does not have performance or schedule milestones to meet in order to maintain the license. It does not have specific performance or compliance conditions. It also does not state what the rights of the license holder might be relative to selling or surrendering the license, what liabilities the holder may have and what will be the disposition of the project at the end of the license.

Including these functional shortcomings of the actual license, the process has a number of **weaknesses** which will serve to inhibit the development of the hydroelectric resources within Armenia.

- a) The process is cumbersome and can be hung up on a single approval from a particular agency or interest group. There is no opportunity to view the project comprehensively, or for the interested agencies to work together to complete an approval or work out possible problems with the project.
- b) The period of licensing is only seven years. The actual life of the facility should exceed 30 years, with moderate maintenance. Due to the capital intensive nature of hydroelectric projects, payback of capital would take far longer than 7 years. With only 7 years to complete design, financing, construction and commissioning, the project could have as little as 2 or 3 years remaining to operate for payback revenues. This item alone makes private development nearly impossible. While there is a possibility of renewal of the license, there is no orderly manner to guarantee such renewal, allowing for political or legal shifts to change the entire process.
- c) The actual license rights are questionable. There is no certainty what will happen after expiration years. The license could be acquired by other parties and land ownership, water rights and other elements could come together to make the project feasibility questionable.
- d) The process is not clear as to priorities of development. If there are several applicants for the same license, who gains approval? Currently, it would appear that such rights would go to the development entity who first gains land rights. However this may or may not be the best criteria for issuing the license. While land rights may be the priority to be set, some other criteria may be better established.
- e) There is little transparency nor set scheduling for the process. The licensee has no responsibilities to actually construct the project. There are no milestones or conditions which must be met to maintain the license. There are also no set circumstances or process specifying when or how the license could be revoked. This provides no protection to either the Government nor the license holder. A developer could tie up a site for seven years with no work done on it. Further, the developer is not protected from having the license revoked for unsuspecting reasons.

- f) There is no provision for monitoring the license to ensure developer compliance with requirements

### 3 Regulatory Philosophy

The reasons for regulating hydroelectric projects differ between countries based on the objectives of the regulatory legislation. Some countries use hydroelectric power regulation to control development, others use it to ensure compliance with environmental and safety standards. Generally, there are five objectives which could be considered of importance in establishing a regulatory program for private hydroelectric projects. Depending on the importance of each of these objectives placed by the decision makers for Armenia, the program should do the following:

a) Provide a stable system for licensees

The current system fails in this regard, as evidenced by the weaknesses in the current system described above. In order to enable and encourage investment, the system must provide for clear and articulate project rights, for reasonable periods of time. The investment in a hydroelectric project requires a very large percentage of capital in the beginning. While operating costs are very low, compared to generating alternatives, it takes a relatively long period of time to be repaid the initial investment, plus a reasonable profit.

b) Orderly Development

Most countries regard rivers and water resources as public resources to be allocated in a manner consistent with the public interest. Further, most countries have a history of allocating the rights for water for irrigation and other purposes. Armenia has a very long history of irrigation and contains some of the oldest water diversion works in the world.

c) Environmental Protection

Protection of the environment is an important element in virtually all regulatory plans. The environmental aspects of the regulations should ensure that impacts are minimized and mitigated to the extent possible on:

- People in the project area and downstream
- River flows and aquatic life
- Adjacent lands and wildlife

As some impacts are unavoidable as any project imposes change, some basis for applying sound environmental planning and mitigation and making final decisions must

be established. Some entity must be made responsible for issuing a license based on the priorities established for balancing competing interests and protecting resources.

d) Comprehensive Development of Resources

In countries where hydroelectric power is an important resource, it is important to protect the development of the resource and ensure that comprehensive and efficient development take place. Competing projects could be making use of the same resource. Development of a small project could eliminate the possibility of developing a large and important resource in the future. Thus, the country has an interest in making sure a project is consistent with a comprehensive development plan.

e) Compatibility with other Water Resource Uses

While hydroelectric projects do not consume water, certain operations or diversions could be incompatible with other water resource users. Diversion of water or releases during certain times of the year may be inconsistent with agricultural uses or local domestic or industrial water supply needs. These needs must be reconciled during the licensing process with clearly established operating rules for the licensee spelled out.

