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PD-ABP-594

TECHNICAL AND MANAGEMENT SUPPORT SERVICES

IN SUPPORT OF ENERGY AND ENVIRONMENT PROJECTS

IN THE NEW INDEPENDENT STATES

FINAL REPORT

JULY 31, 1996

CONTRACT No. CCN-0002-C-3128-00

IDEA Inc.
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Washington D.C. 20005

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I. SALIENT FEATURES AND GENERAL ACCOMPLISHMENTS

1. STAFFING AND OFFICES

The IDEA contract for technical management support was signed on Aug 3, 1993 and is scheduled to end on July 31, 1996.

Washington Office

The IDEA Washington office (located in Arlington, VA on the State Dept. shuttle bus route) was opened on Aug 31, 1993. The following individuals worked in the Washington office during the tenure of the contract:

Andres Doernberg, responsible principally for West NIS and the Chernobyl Memorandum of Agreement programs	Aug 31, 1993- July 31, 1996
Masood Malik (also Chief of Party for the period July 1, 1995-July 31, 1996), responsible principally for Russia, the Russia Commodity Import Program and the CAR oil and gas initiative	Aug 31, 1993- July 31, 1996
Malinda Goodrich, responsible principally for Caucasus, and after June 1995 also for CAR	Aug 31, 1993- March 31, 1996
Charles Bliss (Chief of Party for period Aug 31, 1993- June 30, 1995), responsible principally for CAR	Aug 31, 1993- June 30, 1995
MargaretAnn Niewarowski-Molina, office management	Jan 30, 1995- July, 31, 1996
Jarvey Nelson, office management	Dec. 1, 1995 - July 31, 1996
Gayl Hahn, office management	Dec 1993- July 1994
M. Charles Moseley, responsible for Chernobyl Social Impact and special assignments	Aug 15, 1995- Nov 3, 1995

Field Offices

IDEA expatriate staff mobilized on a temporary basis in September 1993. Upon approval by their respective Missions, they were established as resident expatriates for the period listed below heading four major field offices and two satellite field offices staffed by local staff.

Location	Period of Operation	Resident Expatriate
Moscow, Russia	Oct 1993- July 1995	M. Charles Moseley
Kiev, Ukraine	Jan 1994- Nov 1995	Darian Diachok
Yerevan, Armenia	Nov 1993- July 1996	Harout Topsacalian
Almaty, Kazakhstan	Jan 1994- Aug 1995	Rolf Manfred
Satellite Offices		
Tblisi, Georgia	Jan 1995-July 1996	managed from Yerevan
Bishkek, Kyrgystan	June 1994-Aug 1996	managed from Almaty

Local Staff	Position	Location
Vladimir Kokashvili	Development Spec.	Moscow
Aita Khoninov	Admin. Assistant	Moscow
Oxana Turina	Admin. Assistant	Moscow
Armen Yeghiazarian	Energy Specialist	Yerevan
Hasmik Malumian	Admin. Assistant	Yerevan
Dinara Rashitova	Office Manager	Almaty
Gennady Doroshin	Assistant Engineer	Almaty
Andrei Kononov	Engineer	Kiev
Vitaly Plotnikov	Admin. Assistant	Kiev
Anatoly Ferdochenko	Office Manager	Kiev

Consultants

IDEA was able to assemble, both in the Washington office and the field offices, a team of professionals with long and rich background in the energy sector as well as in the delivery of USAID assistance overseas under a variety of circumstances.

2. SPECIAL ROLES OF IDEA TEAM

Resident Expatriate Staff in Field Offices

The team of IDEA expatriate residents in the New Independent States (NIS) countries was an integral part of the success of USAID in establishing sizeable energy sector assistance programs in the NIS over a relatively short period of time. Charles Moseley, IDEA resident in Moscow, had been living in Moscow for over one year in his capacity as a USAID official prior to joining IDEA, and had extensive contacts with the Russian counterparts, officials of multilateral institutions, and the newly established private businesses of the energy sector. Harout Topsacalian

in Yerevan and Darian Diachok in Kiev were able to quickly develop contacts with their respective energy sector counterparts, because of their language skills derived from a shared cultural heritage with the countries they worked in, and a commitment to hard work. Rolf Manfred in Almaty had no earlier ties to the Central Asian Republics (CAR), but similarly established himself quickly with the Kazakh and Kyrgyz officials, bringing to bear a long career devoted to managing programs for development of energy technologies.

Locally-hired IDEA Professional Staff

IDEA is especially proud of the locally hired professionals that worked in the four field offices. IDEA has been acknowledged by USAID and USAID contractors in the field for hiring and promoting a cadre of excellent engineers and other professionals, who over the two or three years with the IDEA offices were given increasing responsibilities and challenges. These individuals were identified by the IDEA Resident staff generally through the extensive network of contacts that were quickly established after mobilization. The success of the locally-hired staff can be gauged by the eagerness with which US contractors and other international organizations like the World Bank hired these individuals upon the closure of the IDEA offices. This was the case in all four IDEA offices: Moscow, Almaty, Kiev, and lastly Yerevan (the only IDEA office to remain open until July 1996).

Corporate Office

The IDEA corporate office in Washington provided all the needed support to the IDEA contract team in the field and the Washington Support Office in Arlington, VA in a very timely and appropriate manner. There was not even a single instance in the three year contract life in any of the IDEA office locations, which were spread over vast geographic distances, that a significant task entrusted by USAID to the IDEA team could not be carried out or unduly delayed due to a lack of the needed support in resources or other aspects from the corporate support. Robert Stern (Chief Financial and Administrative Officer) and Romir Chatterjee (President) were principally responsible for this achievement, as they always assigned a very high priority to this contract, especially in supporting the field offices. The IDEA Corporate Office was also available for substantive activities during the entire course of the contract, if dictated by circumstances. Dr Chatterjee (President), for example, participated in the planning of the early phase of the Joint Electric Power Alternatives Study for Russia (part of a high profile initiative of the Gore Chernomyrdin Commission), and travelled to Moscow; Dr. Peter Meier (IDEA Vice-President) designed a power sector planning study for one of the CAR countries.

Short Term Consultants

A special feature of the contract has been the ability to provide short term consultants to undertake urgent, emerging tasks that would have been cumbersome or inappropriate to be assigned to the other NIS contractors-- Hagler Bailly (for energy policy/institutional related work), Burns and Roe (energy technology based services), and to a more limited extent CH2M Hill (environment). This was particularly true if the consultant assistance was needed to help design a new activity to be carried out by one of the three prime contractors, or any one of the other recipients of USAID funds, or to evaluate/monitor the work of the these entities. The IDEA contract also was used

as a vehicle for providing USAID with short term assistance for special assignments, particularly where quick responses were needed. Examples are the Chernobyl Social Impact Study, a capability assessment of a potential gas supplier to Armenia, and the Kyrgyz coal sector utilization study. A list of the short term consultants engaged by IDEA during the contract is attached.

3. UNIQUE NATURE OF SUPPORT AND CHALLENGES FACED

Demanding and Unique Nature of Assistance to NIS

The USAID assistance program in the NIS was unique, and remains so today, in many respects. In particular, the following factors characterized the start up of the program:

- a high level of US government interest and the need to deliver assistance and derive tangible results quickly;
- significant foreign policy objectives associated with some of the assistance activities;
- high interest and participation of other US government agencies in the design and delivery of assistance;
- need for intensive inter-agency coordination because of the interest and involvement of a large number of US Government agencies;
- efforts of a similar nature and visibility being initiated by multilateral and bilateral agencies with concomitant coordination requirements; and
- lack of any long term presence or history of USAID activities in the recipient countries.

The above factors placed extraordinary demands on USAID Washington and field missions designing and implementing the assistance program in the NIS. The IDEA team helped the USAID offices cope well with these demands and was able to perform satisfactorily under such challenging circumstances. In all cases IDEA had to start operations from scratch and establish functioning offices quickly to be of assistance to USAID.

Flexibility and responsiveness of IDEA Team Contract

The IDEA contract provided a very flexible vehicle to USAID energy program in the NIS countries which allowed it to be very responsive to the needs of the ENI Bureau, as well as the USAID Missions in the field. In Washington, the IDEA team was successful in supporting two management teams of USAID officials, as the agency NIS Task Force was merged with the Bureau for Central and Eastern Europe one year into the support contract. More importantly, the IDEA team was able to provide crucial continuity during the transition period after the merger. Further, in the field as well as in Washington, the IDEA team transitioned through

many changes in key USAID personnel due to normal transfers or retirements. Most importantly, the nature of the support in the field offices varied markedly between Missions, and within Missions during the three years of the contract depending on the level of full time USAID staffing available at any given time. In some of the Missions there was no USAID official dedicated only to the energy sector during the entire period of the IDEA contract, and in others this situation prevailed during some periods. Under such circumstances, the Missions were able to rely very heavily on the IDEA resident expatriate and his staff; without exception the IDEA team was able to successfully provide the needed technical management support to the Missions in implementing their energy portfolios.

Multi-country Support of Field Offices

With the exception of the Moscow office, the IDEA field offices supported USAID missions with regional responsibilities. This required extensive and often difficult travel out of the country of residence by the IDEA expatriate and local staff. Initially, these countries (Georgia from the Yerevan office; Kyrgyz Republic, Tajikistan, and to a lesser extent Uzbekistan and Turkmenistan out of the Almaty office; and Moldova and Belarus out of the Kiev office) had no USAID presence of any kind, and responsibility for US government liaison fell on the US Embassy. This situation also evolved during the course of the contract, with some USAID presence established in Tiblisi, Bishkek, Tashkent and Chisenau. IDEA responded to the changing needs by opening local offices during the course of the contract in Tiblisi and Bishkek, because of the large energy programs being implemented in those countries.

II. RESULTS AND PROGRAM ACCOMPLISHMENTS

1. RUSSIA ACCOMPLISHMENTS

This was the most significant country in terms of assistance in the earlier part of the contract. The only full time direct hire USAID energy officer in Moscow, who had been largely responsible for the design and start up of USAID energy program in Russia, left USAID unexpectedly just at the start of the IDEA contract implementation. His full time successor was not able to arrive at post for almost a year after the retirement of the incumbent. Nor could the Mission dedicate anybody else from its limited ranks to work on its energy portfolio on a full time basis during this period. Under these circumstances, the IDEA team played a key role in providing crucially needed assistance to the Mission in sustaining its nascent energy sector assistance program and to support the satisfactory implementation of a number of activities that had already been started. This was also the period that the staffing at the Energy, Environment and Technology (EET) Office of the USAID NIS Task force was also rather thin. Therefore, the IDEA team in Washington played an important support role to the Office of Energy, Environment and Urban Development (EEUD) in the design, monitoring and implementation of the energy sector assistance under the Energy Efficiency and Market Reform (EEMR) and Commodity Imports Program (CIP) Projects.

The key areas that IDEA team worked on during the period of its contract in Russia were:

- The design and oversight of a $125 million Energy and Environmental CIP program.
- Design of an energy efficiency strategy for USAID technical assistance to Russia, and design and oversight of follow up activities to implement the strategy.
- Solicitation of nomination and selection of candidates for overseas training under the NET program
- Design of a training program for the energy sector in Russia to benefit from the large resources available under the USAID NET Project.
- The design and oversight of a Joint Energy Alternatives Study, part of the Gore Chernomyrdin Commission initiative, aimed at a joint Russian-US evaluation of options for the early shut down of the first generation nuclear power plants and investments in Russia's power sector.
- Design and oversight of an effort to develop a blueprint for the restructuring of Russia's gigantic power sector.
- Design, jointly with the World Bank, of activities aimed at i) developing a transparent and fair regulatory framework for access to Russia's oil pipelines and a strategic study of investments for the oil export system; and ii) preparation of a loan for the restructuring of Russia's ailing coal industry with special emphasis on minimizing the negative social consequences under the World Bank-USAID Cooperative Agreement.

Annex 2 contains a description of the activities of the activities of the IDEA field office in Moscow.

2. CAR ACCOMPLISHMENTS

The IDEA resident expatriate in Almaty was of critical importance to the USAID energy program for the Central Asian Republics. Until the arrival in early 1994 of a USAID official responsible for programs in environment and energy, the IDEA resident expatriate was relied upon exclusively by the Mission and the NIS Task Force; furthermore, he continued to carry out a critical role throughout his stay because USAID/Almaty relied on him heavily for the design and management of the energy programs. The post was a challenge in terms of the management of large energy programs in two countries, Kazakstan and Kyrgyz Republic, as well as the need to travel to two additional countries on an "as needed" basis, Tajikistan and Uzbekistan, for special assignments involving regional collaboration among CAR local government officials. Neither Tajikistan or Uzbekistan had energy program activities directed exclusively at them. This travel was generally done under difficult conditions, especially to Tajikistan.