Currently, the Armenian system addresses some but not all of these aspects. A reformed process should be established, making active decisions on the objectives of the program.

#### **4 Alternative Approaches**

There are a number of different methods to implement a private power licensing program. No two countries have addressed the issue in exactly the same method. Further, most programs have continual small changes to the program. For example, the United States has had a consistent regulatory body and set of laws and regulations in place since the 1920's. However, the system and rules have changed on numerous occasions. These changes reacted to external changes in conditions, such as the changing nature of the hydropower industry, focus on environmental conditions and changing responsibilities of federal Government agencies. The changes did not impact existing licenses, only the licensing process and licenses issued in the future.

There are five alternative approaches discussed here with some examples of different countries systems which have been adopted, with the advent of private power.

a) Multiple Permitting

Currently, the Armenian Hydropower regulatory system is closest to a multiple permitting system. Permission is required from three ministries, the architectural committee, Armenergo

and land owners prior to requesting the license from the Ministry of Economy. The license is granted only after all of these are completed. The shortcomings of this type of system are that the developer is working with a number of agencies. The agencies have no method to resolve differences of interest or problems with the project. There is no balancing of these interests. Under a multiple permitting system, each of the agencies with a regulatory interest will act independently, or only after the actions of another agency. The process can become protracted and adds a very significant risk of permitting failure to the developer of a project.

b) One Step Approval

Under a one-step approval, the licensing process is handled primarily by one lead agency. The license applicant must provide all information to this agency and a single permit or license is issued for the project which takes into account all of the concerns and conditions which have been successfully raised by the other agencies.

The one step approval should not preclude the participation by all of the specific agency interests outside of the lead agency. What it should do, is move all of the outside agency interests inside of the licensing process. The lead agency must consult with the other agencies expertise regarding water rights, comprehensive planning, environmental impacts, and safety and stability of the project. The lead agency will take these concerns and conditions and make a decision as whether to license a project and what conditions shall be imposed on the licensee.

c) Multi Stage Licensing

A system requiring multi stages is a linear process that requires a project developer to proceed through several steps to gain final approval for a license. The stages are usually at different agencies and require the developer to gain approval from one agency to access another. The existing Armenian system is also a multi stage system, as there is a linear process of gaining approval of the project concept, then approvals from several agencies, then approval from the Ministry of Energy and Fuels, then finally the license from the Ministry of Economy. While these stages allow for participation from the key agencies, it is very cumbersome, time consuming and inefficient, as actions by regulatory agencies cannot be taken all at one time.

d) Comprehensive License/Power Contract

Under this system, the granting of a license also provides the rights to a power contract. In the reverse, the power contract would also provide the developer with the rights to construct the project and utilize the water for power generating purposes.

If there is a single potential market for the power, this system also provides the utility with the capability of limiting and managing the power which is going to be available to the system. Under a free market system or a system with multiple power purchasers, the market will

determine what projects will be constructed, as no power contracts will be available for less competitive projects

e) Separate License/Power Contract

Most countries with private hydroelectric power, have a separate systems of Governmental regulation and utility power purchasing. However, even in many of these countries, the utility if nationally owned, has some influence on which projects and how much capacity is going to be licensed and available for power purchasing.

Additionally, in some systems, having a power contract is necessary to gain permits, while in others, having the permits is necessary before negotiating a power contract.

## 5 Case Histories of Private Hydropower Regulatory Systems

For the purposes of illustration, the systems in three different countries are presented. Each system has a different process and set of approval elements. There are advantages and disadvantages in each system. Each of the cases has some similarity to Armenia, in availability of resources and history of utility ownership and operations.

There are elements of each system which may be attractive for Armenia in reforming the licensing process.

a) United States

In the United States, non-national Government (non-federal) hydroelectric projects are almost all licensed by a single body, the Federal Energy Regulatory Commission (FERC). This Commission was established as the Federal Power Commission in the 1920's to be the licensing group for non-federal hydroelectric projects. Although there have been changes, the FERC remains today as the primary licensing agency for such projects.

The licensing process at the FERC is complex. Although originally set up with the authority to be a single permitting agency for licensed hydro projects, evolution of environmental laws has set up conflicting authority and multiple permitting in the past 20 years in the USA. Difficulty in permitting projects is one significant reason for the decline in hydroelectric project development in the US for the past decade.

In simplified terms, the US system provides for a dual stage of licensing. A brief flow chart of the US system is shown on Figure 2. As the requirements for developing a license application are quite rigorous, a developer may apply at its option for a

Preliminary Permit The application for a preliminary permit is simple and contains a brief description of the developer and the project. The permit is reviewed by the FERC and either issued or denied. If issued, the developer has the exclusive rights for filing a full license application before the FERC for a set time period, either two or three years.

The Preliminary Permit concept allows the developer to perform the design and environmental studies necessary to submit a license application, without concern of losing the site to possible competitors. If, at the end of the permit time schedule, the developer has failed to submit a license application, the permit expires and the developer's rights to the site are extinguished.

During development of the license application, the developer must coordinate the project plans with the interested environmental and land use agencies. The agencies review and comment on the plans. These comments must be addressed in the license, and submitted as part of the license application.

During the review of the license by the FERC, the application is again reviewed by the agencies. Comments and concerns are submitted in writing and the FERC drafts a license with terms and conditions, which require the developer to construct and operate the project in accordance with plans and agreed parameters.

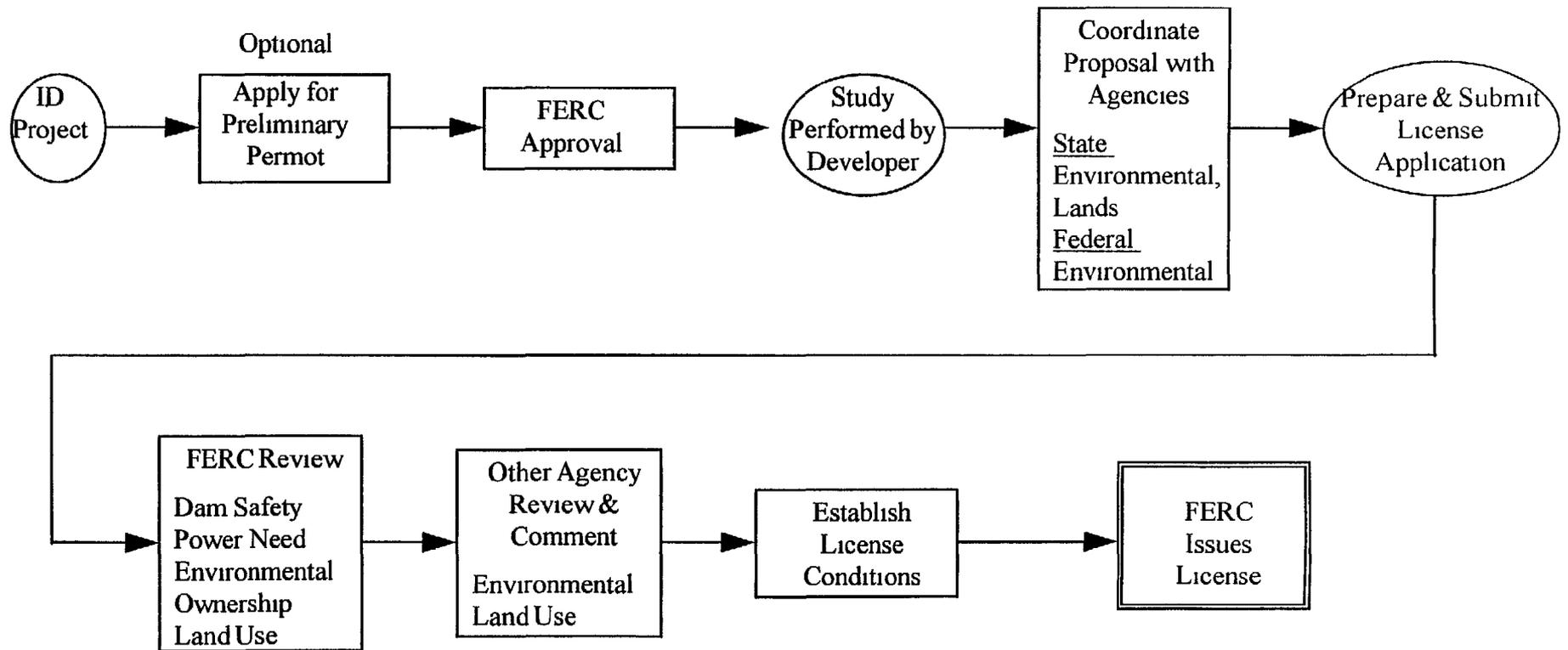
The license issued by the FERC is usually valid for a period of 30 to 50 years, depending on circumstances.