The multi-country responsibility of the IDEA Almaty office extended also to USAID/Almaty, which was stretched thin due to lack of resources and its geographical remoteness. The local governments and the managers of the state energy companies, generally hold-overs from the Soviet era and frequently at odds with each other, were (and continue to be) notably difficult to

deal with, a factor which the resident expatriate was able to overcome through the establishment of personal relationships with counterpart officials. On more than one occasion these counterparts requested that USAID provide specific advisors known to them from earlier USAID programs. The IDEA office played an important role in ensuring that, where relevant, the new prime contractors carefully consider these requests for specific individuals.

The principal accomplishments of the IDEA resident expatriate and his local staff can be summarized as follows:

- Worked with mission staff in design of the FY94 and FY95 program of energy activities in Kazakhstan and Kyrgyz Republic as a result of consultations with government officials, USAID and coordination with other donors
- Providing support to implementors, especially review of work plans for Mission approval and ensuring that the work to be done by individual experts met strict criteria imposed by USAID/Almaty
- Providing monitoring of the work of all implementors (contractors, grantees and cooperative agreements) to ensure it met agreed upon objectives and schedule according to Work Plans
- Facilitating USAID-funded energy activities carried out by implementors in cases where lack of counterpart participation, change in government policy or other events caused problems
- Assisting USAID in program coordination among donors, in instances where different donors pursued similar projects, in particular, carrying out discussions with EC-Tacis and EBRD, albeit limited by the lack of decision-making capability in the field of officials of these organizations
- Assistance in the implementation of extensive in-country training programs as well as assisting training programs funded by other offices of USAID (NET project), including selection of training and selection of trainees most likely to benefit form the programs
- Organizing and taking part in a Regional Conference of Energy Savings held in Kyrgyz Republic, and supporting a Department of Energy conference for Kazakh officials in oil and gas and other fossil energy (the latter did not take place during the period the IDEA office was in operation)
- Identification of issues critical to the countries' transition to a market economy for their energy services, including the creation of regulatory bodies and laws under which the market economy would operate, and designing relevant technical assistance programs that take into account the eventual privatization of assets in the energy sector
- Identification of issues and design of programs to resolve issues related to the regional interdependence of the energy sectors among CAR countries, which desire to balance a need to establish their national identities with the realities of the geographical distribution of energy resources, the existing transportation infrastructure and the centers of energy demand
- The IDEA teams in Almaty and in Washington prepared a study of the coal sector of the Kyrgyz Republic

In 1996, after the IDEA office was closed, a new White House initiative on Central Asia led to the participation of IDEA (Washington) in a lengthy field trip to design a new program to assist the oil and gas-rich Republics of Central Asia (Kazakhstan, Turkmenistan and Uzbekistan) in attracting and retaining foreign investment in the exploitation for their natural resources.

Annex 3 contains a detailed description of the activities of the activities of the IDEA field office in the Central Asian Republics.

3. CAUCASUS ACCOMPLISHMENTS.

The IDEA office was opened in November 1993 before the Mission had staff for the energy sector. USAID/C requested that IDEA locate its office within the Mission and had the IDEA resident report directly to the Mission Director until a PDO was assigned to the Mission. As a result, IDEA's role was especially critical during the first year of the program assuming key responsibilities including: interacting with the host government ministries, assisting and working with implementing contractors, designing and developing scopes of work with and for ENI/EI, recommending and coordinating training courses, coordination with other multilateral organizations, assisting in the monitoring of contractors, and providing technical analyses, among other activities. By late 1994, the USAID program in Georgia grew large and an IDEA Tbilisi office was approved, opened in February 1995 also initially located within the Tbilisi USAID office. By mid 1995, IDEA established external offices outside USAID in Yerevan and Tbilisi and reported to the PDO and the Mission Director.

Highlights of the IDEA/Caucasus offices include:

- beginning in 1993, IDEA/C continuously met with Ministry of Energy officials and communicated with USAID/W to design a program which tried to meet Armenia and Georgia's immediate energy needs as well as to set a foundation for tasks that were part of USAID's energy sector reform strategy in the NIS. The IDEA office facilities also provided logistics/communication support and working space for visiting contractor team and to the World Bank, EBRD, and companies working closely with USAID.

- IDEA/C worked hard to promote the US Government's assistance to Armenia and Georgia. It developed contacts with the local media and the US Information Agency to frequently set up trips and news-worthy events to highlight USAID's programs in the energy sector. Among these: Ambassador Gilmore's (Armenia) visit to the Djadjur coal Mine; Ambassador Tomsen (Armenia) and Fred Winch's signing ceremony for the USGS MOU; Ambassador Courtney's (Georgia) visit to a private Georgian power company; signing ceremony for USEA utility partnership between TVA, Georgia Power & Light and Georgia's Sakenergo; coverage of USAID's energy program in *Platt's Oilgram News*; USAID Energy Program Profiles on the Internet and Aragil News.

- In 1994, IDEA/C was one of the early proponents for developing a funding mechanism for private independent power producers (IPPs). IDEA worked with USAID-funded legal advisors assisting 2-3 small IPPs identified by IDEA to develop power purchase agreements and also developed the scope of work for allowing a limited level of effort for legal assistance to the Ministry of Energy, resulting in valuable legal assistance to the Ministry in their negotiations with 2 major private power projects in Armenia.

- IDEA/C was instrumental in the succesful joint effort linking the Armenian Relief Society (ARS) - a US non-profit benevolent women's organization, with the USAID contractor weatherizing hospitals and schools in Yerevan that helped ARS implement similar activities at the village level in Gumry and other locations outside Yerevan.

- IDEA/C provided management inputs that resulted in increasingly using trainers provided by USAID contractors already in the field in programs organized under USEA and AED funding ensuring that trainers were familiar with local conditions

- IDEA/C worked closely with the World Bank in making availble USAID funds for emergency repairs at the Gyumush Hydro Power Plant, and developed the technical data from the selected Armenian distribution companies that resulted in a World Bank pre-loan assessment of Armenia's transmission and distribution system.

- During the 1994 Energy Conference in Armenia, IDEA/C met with General Electric and Westinghouse representatives and assisted them with meeting Ministry of Energy officials. This has led to serious discussions between the two companies and the US Trade and Development Agency to obtain funding for the exporting of equipment for Armenia's thermal power plants. In early 1996, IDEA/C met with representatives of Gaz de France who were in discussions with the Armenian Ministry of Energy to provide technical assistance in the restructuring of the gas sector that resulted in the coordination of Gaz de France's effort with those of the USAID contractors.

Annex 4 contains a detailed description of the activities of the activities of the IDEA field office in the Caucasus.

4. WEST NIS ACCOMPLISHMENTS

The IDEA Kiev Office, managed for the first two years under a subcontract to Padco, provided support to the USAID Mission responsible for three West NIS countries, Ukraine, Moldova and Belarus. The effort focused largely on Ukraine, with Moldova's energy program suffering from many delays due to many factors (most importantly, that the World Bank's negotiations for loan to the power and the gas sectors never were finalized), and Belarus' program falling victim of political events.

The Ukraine program is now among the largest USAID priorities worldwide, and energy is the highest priority among assistance programs in the country. For the first two years the USAID officer responsible for energy also was responsible for environment programs and the IDEA office provided his principal support until a FSN was hired in January of 1994. A fully functioning IDEA office was established early in 1994 across the street from the USAID Mission, in time for the large FY94 program implementation begun by numerous contractors, grantees and government agencies. Because none of the implementors had a resident expatriate or local employees during 1994 and most of 1995 (with the exception of PIER, and of Hagler Bailly which opened an office in late 1994), the IDEA office served as a local liaison and support office for all implemetors: it arranged meetings with Ukrainian counterparts, participated in short term consultant visits to power plants and industrial facilities, arranged for translators, vehicles, and airport pick-ups. More importantly, the IDEA resident expatriate and local engineer provided the implementors with continuity and many other services, such as monitoring the arrival of equipment purchased as part of the program, reporting the performace of the equipment back to the implementors headquarters in the U.S., made selection of Ukrainian trainees for courses, made arrangements for the Ukrainian officials selected to travel to the U.S. on study tours, and so on. During the early part of 1995, USAID insisted that implementors arrange their own local support (offices were opened by two more implementors later in 1995) and the IDEA office personnel concentrated on its role of supporting the USAID mission.

Highlights of the technical accomplishments of the IDEA/Kiev office include:

Ukraine:

- Establishing counterpart relationships on behalf of USAID with government officials in the Ministry of Power and Electrification, the State Committee on Geology, the State Committee of Oil and Gas, managers of key electric utilities and thermal power plants, especially Kievenergo and Kiev No. 5 CHP, the staff of the Subcommittee on the Energy Industries of Parliament, and the energy efficiency center of Minenergo
- Support for implementation of energy program activities, specifically escorting contractors to power plants and industrial facilities to conduct energy audits, identify equipment to be purchased and to start-up sector restructuring activities
- A major role in coordination of training activities for the personnel of the Ministry of Power, specifically the training related to management of the sector under market condition being carried out by different contractors and grantees
- Participation in Kiev in monthly coordination meetings of contractors and quarterly donor coordination meetings relating to power sector restructuring technical assistance efforts
- Organization of an Experts Discussion on Energy Efficiency Options in Kiev between Ukraine government and non-government representatives, and representatives of the G-7 countries, as part of the activities related to the Chernobyl Closure Initiatives
- Preparation of technical analyses and reports on Ukraine Energy Efficiency Options used by USAID in discussions related to the Chernobyl closure and related issues
- Analyses and detailed reviews of major energy policy documents on Ukraine prepared in 1995 and in 1996 by U.S. government agencies and international organizations, on topics

such as least cost planning for the power sector, alternative sources for fuel imports, and comprehensive surveys of energy issues

- Drafted documentation for an add-on to the Energy Efficiency and Market Reform project to provide Ukraine with balance of payments support for importing natural gas
- Provided the energy expertise to the team preparing the USAID/Ex-ImBank credit insurance program for $100 million petroleum product exports to Ukraine, Moldova and Belarus:
- Designed energy programs for consideration by USAID after numerous country visits to establish counterpart relationships and to coordinate with other donors

5. REGIONAL CONFERENCES AND COUNTRY REVIEWS

IDEA organized two annual conferences, in January 1994 and in January 1995 on the NIS energy program for the USAID field offices and all the assistance providers in the region. A special purpose of the second conference was to facilitate cross fertilization between the NIS and the CEE programs. IDEA organized the facilities, extended invitation, provided logistics support during the conferences, and prepared the conference reports.

Country reviews were held intermittently during the period of the contract. IDEA provided support in arranging for the reviews and preparing relevant reports.

6. MONTHLY, QUARTERLY AND TRIP REPORTS.

The above pages have only captured highlights of the activities under the IDEA contract in a summarized form. A detailed description activities is available in the monthly, quarterly and trip reports prepared during the course of the IDEA contract and available in the files.

ANNEX 1

List of Consultants

Name and Date of Assignmement	Purpose
John Blumgart (Fall 1993)	Environment programs design and SOWs
James Holderbaum (Fall 1993)	Environment programs, design and monitoring
Robert Sponberg (Fall 1993)	Energy & Environment definition of projects
John Gunning (Winter 1994-95)	1995 Annual Energy Conference, management
John Wander (1994 and 1995, as needed)	West NIS and CAR program design; program monitoring and evaluation system design
Michael Gaffen (1994 and 1995)	Program evaluation system design and program indicators
Michael Curtis (1994)	Field office logistics and procurement (Yerevan, Kiev, Almaty)
Douglas Huger (Sept-Oct 1994; 1995)	Coal mining fieldwork in Armenia and Kyrgyz
Clark Harrison (Oct 1994)	Coal utilization study, Kyrgyz Republic
Howard Sherlock (1994)	Program design, CAR
Bernard Kelly (Sept-Dec 1995)	Social Impact Study, Chernobyl Closure
Terence D'Souza	Office organization, Idea/Moscow
Michael Dusaniwski (May/June 1996)	USAID/Kiev short term assisstance
Peter Lalor (June 1996)	Review of Ukraine power sector restructuring

ANNEX 2

FINAL REPORT
MOSCOW

TECHNICAL AND MANAGEMENT SUPPORT

IDEA Inc.

Prepared by:
M. Charles Moseley

November 1995

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IDEA/NIS

MEMORANDUM

November 15, 1995

To: Masood Malik, IDEA/NIS

From: Charles Moseley

Subject: IDEA/Moscow Final Report

This is report submitted as requested. I do not have quick access to my list of contacts and their phone numbers. Such information was shared frequently with the Mission.