The US system is similar to a "one step" approval. It has several advantages of a clear process, a comprehensive federal permit and clear license conditions. There is also a single agency who is responsible for balancing the power development interests with environmental and water use interests.

The FERC system however has disadvantages. In recent years, conflicts have arisen which have compromised the one stop nature of the permitting. Some states and certain other federal agencies have received overlapping authority, sometimes requiring other permits to be obtained by the developer, which may be inconsistent with the FERC license. The process has also become extremely lengthy and adversarial and very expensive for a developer to enter, particularly with a small project.

The FERC process does not guarantee a market for the project power. While the need for the project and the economics of the project are reviewed by the FERC prior to license issuance, the license does not guarantee any market for power. It is the responsibility of the developer to find a market for the power and arrange contracts.

**FIGURE 2. UNITED STATES HYDRO LICENSING PROCESS  
Federal Energy Regulatory Commission (FERC)**



Developer must pursue non-governmental land rights, power sales, and construction arrangements separately

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b) Costa Rica

Costa Rica is a country with limited electrical generating resources outside of hydroelectric power. The electrical system developed as a nationally owned, monopoly utility, ICE. The utility constructed, owned and operated virtually all electrical generating, transmission and distribution lines in the country.

In the late 1980's Costa Rica decided to allow private power into the system. Laws were passed and a procedure with regulations was developed to allow private developers to construct and operate up to fifteen percent of the total national capacity, in the form of small to medium size hydroelectric projects.

The Costa Rican system is a multi-stage system which requires the developer to sequentially acquire rights and permits prior to gaining a power contract from ICE. The process can be controlled by ICE in order to limit the amount of power to be purchased. This also means that if the permits are obtained, the developer will get a power contract from ICE, under standard terms and prices. Individual projects were limited to 20 MW.

The first step in the process is to gain a Certificate of Eligibility. This is issued by the utility, ICE. The Eligibility provides the developer with the rights to the site during the time it takes to gain land rights, perform environmental and feasibility studies and successfully acquire the permits. The application for eligibility is obtained after performing pre-feasibility studies and showing the project location, size and generation output.

The next step in the process is to acquire the Environmental Permit, issued by the Ministry of Mines and the Environment (MIRENEM). This is a two stage procedure. The first stage is the submittal of technical data on the project and a first stage environmental report. MIRENEM returns comments on the project and the environmental report, which must be addressed in the second stage. After successful completion of the second stage, the MIRENEM Permit and the feasibility study are submitted to ICE, for approval. If the report is approved, ICE provides a letter.

The MIRENEM Permit and ICE feasibility study approval are then submitted to the Water Concession authority, SNE. After review, SNE provides a Concession for the use of the water for a limited period of time, of fifteen years.

Following the SNE issuance, ICE will then negotiate a power contract with the developer, under terms and conditions which have been generally accepted as part of the process.

This system also has some advantages. The process is a clear one, although numerous changes have taken place during its development. Second, the process has time constraints for the agencies and the developer to take action. A third advantage is that the developer knows that after the process is complete, that the project will have a power contract at certain tariffs and conditions. This means that commercial and operating conditions are known, eliminating another layer of risk from the developer and encouraging investment in the process.