I served as the head of IDEA/Moscow from the date the office was opened in my home on 10/1/93 until the office was closed early at my request on July 31, 1995. When the office was opened in October, 1993, all of the US and most of the FSN positions of USAID/Moscow's Office of Energy and Technology (OET) were vacant.

That situation caused IDEA/Moscow/s role to be very pro-active and essentially the same as IDEA/Almaty's role through September of this year and the role of IDEA/Yerevan today. On the arrival of the new Chief of OET in August, 1994, IDEA/M's role was reduced to that of a provider of advice and assistance as requested by USAID.

Attachment 1 provides a general description of USAID's energy program when IDEA/M was opened on October 1, 1993. Attachment 2 summarizes the various components of the program and reports the status of each on July 31, 1995, and IDEA/M's role. Additional information concerning the activities of IDEA/M can be found in monthly reports that IDEA/M submitted to IDEA/NIS from 10/93 through 7/95.

cc with Attachments: Romir Chatterjee

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Attachment 1

U. S. ENERGY PROGRAM (RUSSIA)
(as of 10/1/93)

Problems Being Addressed: With major nuclear, oil, gas, coal, electric power and industrial elements, the energy sector of Russia is only exceeded by that of the U.S. in size and diversity. Russia's economy depends almost exclusively on the sector for foreign exchange through oil and gas exports. Given this and the sector's relative size in the Russian economy, its success in dealing with its staggering restructuring, financial, technology modernization and environmental problems is crucially important to overall economic and democratic reforms.

The U.S.'s size, federal and state political structure, diverse power sector, level of industrial development, and private sector dominance of its energy sector, has led key Russian players in the sector to see the U.S. as a primary model as they move to a free market economy. Timely and effective U.S. responses to these Russian perceptions promise to open the door to long-term and mutually beneficial relationships. These factors have driven the selection of all USAID-funded energy sector activities, except those related to nuclear power plants.

Program Focus: Energy sector assistance is provided in three functional areas: restructuring for a market economy (government and private sector roles, policy reform, legal and regulatory frameworks and privatization); efficiency improvement (production, distribution and end-use); and engineering technology transfer (pilot projects such as energy efficiency, oil and gas development and production, clean coal technology, combined cycle gas turbines, and refinery upgrades). The program concentrates on activities which are most critical to the energy sector's shift to a market economy, improve economic and environmental performance and offer opportunities for long-term Russian-American business relationships. A new activity is the supply of energy and environmental equipment. Nuclear power plant safety improvements is of critical importance.

Expected end-of-Program Status: Most key players of the sector will have acquired a functional understanding of a market economy; government and private sector roles will be defined through market economy based legislation and regulations; the implementation of restructuring and privatization plans that are being developed at present will be well advanced in at least two sub-sectors; the overall economic and environmental performance of the sector will be improving; several key U.S. engineering technologies will have been demonstrated; the financial health of oil, gas and electric power sub-sectors will be improving; and many of the necessary mechanisms to attract and protect private investments will be in place.
mcm/011093

Attachment 2

U.S. ENERGY PROGRAM (RUSSIA)

PRINCIPAL PROGRAM ACTIVITIES
(Status as of 7/31/95 and IDEA/M Role)

1. Energy efficiency improvement audits and donation of equipment and instruments for the district heating system of Kostrama and Yekaterinberg. Conference to report results and Energy Efficiency Trade Exhibits in 4 cities.

   Status: All work finished. IDEA/M role: None

2. Development of Energy Efficiency Strategy, identification of possible new energy efficiency activities, recommendations concerning the introduction of Integrated Resource Planning.

   Status: Report that was completed in August, 1993 served as input for work under the energy efficiency component of the Joint Energy Alternatives Study described below and Mission decisions concerning follow-on energy efficiency activities. IDEA/M role: Encouraged and supported use of report as background document and input for subsequent energy efficiency activities.

3. Design of $1.2 billion Flared Gas Recovery Project for World Bank and other donor/private sector financing.

   Status: The study that was completed in early 1994 demonstrated that only marginal investments were justified. A World Bank loan was not provided. IDEA/M role: Monitored and kept Mission informed concerning the study.

4. Design, together with the Germans, of a pilot $300 million Gas Distribution System Rehabilitation Project for World Bank and other donor financing. The project included substantial energy efficiency improvement and institutional restructuring components.

   Status: Design of the project was completed in 1994 and a loan in the amount of $ 106.5 million was approved by the World Bank in mid-1995. The original anticipated funding level of $300 million was reduced in response to failure of three regional entity accept responsibility for their share of proposed World Bank loan. Role of IDEA/M; Monitor project design and support Mission information needs as requested.

5. Power Sector Privatization and Investment Promotion Program. Through five joint working groups, assistance was to be provided in the areas of overall restructuring and privatization plan, legal and regulatory framework, wholesale market development, financial systems and markets, investment promotion and human resource development. Assistance under provided as contemplated in all areas except human resource development.

   Status: A final report on phase 1 activities of four working groups (overall restructuring and privatization plan, legal and regulatory framework, wholesale market development, financial systems and markets, investment promotion) was issued in July, 1995. The report set the stage for further assistance in the area of investment promotion. Human resource activities were limited to the provision of a limited number of specialized courses provided under the Energy Efficiency and Market Reform (EEMR) project and the NIS Exchange and Training (NET) project. IDEA/M role: Managed the kick off of activities and pro-actively supported implementation from October 1993 through July 1994. From August 1994 through the closing of the IDEA/M in July 1995, support was provided on an as requested basis except training under the NET project. For the NET project, IDEA/M's role was pro-active and substantial.

6. Joint Energy Alternatives Study. The key objectives of the study were a major reduction in the risk of accidents in nuclear power plants and a plan to attract investment in the Russian power sector. Status: The study was implemented by five joint US-Russian working groups that studied the following areas (energy efficiency, thermal power plants, nuclear power plants, hydropower plants, power transmission and distribution, economic and financial analysis, investment planning and team effort integration). The study was started in late 1993 and finished in mid-1995. IDEA/M role: IDEA/M strongly supported initial activities including the development of the joint terms of reference, communications with Russian counterparts, setting up of five joint working groups and contracting of local experts. From August, 1994 through the closing of the IDEA/M in July 1995, support was provided on an as requested basis. Key assistance was provided during this latter period in communicating with senior RAO EES Rossii management.

7. Coal Sector Reform - The still on-going activity was started in early 1992 to channel management and safety improvement advice and assistance to miners in the Kuzbass and Vorkuta Regions of Russia, the Donbass Region in Ukraine, and Karaganda Region of

Kazakhstan. The scope was expanded in mid-1993 to include assistance with a World Bank led design of a program to restructure the entire Russian coal sector including the retraining of workers affected by the close down of less efficient mines. IDEA/M role: Encouraged close work with the World Bank, monitored the program and provided general advice and support as requested.

8. Energy Partnership and Exchange Program - The primary objective of the on-going program is to forge and support industry to industry exchange partnerships between the energy sector entities of the United States and Russia and other NIS countries. Under the partnerships the industries are exchanging legal, institutional and technical information and providing study tours and internships to each other's managers and specialist.

   Initially, three exchange partnerships were established in Russia (Edison Electric Institute and RAO EES ROSSII (the new National Power Company of Russia), the American Gas Association and GAZPROM and the American Gas Association and ROSGAS. As of 7/31/95, the initial partnerships were being phased out in favor of partnerships with regional operating companies.

   RAO EES ROSSII is a joint stock holding company that was established in February of this year to manage the national power system through the period (about 3 years) of its restructuring and privatization. Total assets of the sector in replacement value terms exceed $400 billion. Seventy-two regional heat and power distribution companies and fifty-one power generation companies are at various stages of Corporatization and privatization.

   GAZPROM which has recently been restructured as a joint stock company is the highest foreign exchange earner in Russia. It collects and wholesales 94% of Russia's natural gas, much of it in Europe.

   ROSGAS distributes 72% of the country's natural gas through 72 regional subsidiaries that are at various stages of Corporatization.

9. Energy Training - Energy Training has been funded under two projects (EEMR and NET). Both projects offer training to virtually all elements of the energy program (oil, gas, coal and electric power) . The Mission's strategy was to use funds of the latter multi-sector project to complement energy project funded training. The strategy failed because

of the reluctance of the PVO funded under the EEMR to participate in the NET program that was managed by a different PVO.

IIE, the EEMR funded PVO, has a long and successful record of cooperating with USAID in the area of energy training. It was anticipated that IIE would develop a comprehensive human resource and training program for the power subsector as mentioned above under the Power Sector Privatization Program. Status: Funding limitations and IIE's initial bias in favor of the oil and gas sectors training resulted in no progress in the development of a comprehensive Human resource and training program for the power-Subsector. Nevertheless a significant number of courses have been provided by the two PVO's. IDEA/M's role: Monitored and kept USAID informed concerning activities under each of the two projects. In the case of the NET project, IDEA/M served as the primary NET project interface with the Russian energy sector entities, identified and prepared initial course descriptions, and provided other support as requested by the NET PVO and the Mission.

10. Krasnodar Gas Turbine Combined Cycle Power Generation Project. This 1,350 MW project (estimated to cost over $900 million) will introduce economically and environmentally efficient western technology to Russia. The project was identified under the JEAS described above. USAID is providing the technical assistance required to design and analyze the project for World Bank appraisal and World Bank and private sector financing. On the closure of IDEA/M on July 31, 1995, technical assistance activities that were started in March, 1995 were running approximately 4 months behind schedule. IDEM/M role: Assisted substantially with the definition of roles and relationships of the various participants (USAID, WB, Russian side, consultants, etc) and in drafting and review of the terms of reference for the project design team.

11. USAID Funded Activities of other USG Agencies - such as nuclear power plant safety and regulation (DOE and NRC); support of the Moscow Energy Efficiency Center (DOE); introduction of advanced coal-fired power generation technologies (coal-gasification combined cycle power generation and fluidized bed coal combustion) (DOE); introduction of U.S. energy technologies through seminars and conferences in such areas as utility management, electric power law and regulation, financial packages for electricity projects, gas pipeline technology, renewable energy (geothermal power generation, solar hot-water heating and passive space heating) (DOE); establish oil and gas centers (DOE); reburn air

pollution control technology for thermal power generation plants (EPA); E-SOX retrofit technology for electrostatic precipatators of thermal power generation plants; methane emission reduction in such sources as coal mines, gas pipelines, and landfills (EPA); integrated resource planning in electric utilities (EPA); establishment of geological information, seismic and geochemical centers in Moscow and Tyumen (DOI-USGS); and assistance in concession leasing/conveying exploration and development rights including the preparation of tenders, assessing environmental contamination and remediation, and operational and environmental safety during exploration (DOI-MMS). Status: Implementation of most activities has been quite slow with little USAID participation and virtually none has been completed. IDEA/M role: Initially and through August, 1994, IDEA/M had a significant role in inter-agency coordination, reviewing and recommending USAID approval of implementation plans, sharing relevant experiences of others, arranging and participating in bilateral meetings, and obtaining travel clearances. By invitation of the DOE, participated in meetings of Joint US-Russia Energy Policy Committee that are co-chaired by the Secretary or Deputy Secretary of Energy. Provided a broad range of advice and support to the U.S. side of the Bilateral Gore Chernomyrdin Commission. IDEA/M's role from August 1994 through its closure on 7.31/95 was on an as requested by USAID/Moscow basis.

12. Cooperative Agreements with World Bank (WB) and European Bank for Reconstruction and Development (EBRD) - Activities under such agreements include technical assistance in petroleum legislation and taxation (WB); oil enterprise corporatization/commercialization (WB); petroleum sector reform (WB), petroleum project tendering (WB) participation with five other countries in an EBRD managed study of the cost of up-grading the economic and environmental performance of GAZPROM's vast natural gas collection, processing and distribution system to present day standards. The latter study has been completed. the issuance of a final report is pending. Most if not all the other activities are on-going. IDEA/M role: Initially, IDEA/M monitored all activities and on the invitation of the respective IFI, participated in key meetings. After august 1994, monitoring and reporting on the activities was on an as requested by USAID/Moscow basis.