The system also has disadvantages. The process does not always work as stated. A large disadvantage is that there are multiple steps at different agencies. While a linear process, any delay at any point will hold up the whole project. Third, the process has become very lengthy. Finally, there are a limited amount of projects allowed for development. Some developers who do not have the resources to carry a project through the process can tie up space and allowable capacity for a project that will not be built.

The Costa Rica system has been a success, in that a number of projects have achieved financial closing, and are either in operation or construction.

c) **Pakistan**

Pakistan is a country with considerable hydroelectric resources which were historically developed by the Water and Power Development Agency (WAPDA), a national utility.

Pakistan decided several years ago, to pursue private power for most of its future resources. In order to enhance development, a Private Power and Infrastructure Board was established. This Board has coordinated and written policies for the development of hydroelectric resources in the private sector. The Board was originally established to be a one stop approval agency, who would coordinate with WAPDA and local authorities before granting project rights. In the development of the hydro policy, local authorities have become more involved in the process.

In order to secure project rights, a developer must apply to a provincial power board for a project. If the application is accepted, the Provincial Board issues a Letter of Interest. This gives the developer the rights to perform studies and prepare plans for later approval. A fixed period of time is set by the LOI. Upon submittal and approval of the plans, a Letter of Support is issued by the Provincial Board. The developer then goes to the Private Power and Infrastructure Board for an Implementation Agreement and Power Purchase Contract.

The land rights must be secured at the local level. An environmental approval must also be secured, however the procedure for this approval is not well defined.

The process established by Pakistan is somewhat new and is still evolving. It has some advantages in that standard agreements have been established and the value of power

for the project is known. However, certain problems in the policy have limited the international community response in developing needed projects to date. These include major uncertainty between the Provincial Governments and the Private Power and Infrastructure Board and the firm knowledge that a power contract will be obtained if all studies and design plans are completed.

## **6 Recommended Regulatory Changes for Armenia**

Based on the identified weaknesses and successful elements of other private hydropower development policies, a program to change the existing Armenian process is recommended. The program is intended to provide the Armenian Government with an appropriate level of regulation, without placing an undue burden on developers. It also will provide developers with a known, clear process to follow and establish rights and responsibilities of license holders.

The regulatory aspects of the proposed plan would include regulation at the national level of

- Use of National Lands
- Water Use Rights
- Environmental Protection
- Public Safety
- Comprehensive Development

The proposed process would have a single issuing agency for a hydropower license at the National level. This agency ideally would be the National Energy Commission (NEC) currently proposed in draft legislation. The NEC would have a small staff who administer the hydroelectric licensing program, with the actual Board members making final licensing decisions and issuing or denying the license. The NEC, acting through its staff, would have the responsibility of seeking approval from key Ministries and resolving inter-ministerial issues.

The structure will be designed to streamline bureaucratic procedures and establish a predictable, transparent and structured licensing process. The elements of the proposed plan are detailed in the following sub sections:

### **a) Process**

Under the proposed licensing scheme, the process would be two stage, with a one stop, comprehensive license application at the National level. The two stage process would be similar to the US system. The process is summarized in Figure 3. The first stage would be a preliminary license, with the second a license for construction and operation.

The first stage of Preliminary License would be optional to the developer. It would involve a simple and summary application to the NEC which identifies the project, the land owners and the developer. The NEC would review the project proposal, notify the land owners and check with the plans for the project or the impact on the Comprehensive Plan with Armguidroproject.

If the project is consistent with the uses and the developer meets any criteria established by the NEC the developer would be issued a one year preliminary license. This license would simply establish rights to the site for the applicant to develop the data necessary to file an application for licensing. For small and simple projects, the developer may not file for the preliminary license as the investment of money and time for license preparation would be small. Small projects would be those approximately 5 MW or less and/or those projects where the primary facilities are constructed.

Whether acting under a preliminary license or not, the developer would need to develop a license application for their project in accordance with standards set by the NEC. The applicant/developer would need to provide a design for the project and also address a number of issues which are currently addressed by the multiple agencies who must approve the project.