13. Energy and Environmental Commodity (equipment) Import Program - the purpose of the program was to provide urgently needed equipment and materials to Russia's energy and environmental sectors. The basic criteria for the selection of equipment and materials to be financed under the program is that they improve the economic and environmental

performance of Russia's energy sector. The program which had its funding level reduced from $125 million to $90 million was authorized in late 1993 and scheduled to be completed in 12 months. As of July 31, 1995, implementation was substantially behind schedule. IDEA/M's role; IDEA/M played a major role in the design and authorization of the project including the setting up of the Joint US-Russia Steering Committee that is responsible for its implementation. Workload considerations in early 1994 and subsequent decisions of USAID/Moscow limited IDEA/M's role after 1/94.

Additional information concerning IDEA/M's role can be found in its monthly reports which are available in IDEA/NIS and USAID files.

MCM/151195

ANNEX 3

FINAL REPORT
MANAGEMENT SUPPORT ACTIVITIES
(IDEA, INC.)
USAID/ENI/EEUD/EI
CENTRAL ASIAN REPUBLICS

Prepared by:
Rolf K. Manfred
IDEA, Inc.

October 1995

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LIST OF ATTACHMENTS

This report describes activities in the energy sector performed in support of the USAID Mission for the Central Asian Republics (CAR) under International Development and Energy Associates (IDEA), Inc.'s contract Number CCN-002-C-00-3128-00 with USAID/ENI/EEUD/EI.

I. OBJECTIVE

The objective of the work was to provide technical management support to the USAID Mission in Almaty, Kazakhstan.

II. SCOPE

The assignment in Central Asia started in October of 1993 and ended two years later. During that period, assistance was provided to:

- define and implement strategies and tasks for development of market-oriented energy policies;
- devise strategies and projects to improve public welfare by increasing energy efficiency and reducing health risks;
- direct, coordinate, and support relevant projects being performed by contractors;
- provide liaison and dialog with the appropriate counterpart authorities;
- perform special assignments as requested by the USAID Mission.

Most of the work was performed in the Republics of Kazakhstan (17 tasks) and Kyrgyzstan (11 tasks). Regional tasks also occasionally included coordination with the energy authorities of the other three CARs (Uzbekistan, Turkmenistan, and Tajikistan) and special assignments were undertaken to assist the development of hydroelectric projects in Tajikistan.

Early strategies worked out by USAID for the area focussed mainly on the electric power and district heating sectors including work with the coal industry. One project dealt with the oil refining sector. The work was directed toward the development of competitive, privately owned utilities; restructuring to market-efficient organizations; adoption of efficient fuel use policies; and preparation of schedules and cost analyses for meeting future electricity demand in league with environmental protection.

III. ACCOMPLISHMENTS 1993-1995

The accomplishments of this assignment are the result of cooperation and work of many co-workers. I would like to single out the effective and constant support of Dr. Barry Primm, Energy, Environment and Agriculture Officer USAID CAR Mission and his assistant Irina Alexeeva. The entire CAR Mission staff provided a consistent activity base. The entire energy program in Central Asia was sympathetically and effectively supported by Gordon Weynand, USAID/Washington.

Many of the contractor representatives worked as part of a single team and most counterpart associates in Kazakhstan and Kyrgyzstan helped the program.

Office and Staffing

- An IDEA field office was established and a staff including the office manager (Dinara Rashitova), an engineer (Gennady Doroshin) and driver/assistant (Yuri Petrov) was employed in Almaty. An auxiliary office was set up in Bishkek.
- The IDEA office facilities also provided logistics/ communication support and working space for visiting contractor teams throughout the contract duration period.
- The IDEA office provided information and arranged meetings for energy contractors and U.S. industry representatives with counterpart authorities, as appropriate.

Kazakhstan

Policy

- Consulted for drafting of national decrees to move the energy sector away from a monolithic centralized structure into subdivisions which may be more amenable to eventual, gradual privatization.
- Fostered movement to form an independent regulatory agency.
- Supported private industry with background investment data.
- The Government of Kazakhstan (GOK) accepted the USAID-sponsored plan for a 25-year National Energy Savings Program. An Energy Savings Decree was also prepared for consideration by the Council of Ministers.
- Principles for price and tariff setting were adopted by the GOK and IMF.

Efficiency

- Identified energy savings measures by key industries to be used by the GOK in decrees.
- Identified and priced energy savings measures specific to oil refineries used by potential private investors.
- Identify costs of coal quality improvement, coal handling, and mining safety measures.
- Analysis of priorities and realistic costs for repowering the existing major power plants initiated.
- Initiate an analysis of options and costs to establish environmental controls at power plants completed.

Intellectual Exchanges

- Partnerships between CINergy and KazakhstanEnergo and KazakhstanAlauGaz resulted in management structure reforms in the latter.
- Mid-level executive training in utility management initiated.
- The GOK participated positively in the First Regional Energy Conference on Energy Savings (July 1995).
- Co-sponsorship of Second Regional Energy Conference for Central Asia on Energy Trading accepted by the GOK.

Kyrgyzstan

Policy

- Established concept of an independent regulatory agency.
- Principles for price and tariff setting accepted by the Government of Kyrgyzstan (GOKR) and IMF.

Efficiency

- Analysis of electric power demand growth indicated emphasis on hydroelectric power generation for economic and environmental reasons. Analysis also identified need for a regional power market study.

- Tariff collection increased slightly by installation of meters and rate payment structures.

- Siting and conceptual design of a new 2300-MW hydroelectric station was completed.

- Established cost and engineering basis for an international bank loan to reconstruct the Bishkek district heating system.

- Established cost and engineering basis for an international loan to reconstruct the electrical transmission system.

- Completed survey of coal resources and use.

- An analysis of the impact of adding hydroelectric power generation on regional water usage was initiated.

Intellectual Exchanges

- Partnership of KyrgyzGosEnergo with Washington Water Power established. Interchanges affected changes in Kyrgyz management practices.

- Training of mid-level utility executives in progress.

- First Regional Energy Conference on Energy Savings was co-sponsored by the GOKR.

Tajikistan

- Analyses were done on the funding of Rogun Hydro Station and Pamir One Hydro Station.

Uzbekistan and Turkmenistan

- Working basis for regional energy cooperation established.

IV. STRATEGY DEVELOPMENT

Several tasks were in progress before the start of the IDEA activities in Almaty in October 1993. In Kazakhstan, these included an analysis of electricity costs/tariffs by International Resources Group Limited (IRG Ltd.), an engineering study to effect efficiency increases in oil refineries (by John Brown Co.) and a program to improve the operation of the Karaganda coal mines (PIER). In Kyrgyzstan there was a similar cost/tariff analysis by IRG and a feasibility analysis for a new hydroelectric generating station at Kambarata (by HARZA). The

results and status of these tasks will be summarized in the following section.

Visits and consultation with counterpart agencies provided "wish lists" for both Kazakhstan and Kyrgyzstan. Project implementation documents for work to be conducted by prime contractors Hagler Bailly and Company and Burns & Roe, as well as by cooperative agreements (US Energy Association, PIER, and Institute for International Education), were prepared in January 1994 for review and approval by USAID in Washington.

The USAID Mission in Almaty formed a Task Force to prepare a Strategies Energy Plan for Central Asia for 1994 and 1995. This plan, approved by the Mission Director in July 1994, provided the rationale, indicators, budget and donor coordination directions for the region. The Task Force Strategic Plan retained most of the tasks proposed in January. Four originally proposed tasks were dropped due to budget constraints (Feasibility Analyses of Kazakhstan's East-West Oil and Natural Gas Pipelines, Formation of an Environmental Control Technology Center and Preparation of Environmental Legislation). A highly significant new task was added, which was the consideration of Regional Energy Issues.

Later, at the insistence of the Kazakh Ministry of Energy and Coal (MOEC), another task, the Least-Cost Power Supply Analysis for South Kazakhstan, was dropped.

The final list of individual projects comprised 13 tasks in Kazakhstan, nine in Kyrgyzstan and one of regional scope (Attachment A). The funding split coincidentally echoed this division (59%, 39%, and 2%, respectively).

V. TASK DESCRIPTIONS AND STATUS

A. Kazakhstan

1. Policy and Investment Support (Hagler Bailly)

Task Scope: Assistance is being provided in the preparation of three "laws" (the Kazakhstan term; a better term would be "decrees"):

- the Electric Power Law (being prepared by Latham & Watkins, a Hagler Bailly subcontractor) to allow restructuring of the power sector to allow competition and privatization;
- the Coal Law (Pepper, Hamilton and Scheetz) to allow eventual privatization of coal suppliers; and

- the Energy Savings Law (Latham & Watkins) to translate into law the provisions presented in a separate Energy Savings Plan (see below).

Task Status: Concepts and drafts of all three laws have been submitted to the MOEC.

The proposed Energy (Electric Power) Law emphasized the need for an independent regulatory agency and provided a framework for privatization. The MOEC decided to prepare its own, very different, version for submittal to the Council of Ministers, but requested that advisory USAID support be continued.

In the meantime, the Council of Ministers of the Government of Kazakhstan signed a Restructuring Decree which:

- reconfirms the central authority of KazakhstanEnergo for the larger power plants and all of the transmission network;

- creates nine other Energos (separate Holding Companies each directly administered by the Ministry of Energy and Coal Resources). One of these separated Energos has substantial generating capacity, others were created to respond to local political needs, and another entity includes the hydro stations. These "baby" Energos answer to the MOEC (not KazakhstanEnergo). The decree does not allow for privatization at this point, but does not rule it out down the road. According to Kazakh insiders, this means one to five years. It is my opinion that the first attempt at partial privatization of an existing Energo is at least one year away.

- permits Independent Power Producers (IPPs) to feed into the national network.

The language describing rate setting is fuzzy - the MOEC clearly wants to continue to calculate costs and fix surcharges, but must yield ultimate authority to the Anti-Monopoly Committee.

The power pyramid starts from President Nazerbaev, the Once and Future President, to Prime Minister Kashigeldin and thence to his ambitious Deputy Mette. Mette runs the Council of Ministers which, in the absence of a Parliament, makes legislation. Mette needs allies and will not antagonize the MOEC at this point. Together this whole power structure will not make sudden, voluntary, major changes; the body of Gorbachev twists slowly in the wind. There is also a strong,

understandable nationalistic feeling that Kazakhstan must not be led by foreigners; and yet they are not sure how to solve the money shortage problem without losing absolute, central control. In my opinion, there is now sufficient foreign entrepreneurial interest that, combined with need and greed, will result in private generation. If this privatization occurs at the Oblast level, then distribution will be privatizable.

There are several problems to overcome. One is the reduction of risk to the investor through electricity/heat purchase guarantees and guaranteed fuel supply prices. Both require stability; it is therefore essential that prices/tariffs be regulated by an independent agency.

Recommendations: (Hagler Bailly) Support should be provided to the Anti-Monopoly Committee in their campaign to become a truly independent regulatory agency. Currently they respond directly to the Council of Ministers through their very able and respected President Svoik. The crossroads function is the authority to set prices/tariffs which requires the ability to account for all costs so that real busbar costs and surcharges can be calculated. The direct, unencumbered accomplishment of this goal requires clear and open cooperation and coordination among USAID contractors whose functions may overlap in this area.

It may be advantageous to station an in-house resident utility economic advisor in the Ministry for consultation, including the preparation of specifications, proposal evaluations, and liaison. With the support of specialists, this "Counselor" could also help to set up a NERC-type function and to assist in the organization of Technical Institutes. [NERC (North American Electric Reliability Council) collects power plant failure data; utilities and power plants use this information to make maintenance and replacement plans which are cost and schedule efficient.] In addition, it is essential to maintain close coordination between the legal effort and the energy efficiency work being conducted within the different tasks.

On the Coal Law, concepts were submitted to the MOEC and comments from various sources were received by Pepper, Hamilton and Scheetz.

The coal industry is a bipolar affair in Kazakhstan with the coal "Joint Stock Holding Companies" at Karaganda and Ekibastuz, which are like "feudal states" at one pole and the central government at the other pole. Karaganda produces a variety of coal qualities ranging from uneconomically mined,

high-ash steaming coal to essential metallurgical coal (for the currently sick steel industry). The inefficient and dangerous underground mines at Karaganda need to be shut down creating a social safety net problem for perhaps 20,000 mine employees and all the dependent services. Karaganda's domestic (Karaganda Power Station) and foreign customers (mainly the thermal plant in Bishkek) can still be supplied or supply can be shifted to Ekibastuz. Ekibastuz produces a very high-ash coal (50%) much more economically in open pit mines, although health, safety and environmental problems exist. The Ekibastuz coal is used extensively at mine-mouth power plants (Ekibastuz, Yermanski, and Pavlodar) and for export (both coal and the electricity products to Russia).

Recommendations: (Hagler Bailly) Cooperation with the MOEC in the development of coal industry legislation should be continued. The MOEC is preparing its own version of a Coal Law and will compare the two. The likelihood, or desirability, of coal production privatization in the short run is doubtful. The objectives, however, should be to assure that private power producers can obtain secure and financially sound long-term coal supply contracts. Another avenue is to privatize some of the more efficient small coal mines sprinkled throughout northeast Kazakhstan.

A separate USAID task (see below) strives to demonstrate coal cleaning processes which would result in significant reduction of the mine-mouth ash content. This would reduce coal transportation costs, widening the market and increasing generation capacity of the existing boilers. It will be important to keep these two tasks integrated.

The Energy Savings Law draft has been well received. Again, I expect that the MOEC will draw up its "own" version. The reason for the more favorable reception has been that we are working under the lead and in support of a local, well-connected firm and that the Law is integrated with a separate USAID-supported task called the Development of an Energy Savings Plan (see below).

Recommendation: Proceed to refine the draft law in light of comments.

2. Energy Efficiency Improvement (Burns and Roe)

Task Scope: The objective of work in this sector is to improve public welfare through assurance of the availability of safe, reliable and inexpensive electricity and heat.

The Kazakhstan power sector has seen steep degradation of its electricity and heat-generating capacity over the last four years due to the collapse of domestic and inter-republic trade, and therefore, flow-back of maintenance funding. This decline in energy production capacity has been more than compensated for by a decline in demand. Even pessimists expect demand to resume growing in three to five years. A realistic estimate is three percent annual growth starting after a couple of years. At that point, if no action is taken now, a serious energy shortage will curtail economic growth. This can be prevented by undertaking a series of concurrent campaigns as illustrated in Attachment B. In order of least cost (see attachment C):

- 10-15% of the shortage can be made up through energy savings in generation, end use, and demand-side management;
- about 50% of the shortage could be made up by reconstruction/repowering of existing plants;
- the balance could be made up by a combination of new construction of coal and hydro plants by independent producers, co-generation or increased power imports.

Task Status: The USAID-funded portion of the Kazakhstan National Energy Savings Plan has been completed by Burns and Roe and is a part of the overall plan which will be submitted to the Council of Ministers later this year.

Site visits to four large power stations (Yermanski, Pavlodar, Karaganda and Ust-Kamenogorsk) were completed by a Burns and Roe team (see Attachment D). The reports showing reconstruction priorities, costs, and schedules will be submitted to the GOK authorities in the near future.

Tests to clean coal from the usual 50% ash level to at least 38% (the maximum boiler design specification limit) are underway by Burns and Roe. Tests with one sampling of Karaganda coal showed that low-cost cleaning would be successful. Coal cleanability test equipment is being purchased for delivery to the Kazakhstan counterparts. Kazakhstani technical experts were trained to work proficiently with the test equipment.

Recommendations: (Burns and Roe) These tasks should be completed and the results disseminated to potential investors. Preparation of specifications and bid packages should be supported for upgrading the power plants.

3. Energy Environment Improvement (Burns and Roe, PIER)

Task Scope: To improve the control of environmental emissions of power plants and to increase safety and health conditions at coal mines.

Task Status: This Burns and Roe task is a companion to their analysis of the extent and cost of reconstructing power plants in Kazakhstan. It is a highly appreciated task in Kazakhstan and will involve the cooperation of at least three ministries (Energy, Ecology, and Economy), a significant milestone on its own. At the time of the writing of this report, the contract had not yet been issued by USAID after almost two years of initiation of scoping, including six months of waiting for final action by the Contracts Office.

PIER has worked to improve the understanding by Kazakhstan coal industry officials, both in the coal mine regions and in the Ministry of Energy and Coal Resources, of modern management and efficient mine management processes. PIER also has worked effectively at Ekibastuz to improve health and safety conditions. The PIER task (Coal Mine Efficiency) ended when its contract duration period was reached. Due to innumerable changes and delays in project implementation as well as changes in the GOK response, many of the planned activities could not be completed.

Recommendations: (Burns and Roe) The power plant-related work should be completed as soon as possible after a contract is finalized.

4. Training (USEA, IIE, DOE)

Task Scope: To train utility staff in preparation for restructuring to a market-led utility sector.

Task Status: USEA has conducted a number of staff exchanges and cross-training exercises between CINergy and its "partners" Kazakenergo and Alaugas (the National Gas Distribution Company). IIE is completing an 18-week training course for mid-level utility executives. It is difficult to assess the long term impact of these training efforts, but some of the trainees will become leaders in the field in the future and are likely to accept new concepts.

A DOE energy conference, which potentially would present state-of-the-art information on oil/gas recovery technology as well as a clean coal technology program, was discussed but has not materialized. The aim of such a conference would presumably be to foster relations between the Kazakhstan and

US technical communities.

Recommendations: (USEA) Continue the training work on a moderate level.

B. Kyrgyzstan

1. Policy and Investment (Hagler Bailly, Burns and Roe), and 2. Energy Efficiency Improvement (Burns and Roe, USGS)

Task Scope: Hagler Bailly provided assistance in restructuring the utility sector into a competitive, market-led mode. The Burns and Roe task will determine the market potential for new hydroelectric generation in Kyrgyzstan and for export to other Central Asian Republics. The USGS (US Geological Survey) performed a survey of the coal resource and an analysis of future coal utilization. The NRECA (National Rural Electrification Cooperative Association) performed field studies to increase collection of electricity dues.

Task Status: The appearance of greater progress toward a market economy in Kyrgyzstan is somewhat misleading. It is a smaller country with considerably less natural resources than its neighbors and is therefore more encouraging to foreign assistance. This is leading to more openness toward privatization (e.g. gold mining) but not, thus far, in the energy sector.

The Government of Kyrgyzstan concluded about two years ago (1992) to encourage growth of hydroelectric resources (cheap, clean, unique) and to deemphasize coal fuel. The USGS coal resource survey confirmed that the available coal resources in Kyrgyzstan were plentiful and still partially unexplored, but that coal quality was generally poor and the mine locations were far from the use sites. A final report of the USGS activity is being issued.

To succeed with implementing its hydro power expansion plans, the Kyrgyz power company needs to increase domestic consumption bill collection, export and, most important, to overcome the concerns regarding water supply and its cost by its neighbors. Kyrgyzstan also needs to upgrade the transmission and distribution system which is falling apart. Renovating the existing district heating system is also required. Burns and Roe is performing analyses to determine:

- The potential market for additional hydroelectric power. HARZA completed a hydroelectric station sizing and siting study in 1993. The conclusion, which was accepted by the

Kyrgyz authorities, was that a new 2,300-MW unit at Kambarata would be effective and feasible. Burns and Roe is planning to conduct a power market analysis to determine the market for new generated electricity in Kyrgyzstan and in the region.

- The cost and priorities for rebuilding the transmission and district heating systems. This information was developed in cooperation with the World Bank, the Asian Development Bank and the GOKR in order to facilitate a loan to accomplish these reconstruction tasks. An $85/million loan is now in the advanced negotiation stage. Some of the work on the district heating system renovation planning was accomplished in close cooperation with an EU TACIS project in Kyrgyzstan.

The USAID tasks performed by Hagler Bailly have been directed at the formation of an independent regulatory agency. Concurrently, a new Energy Law was drafted under the EU TACIS aegis. The draft law does not identify the need for such an independent entity. Hagler Bailly has, thus far, made significant converts among the Kyrgyz counterparts for the independent regulatory agency but the formation of such an agency is far from being accepted by the old rank-and-file. The USAID effort is greatly aided by the strong support of the World Bank, which has declared that the completion of a loan agreement depends on the actual formation of an independent regulatory agency by the GOKR.

Recommendations: The effort by Hagler Bailly to form a regulatory agency and to assist in restructuring of the sector are key goals and should be supported. Privatization efforts are made difficult by the often overlapping activities of USAID contractors engaged in "privatization" and legal issues and certainly by the competitive atmosphere with other donor organizations (such as TACIS). The World Bank has taken a leading role in coordinating the donors and should be supported in this respect. The coordination of USAID contractors in this area needs to be strengthened.

The efficiency improvement plans (district heating and transmission systems) are nearing completion and will hopefully result in reconstruction of these systems. Continued coordination with the international banks is essential.

The power market analysis is the first step towards developing the hydro resources, which is a key to the economic advance of the country and perhaps the region. The issues of water usage rights, water pricing, electricity costs, and cost guarantees

are sensitive and difficult to address and solve. An initial approach should be made through regional energy conferences. The USAID contractors working in the "Energy" and "Environment" sectors should coordinate their resources and strategies. The potential rewards in welfare and stability of the region are high.

3. Training (USEA, IIE)

In Kyrgyzstan, as in Kazakhstan, training activities have been conducted by USEA and IIE. The USEA-supported partnership is between KyrgyzGosEnergo and Washington Water and Power. IIE is just completing the training of about 25 mid-level utility executives aged less than 40 years. It is difficult to assess the immediate impact of this 18-week training period, however the trainees will undoubtedly form a cadre for future modernization of the management structure.

No DOE conference has been planned for Kyrgyzstan.

C. Regional Activities

Task Scope: To promote accord on regional energy issues.

Task Status and Recommendations: A Regional Energy Conference was conducted in Kyrgyzstan in July 1995. The Conference was co-sponsored by KyrgyzGosEnergo and the arrangements were made through USEA. High-level representatives from each of the five Central Asian Republics attended. Total attendance was close to 100. The objective of the first conference was to initiate dialog on common energy issues and to identify issues to be addressed in subsequent regional actions. A topic of universal interest, Energy Savings, was selected for the first meeting. Groundwork was laid for the next meetings. Although each republic strives to become energy independent, the essential flow of fuel and electricity across borders will continue. No individual state/republic has all the resources necessary for its well-being within its borders (Attachment E). Currently the energy trade among the CARs is on a case-by-case basis and transactions are carried out by barter. Pricing, contracting, and accounting procedures vary and no central "trading house" exists. Moreover, the insistence on national self-sufficiency in energy does not tend to result in the least-cost solutions and retards the economic development of the region.

Some of the issues, such as

- optimal dispatch of electricity,
- least-cost energy use,
- distribution of water for electricity generation and

agriculture,
- transportation of fuels,
- environmental improvements,
- standardization of costing and contracting

are subsets of the regional concerns, but also lend themselves to focussed, singular attention. Privatization, restructuring or changes in laws are not recommended subjects for these conferences due to the political differences and sensitivities of these topics in some of the Central Asian Republics.

It was the consensus of the CAR delegates that the next (second) regional conference should address Energy Trade issues and be held in Almaty, Kazakhstan. The third conference should address Energy, Environment, and Water Usage and be held in Tashkent, Uzbekistan. It would be rightly desirable that the next conference is preceded by serious efforts to get pre-conference consensus on an agenda and the likely outcomes. Delegations from each republic should be limited (perhaps three each) and should be at the level of Presidential Advisor, Minister, or Deputy Minister.

Integration of collateral activities is necessary. For example (1) Energy Union, an organization dating back to the USSR days, has been revived recently. EU TACIS appears to be a participant in coordinating the dispatch of electricity through the Tashkent Dispatch Center. Hagler Bailly plans to lead a Regional Electricity Trade task in 1996; (2) environmental contractors, such as CH2M-Hill, are active in the water usage and environmental area; (3) Burns and Roe will be performing a water usage study as part of its Kyrgyzstan Power Market Analysis; (4) an energy trade approach to meeting future energy shortages at least-cost (see Attachments) can be strengthened. At present, it may be advisable to avoid participation by Russia, although it is part of the energy trade balance and some delegates to the conferences may recommend it. Russia has not shown interest in hegemony in the Central Asian Republics area, especially if sponsored internationally.

This regional activity is one of the foremost areas in which continued USAID support can be most productive in terms of long-term economic and public welfare advances in Central Asia.

VI. CONCLUSIONS

- Most of the Central Asian Republics' energy problems are not unique to the region, but are similar to those of the other NIS. The main difference is the richness of natural resources combined with the absence of unrestricted export routes.

- The shift of the energy sector from a government-controlled to a market-led system is slow and cannot be expected to occur in a sudden jump. The expectation of a short-term shift is unrealistic.

- All of the Central Asian Republics want to be energy independent but will always be interdependent. Regional accord is essential to provide least-cost, reliable energy to the public.

- The lack of cooperation between agencies or organizations within a republic is often a major retardant to economic advance. For example, in Kazakhstan there is little cooperation, in fact, constant confrontation, between the Ministry of Energy and Coal Resources and KazakhstanEnergo, the joint stock holding company. There is even less cooperation with the management of the two major coal companies (Karaganda and Ekibastuz). In addition, there is no common forum for planning and coordination between the MOEC and other Ministries (Economy, Finance, Justice, or Ecology).