Prior to submitting the application, the applicant/developer would provide copies of the application to appropriate ministries or agencies for comment for a period of 45 days. The appropriate commenting agency would be required to write a return letter stating their comments and/or objections to the project. The applicant would need to address these comments in the final license application.

The agencies to receive the application would be the following, with specific areas of expertise:

Ministry of Ecology - comment on environmental impacts of the project and recommend measures for mitigation or changes to the project to minimize impacts, including land, water, human and archeological.

Ministry of Agriculture - Water Agency review to insure consistency with existing water rights and other uses.

Minister of Energy and Fuels - Consult with comprehensive plan for consistency of project with national resource uses.

Regional Council - Comment on availability of land and land use where Nationally owned lands involved.

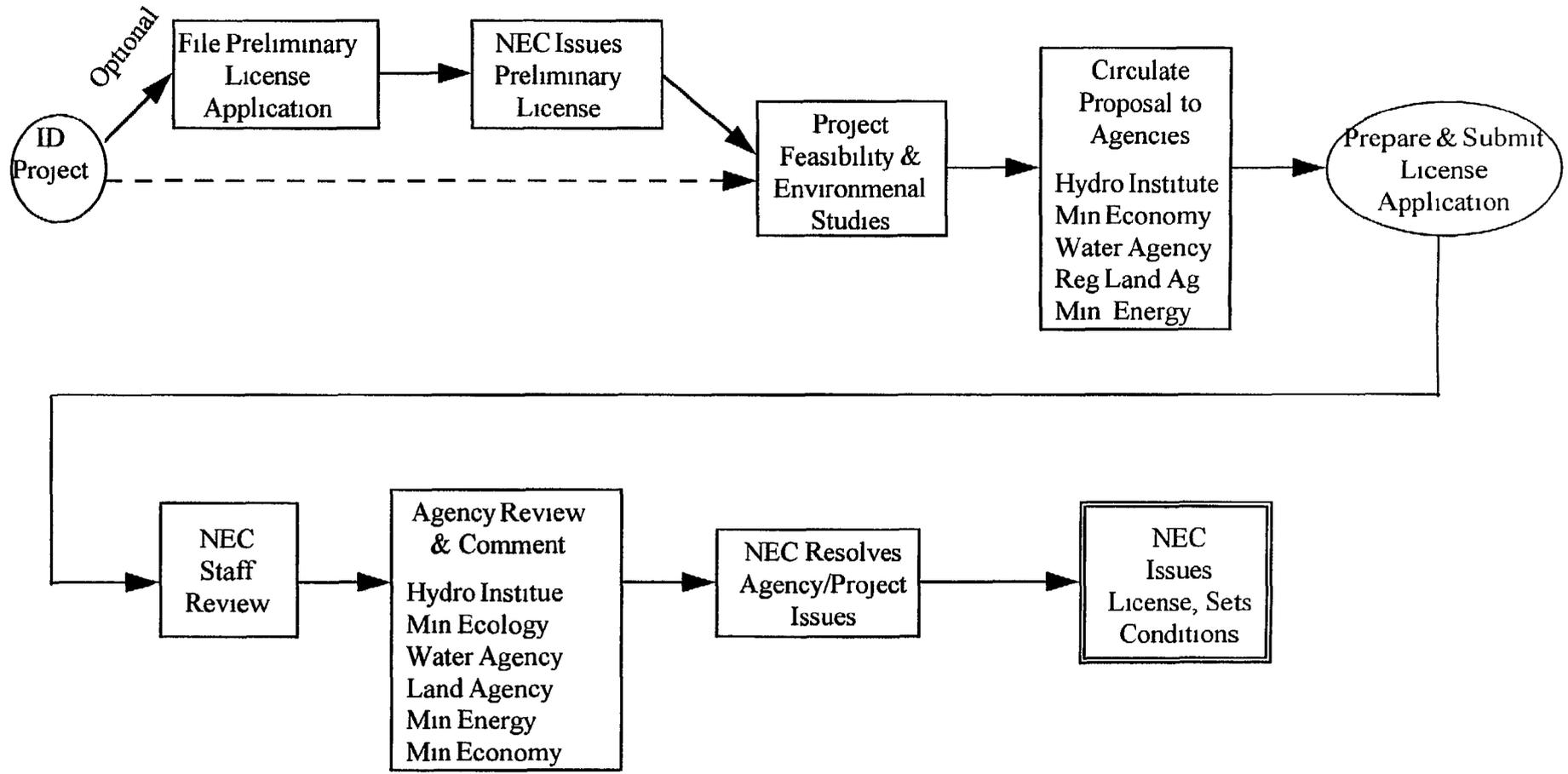
NEC Staff - Safety and stability of impoundment features.