- The lack of coordination between donor organizations, particularly USAID and EU TACIS, is a serious problem. Agreement on future plans and coordination should be reached between the Washington and Brussels headquarters of these organizations, and adhered to by the field offices.

- The most effective approach to develop and implement policy and energy efficiency tasks is to work in close cooperation with local, well-established and effective specialized entities. Roles of donors and local counterpart private, as well as, government entities must be specified clearly.

- The management support provided by IDEA was reasonably effective in the CAR due to the support, confidence, and delegation of responsibility by the USAID Mission. However, this required constant interaction and coordination with USAID, the contractors, and the counterparts. This, in turn, required the ability to rapidly respond to situations on site. The lack of authority and the often long communications pathway between the support office, which is in "the trenches", to the Mission, to USAID Washington, and back, sometimes hindered, or prevented, progress to be made at the appropriate time.

- The primary technical management responsibility should be in the field. There should be frequent meetings between Washington and the field, no more than three-months apart in order to effectively communicate and coordinate, and to report progress, problems, and changes.

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USAID - Sponsored Energy Activities in Kazakhstan

Policy and Investment

Task 1. Law and Regulation
Task 2. Energy Pricing and Tariffs
Task 3. Restructuring and Privatization
Task 4. Investment

Energy Efficiency Improvement

Task 5. Energy Savings Plan
Task 6. Heat and Power System Efficiency Improvement
Task 7. Coal Cleaning

Energy Environment Improvement

Task 8. Power Plant Environmental Improvement
Task 9. Coal Mining Safety and Health

Training

Task 10. Short-Term Training
Task 11. Long-Term Training
Task 12. DOE Conference
Task 13. Management Support

USAID - Sponsored Energy Activities in Kyrgyzstan

Policy and Investment

Task 1. Regulatory/Legislative Reform
Task 2. Corporatization/Privatization Support
Task 3. Accounts Receivable
Task 4. Power Market Analysis

Energy Environment Improvement

Task 5. District Heating System Improvement
Task 6. Transmission System Improvement
Task 7. Coal Resource Assessment

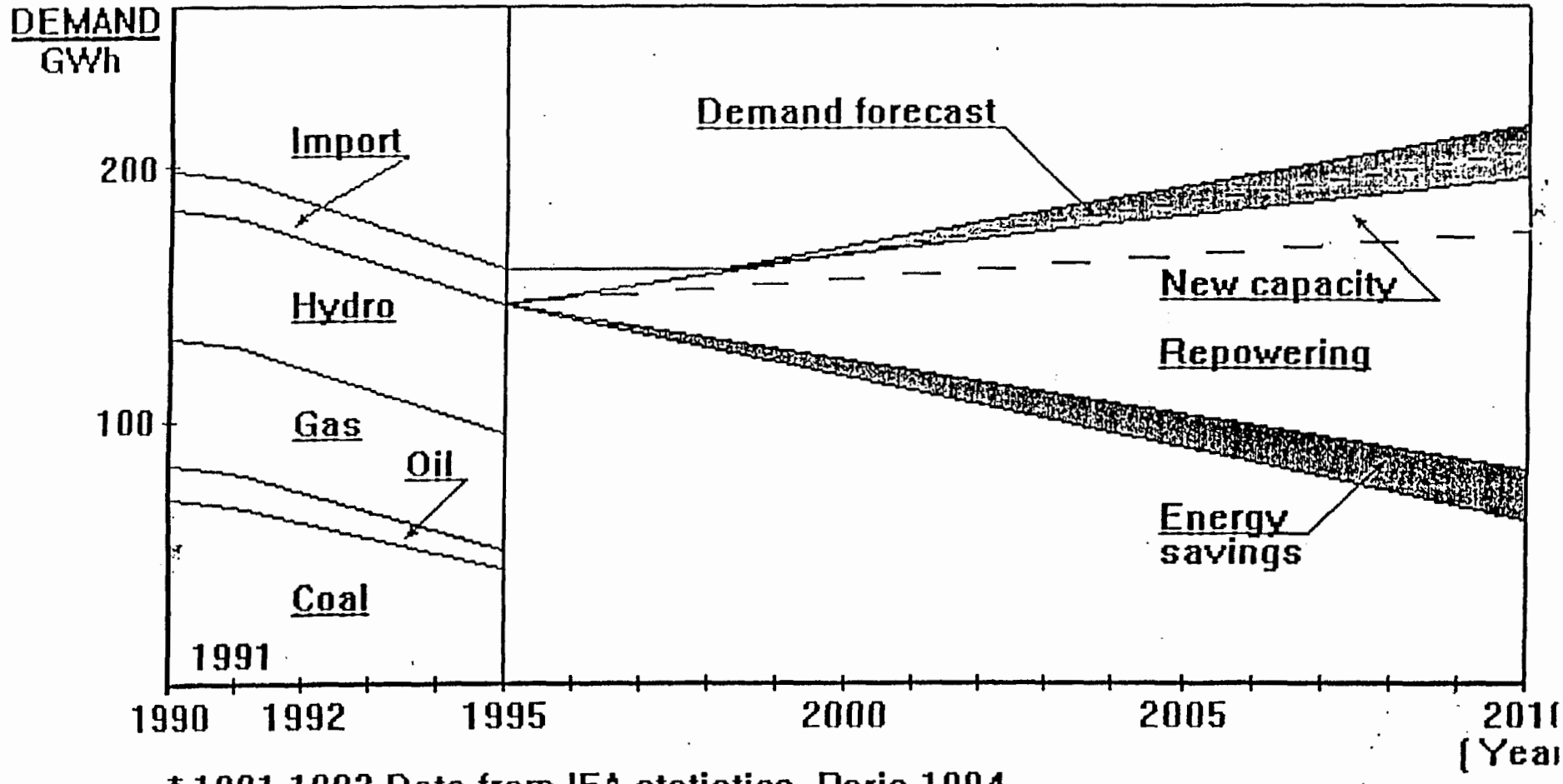
Training

Task 8. Short-Term Training
Task 9. Long-Term Training

REGIONAL COOPERATION IN CENTRAL ASIA

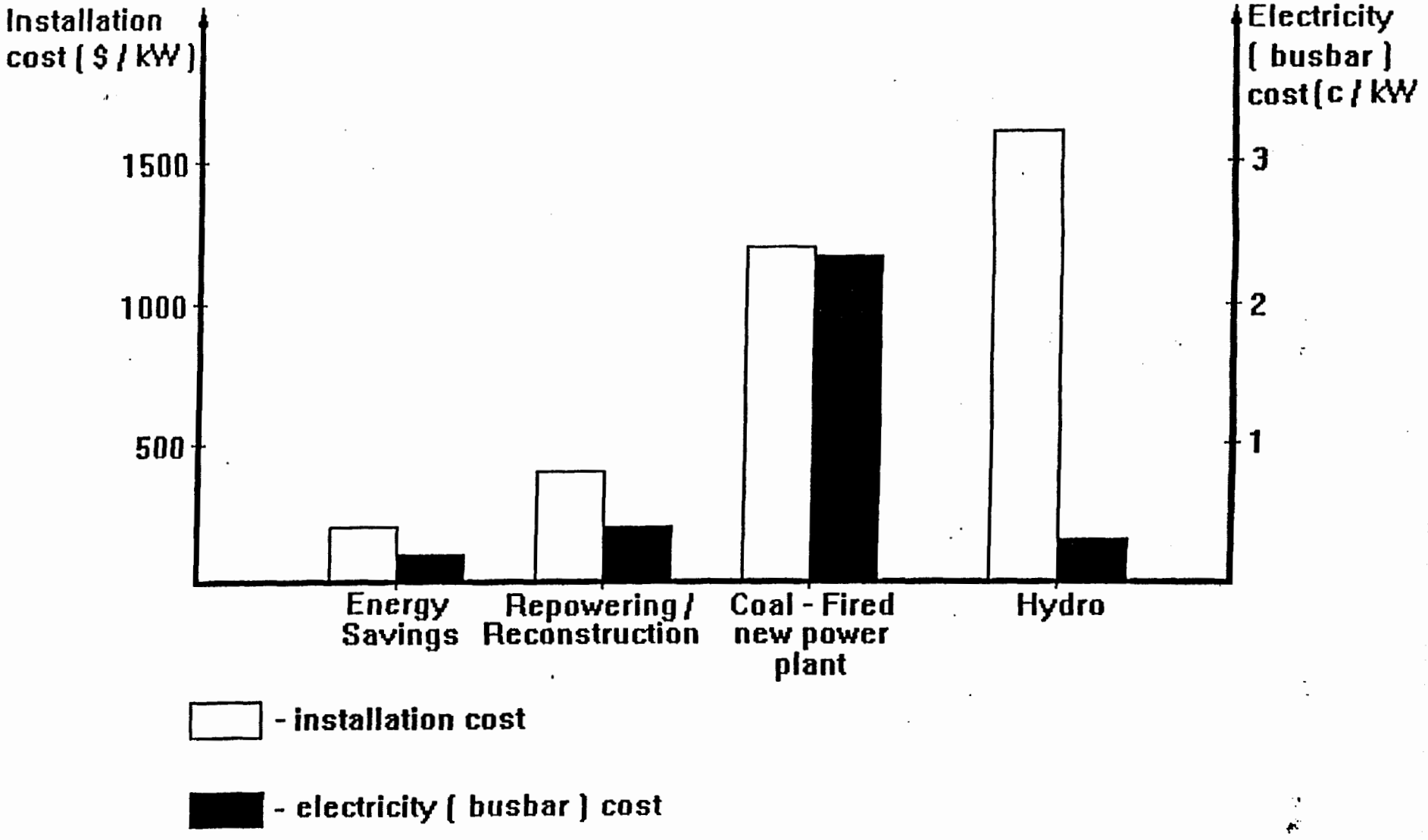
Task 1. Energy Training - Regional Cooperation

REGIONAL DEMAND STRATEGY



* 1991-1992 Data from IEA statistics. Paris 1994

ATTACHMENT C



KAZAKHSTAN

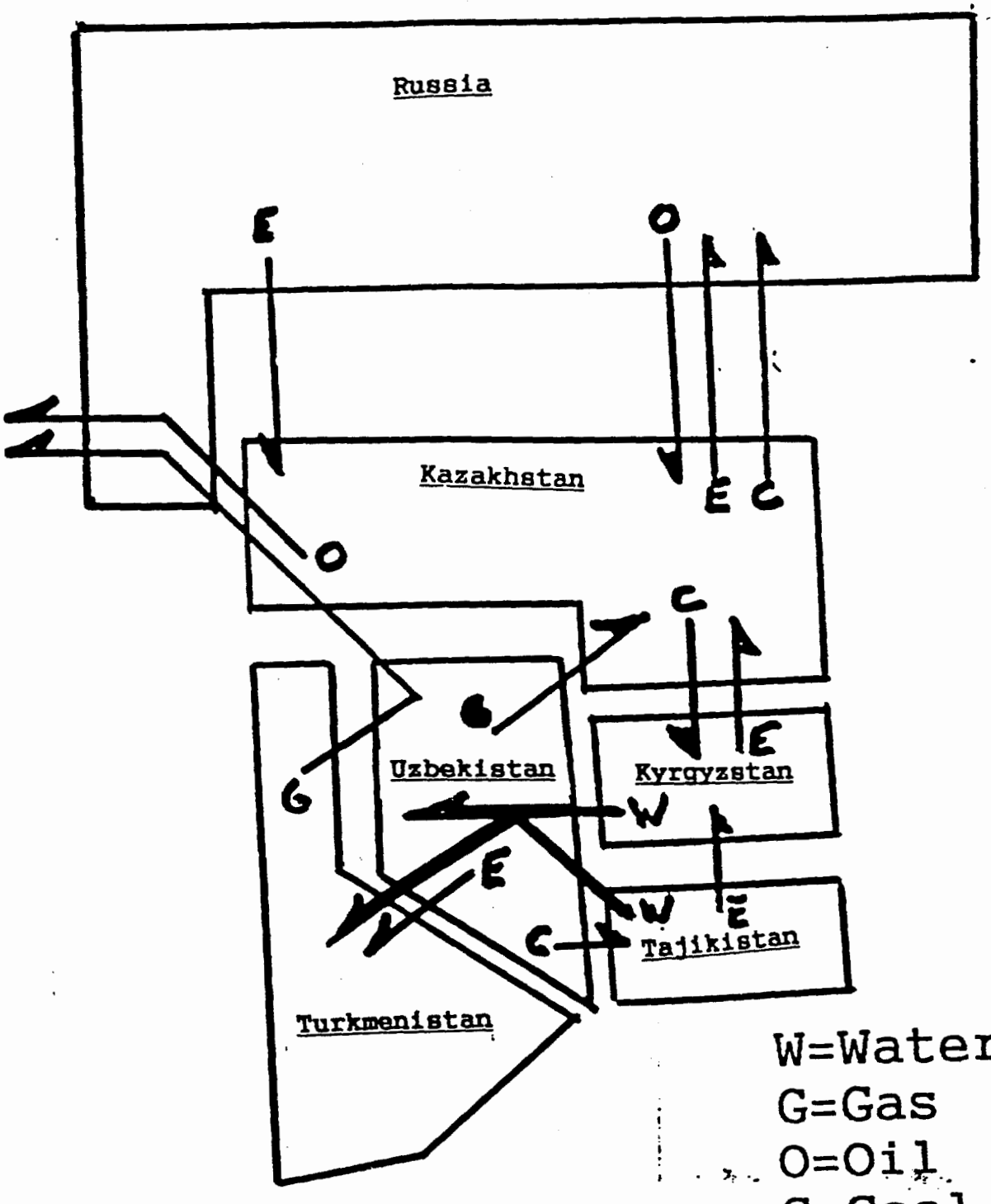
ENERGY SECTOR REVIEW

LIST of POWER STATIONS UNDER OPERATION

A.	Thermal Power Stations	Capacity MW	Heat Capacity Coal/h	Fuel	Commission Dates
1	Ekibastuz (1)	4,000 (8x500)	--	coal	1980-1984
2	Ekibastuz (2)	500	--	coal	1990
3	Irmak	2,400 (8x300)	--	coal	1968-1975
4	Djambul	1,230	--	gas/fuel oil	1967-1976
5	Alma Ata	173	--	fuel oil/gas	1962-1964
6	Karaganda (1)	164	324	fuel oil/gas	1942-1955
7	Karaganda (2)	648	300	fuel oil/gas	1962-1964
8	Alma Ata CHP (1)	145	1,060	fuel oil/gas	1960-1969
9	Alma Ata CHP (2)	510	879	coal	1980-1991
10	Tekel CHP	24	92	coal	
11	Ust-Kamanogorsk CHP	242	596	coal	1951-1966
12	Leninagorsk CHP	57	329	coal	
13	Borgrin CHP	50	314	coal	
14	Atirau CHP	227	596	fuel oil/gas	1962-1970
15	Aktiubinak CHP	83	697	fuel oil/gas	1943-1987
16	Uralsk CHP	28	622	fuel oil/gas	
17	Karaganda CHP (1)	32	460	coal	1943-1950
18	Karaganda CHP (2)	435	1,200	coal	1973-1976
19	Karaganda CHP (3)	440	700	coal	1977-1978
20	Bolkhash CHP	120	250	coal	1937-1963
21	Djeskazakan CHP	177	409	coal	1955-1962
22	Tentek CHP	18	202		
23	Kustanai CHP	12	496	fuel oil/gas	
24	Rudni CHP	131	805	fuel oil/gas	
25	Arkalik CHP	6	401	fuel oil/gas	
26	Pavlodar CHP (1)	350	1,350	coal	1964-1975
27	Pavlodar CHP (2)	110	430	coal	1960-1962
28	Pavlodar CHP (3)	440	1,250	coal	1972-1978
29	Petropavlovsk (2)	380	1,225	coal	1961-1983
30	Tselinograd CHP (1)	26	765	coal	
31	Tselinograd CHP (2)	240	540	coal	1979-1983
32	Ekibastuz CHP	12	770	coal	
33	Semipalatinsk CHP	6	275	coal	
34	Djambul CHP (4)	60	554	coal	1963
35	Tchimkent CHP (1$2)	42	462	fuel oil/gas	
36	Tchimkent CHP (3)	160	556	fuel oil/gas	1981-1983

A.	Thermal Power Stations (con't)	Capacity MW	Heat Capacity Coal/h	Fuel	Commission Dates
37	Kizil-Orda	146	378	caol	1964-1975
38	Kientau CHP	29	189	coal	
B.	**Hydropower Stations**				
1	Kapchagai	434	--	--	1970-1971
2	Buhtarmin	675	--	--	1960-1966
3	Ust-Kamenogorsk	331	--	--	1952-1959
4	Shulbinsk	585	--	--	1987-1991
5	Alma Ata	45	--	--	1943
6	Small Hydro	8	--	--	
C.	**Nuclear Power Stations**				
1	Actac LMFBR	150 (3x50)	100	--	1973
D.	**Other**	1,100	1,500		
	TOTAL :	17,060	21,150		

ENERGY EXPORTS/IMPORTS



W=Water
G=Gas
O=Oil
C=Coal
E=Electricity

ATTACHMENT E

ANNEX 4

TECHNICAL AND MANAGEMENT SUPPORT CONTRACT
TO

USAID/ENI/EEUD/EI

FINAL REPORT
CAUCASUS

International Development and Energy Associates, Inc. (IDEA)

IDEA - Caucasus Group

Prepared by:
Harout Topsacalian
IDEA, Inc.

July 1996

Table of Contents

1. Executive Summary

International Development and Energy Associates, Inc. (IDEA) was awarded the Energy Projects Support contract in August 1993 to provide professional services to USAID in the energy sector of the Newly Independent States. By November 1993, IDEA established its field Caucasus office in Yerevan, Armenia with Harout Topsacalian as the Energy Adviser to USAID. Due to the increasing focus and funding in Georgia, a second IDEA office was opened in Tbilisi in February 1995. When the office was opened, the Mission did not have any direct hire or PSC responsible for the energy sector. As a result, IDEA's role was especially critical during the first year of the program where it became a true extension of the USAID Mission assuming key responsibilities including: interacting with the host government ministries, assisting and working with implementing contractors, designing and developing scopes of work with and for ENI/EI, recommending and coordinating training courses, coordination with other multilateral organizations, assisting in the monitoring of contractors, and providing technical analyses, among other activities. These activities continued until the termination of IDEA contract in July 1996.

Although a great deal of effort and work was accomplished by all the contractors and USAID personnel in helping improve the Caucasus energy sector, this report will primarily focus on IDEA's specific contributions to the overall effort. The report highlights these and other achievements in detail in the "Achievement" section. IDEA's office operations and setup are described in the "Background" section. In "Lessons Learned," areas and actions that USAID should address to improve and enhance future programs are identified. "Future Task Opportunities..." identifies potential tasks to focus on critical areas currently not being implemented in the energy sector. A technical profile and background of Armenia's and Georgia's energy sector has not been included in this report, but can be made available upon request. In each section below, unless otherwise specified, it may be assumed that the description of activities apply to both Armenia and to Georgia.

2. Background

Upon completing a brief introductory tour in Washington DC, IDEA established its office in Yerevan in November 1993 when Harout Topsacalian, the IDEA Energy Advisor, arrived to begin activities on USAID's then $25+ million program which included, but was not limited to:

- designing and developing contractor terms of reference for USAID's consideration;
- defining and writing strategies/ tasks for development of market-oriented energy policies;
- devising strategies and projects to improve public welfare by increasing energy efficiency and reducing health risks;
- directing, coordinating, and supporting relevant projects being performed by contractors and other international organizations;
- monitoring contractors on the performance of their scope of work;
- providing liaison and dialog with the appropriate counterpart host government officials;
- performing special assignments as requested by the USAID Mission.

Armen Yeghiazarian was hired as the Energy Specialist, Hasmik Malumian became the Administrative Assistant, and Ashod Gevorkian was the driver and logistical support person. During the difficult winter of 1993, supplies were not locally available and electricity was available for 1-2 hours a day even in the best equipped homes. Generators were a necessity. Due to these various difficulties and the size of the energy program ($22.5 million in FY '94), the USAID/C requested that IDEA locate its office within the Mission. IDEA/C reported directly to the Mission Director, Suzanne Olds, until a PDO - David Lieberman was assigned to the Mission.

From 1993 through 1994, the energy program for Georgia was relatively insignificant (less than $800,000). By late 1994, the USAID program in Georgia grew to $4.8 million. IDEA/C prepared a proposal to open an office in Tbilisi. The proposal to establish a Tbilisi office was approved and by February 1995, Tengiz Gogelia was hired as the Energy Specialist, Maya Mickashavidze was hired as the Administrative Assistant and Emil was the driver. IDEA - Tbilisi was initially located within the Tbilisi USAID office. By mid 1995, due to shortage of space and a new USAID Mission Director - Fred Winch, IDEA established external offices outside USAID in Yerevan and Tbilisi and reported to the PDO and the Mission Director.

SB

The field offices interacted on a daily basis with Malinda Goodrich of IDEA in Arlington, who was assigned responsibilities for supporting the IDEA/C offices from Washington. She was instrumental in maintaining contacts and coordinating with the Washington ENI/EI offices (particularly Gordon Weynand and Ed Markeset) and in assisting IDEA/C with finalizing scopes of work and budgets for USAID's final review and comment.

The IDEA offices in Tbilisi and Yerevan were formally closed on July 12 and July 26 respectively. All equipment and files were transferred to the USAID Mission and representative offices. The Armenian FSN, Armen Yeghiazarian has became the lead person for the World Bank Project Implementation Unit to manage the proposed $40+ million pre-loan analysis which will assist Armenia's transmission and distribution companies. Tengiz Gogelia was hired as the lead person for the World Bank Project Implementation Unit for a World Bank pre-loan analysis in the transport sector.

3. Achievements

The success of the achievements below and on-going activities are due to the hard work of several local and expert employees with IDEA and USAID. While much has been accomplished in the energy sector by the various contractors, the achievements below will focus primarily on IDEA's role in the process. In hindsight, IDEA/C's role evolved into USAID's "one-stop energy contact point" for the respective host governement energy officials as well as international organizations. At any one time, IDEA/C provided: direct support, coordination, program design, monitoring, analysis to contractors, USAID, and the US Embassy in areas concerning the energy sector in Armenia and in Georgia.

a) Project Development and Analysis for USAID:

- Developed and designed scopes of work and reviewed technical reports for numerous tasks to be implemented under the technical/engineering contract and institutional reform contracts. Beginning in 1993, IDEA/C continuously met with Ministry of Energy officials and communicated with USAID/W to design a program which tried to meet Armenia and Georgia's immediate energy needs as well as to set a foundation for tasks that were part of USAID's energy sector reform strategy in the NIS. In essence, this became IDEA's main contribution - especially during the first 1.5 years - where, through its good relations with the Ministy of Energy, determined the needs for the energy sector. It was also instrumental in the initial introductions and establishment of contacts between the Ministry and USAID contractors arriving which arrived later. Additional prgram support by IDEA/C are described below according to category.

  More extended efforts were particularly put into the Hydro/TPP Rehabilitation, Oil/Gas Exploration, Weatherization, IPP legislation, among other tasks. In addition, IDEA/C assisted in reviewing delivery orders and recommending modifications where applicable. In summary, IDEA's management support of the USAID energy portfolio consisted of the following USAID funded tasks with the respective implementing contractors:

  ARMENIA
  1. Mini-Hydro Turbine & Generator Procurement (B&R);
  2. Commodity & Equipment Procurement (B&R);
  3. Fast-Track Coal Mining in Djadjur (B&R);
  4. Hydro/TPP Rehabilitation TA (B&R);
  5. Industrial Conservation Project (B&R);
  6. Oil/Gas Seismic Analysis (previously "Drilling) (B&R);
  7. Weatherization (B&R/RMA);
  8. Design of Computerized TPP Inventory System (B&R/Hill);

9. Commercialization of Power Sector (Hagler Bailly);
10. Privatization (Hagler Bailly);
11. Legislation in the Power Sector (Hagler Bailly);
12. Development of Regulatory Body (Hagler Bailly);
13. Design and Procurement of Ministry MIS (Hagler Bailly);
14. Exploration for Coal in Armenia (USGS);
15. Study Tours and Utility Partnerships (USEA);
16. Training (IIE, AED);
17. Support to World Bank on Gyumush HPP (B&R);
18. Support for T&D World Bank Pre-Loan Analysis (B&R);
19. Environmental Assessment of the Energy Sector (B&R);
20. TA on the Nuclear Power Plant (B&R, DOE)

GEORGIA

1. Commodity & Equipment Procurement (B&R);
2. District Heating Analysis (B&R);
3. Geothermal Study & Procurement (B&R);
4. TA Support for the EBRD Loan (B&R);
5. Commercialization of Power Sector (Hagler Bailly);
6. Privatization (Hagler Bailly);
7. Legislation in the Power Sector (Hagler Bailly);
8. Development of Regulatory Body (Hagler Bailly);
9. TA Support for World Bank Pre-Loan Analysis (B&R, Hagler Bailly);
10. TA Support for the Oil Pipeline in Georgia (Hagler Bailly)
11. Study Tours and Utility Partnerships (USEA);
12. Training (AED);

- The IDEA office facilities also provided logistics/communication support and working space for visiting contractor teams throughout its contract duration period. The IDEA office also provided information and arranged meetings for energy contractors and U.S. industry representatives with counterpart authorities, as appropriate. Specifically, assisted Hagler Bailly in Armenia and in Georgia by proposing qualified local FSNs for hire and by finding appropriate office quarters for them in both republics. Until Hagler was established, IDEA/C provided them all the logistical and technical support to begin their operations. It also provided logistical and office support to the World Bank, EBRD, Ronco, and other organizations and companies working closely with USAID.