Minister of Economy - Impacts on the economy, need for the project and economic development.

It is anticipated that the process for license application development would take approximately 2 to 6 months. If large projects involving large reservoirs are involved in the project, a longer time period of planning and license preparation may be necessary.

Upon submittal of the license application, the NEC staff would review the application and coordinate it with the appropriate agencies. These agencies would then submit their final comments, approval or recommendation for license denial, and proposed license conditions. If it is recommended that the project be denied, reasons for denial and changes to the plan which would make the project acceptable would be required. Reviews and recommendations would be required from the agencies within 60 days.

**FIGURE 3: PROPOSED LICENSING PROCESS FOR ARMENIA  
National Energy Commission (NEC)**



Developer must finance, secure non-national land rights, market power, and design & construct separately

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After receipt of the comments, the NEC staff will present the comments to the applicant and allow a response to these comments. At this point, the developer may decide to change the project somewhat to respond to agency concerns.

The NEC would be required to address the agency concerns in the license conditions. It would have the authority to balance the competing resource uses, however could not override existing water rights at other projects, conflicting land use issues or a finding of unacceptable environmental impacts. If a project were found to be unacceptable, the NEC staff could negotiate between developer and the agencies to find an acceptable alternative plan to develop the site.

Upon the completion of the process, the NEC would either issue or deny the license. It is estimated that the process for licensing of a typical project should take about 4 to 8 months, larger and complex projects would take longer. This time would be consumed by NEC staff review, circulation to agencies, review and comment, establishing license terms and commission action on the license.

#### b) License Contents

The license to be issued would have clear terms and conditions for the licensee. The terms and conditions would address the following items, at a minimum:

1. Term - The term of the license should be for a minimum of 20 years or the expected life of the facility. Seven years is not sufficient to perform final design, arrange financing, complete construction and operate the project for a sufficient time to recapture the project investment.

2. Rights of the licensee - The rights provided by the license would include, the use of national lands, the rights to divert water, the right to construct and operate the project in accordance with the approved plans for a fixed period of time. It also would state the remaining rights of ownership of the licensee after expiration of the license.

3. Responsibilities of the licensee - The licensee would be responsible for meeting the conditions of the license during construction and operation, including environmental restrictions, continued operations and maintenance of the project, maintenance of project features (particularly dams and penstocks) to maintain public safety, and milestone schedules. Should the NEC decide that a license should be denied, the basis for denial will be issued to the applicant. The agencies objecting to the project will be identified and any changes which could be made to the project to make it acceptable will be identified.

#### c) Development Milestones

The license would be conditioned on the meeting of certain milestones in the development of the project. These would be required to be met so that the site is not idle for many years due to the licensing by a party not capable of completing development.

License Milestones would include

1. Initiation of construction within 2 years of issuance of the license. Construction start would be defined as substantial new civil work on the proposed site or fabrication of equipment.
2. Completion of construction in accordance with a schedule in the license. The actual schedule would be project specific.
3. Continued operations during the life of the license. If normal operations are stopped or the project is abandoned, the license can be revoked by the NEC.

These milestones would be monitored by the NEC staff, who would recommend revocation of the license if the schedules are not met as specified.

#### d) Regulations

The NEC would establish a set of regulations for the licensing of hydroelectric projects. The regulations would establish this function of the commission and would address the details of the process, the contents of the license application and procedures for implementation.

The procedures would include

1. Filing procedures including setting priorities for competing applications, fees for filing, the process for filing.
2. Definition of who may file an application, including citizens, corporations, utilities or other legal entities, as appropriate.
3. A method for addressing deficient information in the license application.
4. Clear procedures for the processing, coordination and action on license applications, including time schedules for the NEC and agencies.
5. Clear procedures for license transfers, termination or revocation.
6. Dam safety review procedures for water impoundment or conveyance structures that could effect public safety.

## 7 A fee schedule for licensing and annual charges

### e) NEC Structure and Staff and Financing the Program

The NEC would establish a hydroelectric division who would be responsible for the administration of the program. The staff would be responsible for administration of the licensing program, compliance of operating projects with license conditions, and ongoing safety and stability of projects features.

It would be expected that the NEC staff assigned to hydro licensing would be small, until many projects had been licensed and moved forward to construction. The staff would be paid for by fees paid by the licensees. A fee would be paid at licensing upon acceptance of the license and an annual charge would be made against operating licensees. The total of these fees would be designed to cover the costs of administering the program. In the first years, until many projects and some large projects were operating, the staff support would need to be subsidized by the Government.

The staff would need a few experienced and trained individuals who could perform a number of tasks, including coordinating and negotiating with the developers and agencies, inspecting the projects to determine construction status and compliance with plans, performing safety inspections, or arranging for safety inspections to be made.

Initially, only one or two individuals would be assigned to the hydropower staff, until sufficient activity developed to warrant additional staff. Key expertise in environmental, planning and engineering would be provided by other Ministries as appropriate.

### 7 Recommended License Application Contents

In order for the NEC and other agencies and Ministries to evaluate and act on the project license application, the following information is recommended to be included:

- a Applicant/Developer Information
  - Rights to the Site - Preliminary License
  - Legal Status of the Applicant
  - Financial information on the Applicant
  - Qualifications of the Applicant and development team
  
- b Technical Information
  - Project description
  - Project feasibility level drawings, including all facilities
  - Project lands with owners identified

- Established rights to lands
- Project capacity and output
- Description of the project area
  - Population, access and existing facilities
  - Geologic considerations
  - Hydrology details
- Construction schedule
- Plans for future development
  
- c Environmental Information
  - Local land and water description
  - Quality of the landscape
  - Local human environment
  - Local archeological resources
  - Direct and indirect impacts of the project
    - Positive impacts
    - Negative impacts
  - Plans to avoid or mitigate negative impacts
  - Alternate site development plans
  
- d Feasibility and Financing Information
  - Costs of the Project - Construction and Operations
  - Expected revenues from operations
  - Method of raising funds - sources
  - Preliminary financing information
  - Likely buyer and value of power
  - Financial capabilities of owner

## **8 Remaining Issues**

The proposed plan provides Armenia with a framework to address the weaknesses in its existing licensing program. It addresses the problems with the existing licenses, lack of transparency and clarity in the existing process and will provide the Government and private developer with a clear understanding of the rights and responsibilities of the parties.

This proposed plan does not provide the license holder the rights to a power contract or the right to demand a sale of power to any party. It leaves the problem of marketability of the power to the developer to solve. As Armenergo is being changed from a national electrical monopoly, it may be forced to compete with other supply entities and therefore may not be forced with purchasing power which may not fit its plans. However, if Armenia wants to encourage small power producers, it may want to add some guaranteed contract and price packages/concessions in the process. In most developing economies, such a contract expectation is necessary to attract international developers into the country.

The plan also does not account for the acquisition of land rights from private land holders. If a large project is proposed which would require the purchase of land from many individuals, a single individual could hold up the project by refusing to sell. The priority of these land rights is not addressed in this plan. The plan leaves the issue of acquisition of private land rights to the developer with the national land rights issued with the license.

Finally, the proposed plan will take some work to develop the clarification of authority of the NEC and the existing agencies including the Ministries of Agriculture, Ecology and Economics.