- IDEA/C worked hard to promote the US Government's assistance to Armenia and Georgia. It developed contacts with the local media and the US Information Agency to frequently set up trips and news-worthy events to highlight USAID's programs in the energy sector. Among the more notable media coverage due to IDEA/C's efforts include:

* Ambassador Gilmore's (Armenia) Visit to the Djadjur Coal Mine;
* Ambassador Tomsen (Armenia) and Fred Winch's Signing Ceremony for the USGS MOU;
* Ambassador Courtney's (Georgia) Visit to a Private Georgian Power Company;
* Signing Ceremony for USEA Utility Partnership Between TVA, Georgia Power & Light and Georgia's Sakenergo;
* Coverage of USAID's Energy Program in *Platt's Oilgram News*;
* USAID Energy Program Profiles on the Internet and Aragil News;
* Design and Assistance to Publish Local Language Energy Newsletter;

- *Oil/Gas - Seismic Task Recommendation:* After the Government of Armenia decided to stop pursuing the oil/gas drilling program, funded by a combination of USAID and private money, USAID suspended its tentative project assistance in this area. IDEA/C, through its monitoring of international projects, learned of a proposed TACIS project for a promotional campaign in the oil sector which would potentially be implemented by the UK's SPT and Partex of Portugal. IDEA/C proposed to USAID to allocate $500,000 of the remaining funds to perform seismic analysis which, combined with the TACIS public relations effort, can provide more information to prospective oil/gas companies. USAID approved the proposal and it is expected that a suitable US sub-contractor to B&R will be selected by the end of 1996.

- *Legislation - IPPs and General Counsel:* In 1994, IDEA/C was one of the early proponents for developing a funding mechanism for private independent power producers (IPPs). IDEA worked with Latham & Watkins (Hagler Bailly), which is assisting 2-3 small IPPs identified by IDEA to develop power purchase agreements and other contracts according to international standards. IDEA also developed the scope of work for allowing a limited level of effort for legal assistance to the Ministry of Energy. This has led to valuable legal assistance to the Ministry in their negotiations with 2 major private power projects in Armenia.

- *USGS - Support to USGS:* The U.S. Geological Survey embarked on a 2-3 year coal exploration and data recording project estimated at $3 million. Since USGS has only a local FSN, IDEA/C, in close cooperation with USGS, supported, coordinated, and implemented their administrative activities in Armenia that ultimately led to the signing of the project MOU between USAID and the Ministry of Environment and Underground Resources.

- *RMA/ARS - Initiation and Support for Joint Efforts*: Resource Management Associates (RMA) was implementing a wide ranging weatherization program as a sub-contractor to B&R. They were primarily focusing on training local staff and weatherizing hospitals and schools in Yerevan. The Armenian Relief Society (ARS)

- a US non-profit benevolent women's organization - held discussions with the Mission in implementing similar activities on the village level in Gumry and other locations outside Yerevan. The ARS's efforts and work was considered sensitive due to the ARS's political connections to the Armenian Revolutionary Federation (ARF), a political group banned in Armenia at the time and their lobbying clout in the US. IDEA/C proposed that the ARS meet with RMA to develop a joint effort using the total USAID funding for weatherization. This proposal included 3-way meetings and negotiations with RMA, B&R, and ARS, which faced some difficulties but were ultimately successfully resolved into a working agreement and an ARS sub-contract with B&R.

b) Training:

- *IIE* - Assisted the International Institute for Education (IIE) in defining and developing the training courses in Armenia. IDEA/C worked closely with the host government to select the Armenian and Georgian candidates to attend the courses. Provided all logistical support to IIE and its training providers.

- *USEA* - Assisted the US Energy Association (USEA) in defining training and study tours implemented in the US. In Georgia, IDEA/C assisted the Tennessee Valley Authority and Georgia Power and Light to make the necessary government contacts and reach a formal agreement with Georgia's Sakenergo (the state electric power company) to sign a formal utility partnership. IDEA/C worked closely with the host government to select the Armenian and Georgian candidates to attend the courses. IDEA also assisted the USEA to make contacts with PG&E, which in 1996 led to a utility partnership with Armenia's gas utility.

- *AED* - Assisted the Academy for Educational Development (AED) in defining and developing the training courses in Armenia. IDEA/C worked closely with the host government and AED to select the Armenian and Georgian candidates to attend the courses.

- IDEA/C developed the proposal for USAID to increasingly use implementing contractors such as Hagler Bailly and Burns & Roe to provide training through the existing USEA and AED funding mechanism. This was in contrast with the existing use of new training providers who often were not as familiar with local conditions or programs as the implementing contractors. This accepted proposal led to more cohesive training courses and to better candidates being selected for attending the courses.

c) Coordination:

- *TACIS* - IDEA/C initiated the monthly coordination meetings in Armenia with

TACIS and its sub-contractors in mid-1994. This allowed for better communication and less repetition of effort between the donor organizations. It also helped to make the best use of USAID's funding for hardware (not available in TACIS's programs) as in the case of the "Industrial Conservation Program" where TACIS-funded WS Atkins performed the energy audits at 6 industrial plants in Armenia and USAID-funded Burns & Roe. B&R provided the equipment.

- *EBRD* - IDEA/C maintained contact with the European Bank for Reconstruction and Development (EBRD) on specific projects beginning in 1993. IDEA/C developed the scope of work to develop a computerized plant inventory system for the Hrazdan Thermal Power Plant, already a recipient of EBRD funding. This task was accepted and completed by the EBRD-funded Hill International and USAID-funded Burns & Roe provided the equipment.

  Recently IDEA/C has been keeping the EBRD informed on the progress of the USAID funded metering and billing study - specifically on AEP's (B&R Consortium) analysis of Armenia's transmission and distribution system and CMPI's (of Hagler Bailly Consortium) report on the metering and billing system. This will assist EBRD's evaluation of a tentative $5+ million loan to support the Ministry of Energy's metering program. IDEA/C alerted USAID on the potential for cooperation on the EBRD's tentative loan talks between the two organizations.

- *World Bank* - IDEA/C has worked closely with the World Bank beginning in early 1994. It was especially active in supporting the use of the de-obligated oil/gas task money towards emergency repairs at the Gyumush Hydro Power Plant. In the last few months in 1996, IDEA/C worked actively with the Bank to assist with their pre-loan assessment of Armenia's transmission and distribution system. Specifically, IDEA/C developed the technical data sheets which the World Bank adapted for collecting engineering, technical, and inventory information from the selected Armenian distribution companies. This information will assist the World Bank and other USAID contractors to target the loan to the proper distribution companies.

- *Private Companies and Contractors* - During the 1994 Energy Conference in Armenia, IDEA/C met with General Electric and Westinghouse representatives and assisted them with meeting Ministry of Energy officials. This has led to serious discussions between the two companies and the US Trade and Development Agency to obtain funding for the exporting of equipment for Armenia's thermal power plants. In early 1996, IDEA/C met with representatives of Gas de France who were in discussions with the Armenian Ministry of Energy to provide technical assistance in the restructuring of the gas sector. Since this was a task which was being targeted for assistance by Hagler Bailly, IDEA/C organized meetings between the Ministry of Energy, Gas de France, and Hagler Bailly. In

conclusion, it was decided to leave the TA for the gas sector restructuring to Gas de France and the restructuring of the electric sector to Hagler Bailly.

Monitoring:

- IDEA/C regularly met with representatives of USAID contractors Burns & Roe, Hagler Bailly, USGS, USEA, IIE, AED, and their sub-contractors to keep an up-to-date profile of work in progress and adherence to the original scopes of work. This was reported to USAID/C and USAID/W. The main difficulty was for the Mission to monitor financial compliance with the budget due to the lack of timely access to contractor invoicing/billing. The Mission should receive timely financial information on contractors if it is to properly monitor their activities.

- IDEA/C also regularly met with host government energy officials to obtain feedback on their satisfaction with contractor performance.

Special Projects:

- *Energy Conference* - Assisted the US Department of Energy, USAID, USEA, and the Ministry of Energy in hosting the Second International Energy Conference in Armenia in 1994. Worked with the Ministry of Energy in writing a profile of the Armenian energy sector and preparing the workshops; using personal contacts, successfully solicited major corporations including General Electric, Southern California Edison, Westinghouse and Anaheim Public Works to attend the Conference. Assisted with all logistics during the Conference.

- *R4 Exercise* - Worked with USAID to prepare and advise on the R4 exercise including co-writing the five-year energy program strategy for Armenia and Georgia, developing goal statements and targets, and establishing measuring methods and standards.

- *Gyumush* - Worked closely with USAID and the World Bank to propose and re-allocate funding remaining from the oil/gas drilling task to support the emergency repairs at the Gyumush Hydro Power Plant.

4. Lessons Learned

Over the last two and a half years, IDEA/Caucasus experienced numerous changes in the USAID administration both in Washington and the field as well as in the host governments of Armenia and Georgia. From the early days in the cold winter of 1993, when IDEA was and extension and part of the first USAID Mission in Armenia to the current Mission staff which has established a more formal structure and a five-year regional strategy, IDEA's role has changed and adjusted to the needs of USAID. IDEA has observed much from different perspectives. The following are "lessons learned " which the Mission and Washington should consider.

- *Management:* This particular recommendation applies mostly if USAID decides to use other "support contractors" in Washington and the field. Because of the unique nature of the contract, IDEA's role in the field Mission was initially not clearly understood by contractors or to the host governments. This issue at times created confusion among US contractors, government representatives as well as international organizations. Due to the unique role of IDEA and the fact that USAID did not have a direct-hire energy representative, IDEA played a major part in implementing the energy portfolio. In future similar contracts, special afforts should be made to inform all parties of the the role of such a contractor from the very start.

- *Budgets:* Because of the difficulties in communications and the shortage of staff in the early phases of the program, the Mission staff did not have timely access to the budgets and financial data of the contractors. This made the Mission's responsibilities to check on contractor compliance more difficult to achieve since it was difficult to match the stated goals of the task with what was actually accomplished. Over time this problem was overcome as the Mission and AID Washington added staffing.

- *Regional Approach:* Time may have come for the Mission to adopt a regional approach to the energy sector in the Caucasus. Although Armenia and Georgia have progressed at different rates and consist of unique structures, their energy sector is likely to be ultimately integrated and coordinated on a regional basis as part of the Transcaucasus Grid (which existed in the Soviet era). Currently, projects and tasks are viewed for each country individually. Practically, a more regional approach can be accomplished through developing joint Armenian/ Georgian study tours and training courses (organized by the contractors and USEA). Furthermore, major seminars and/or conference (1-2 days on a semi-annual or annual basis) should be held in Yerevan and Tbilisi to review progress or opportunities. Contractors such as Hagler Bailly and B&R could start having a rolling tour for some of its key contractors who

would learn both systems and be positioned to in turn provide advice from a regional perspective. However, for this approach to be completely successful, there needs to be higher level discussions with the World Bank and TACIS to attract their support and cooperation on this as well.

- *Coordination:* USAID does not have an effective coordination role in Georgia. In 1994, IDEA/Caucasus took the initiative to develop a coordination group between USAID, TACIS, their contractors and other donors in Armenia. This was partly successful yet not sustainable because it was primarily created by contractors for contractors. It lacked the "official" aura which often assists in making such meetings successful. The energy program in the region has grown over the last few years. Such a coordination group is useful and needed and should be organized and led (perhaps on a rotation basis) by one of the main official country resident organizations like the USAID, TACIS or the UN. Contractors should attend but not have an official role unless requested by its funding organization. A monthly meeting should suffice to keep all parties informed about task developments, opportunities for cooperation, or problem areas. Furthermore, it would also be an opportunity to discuss regional activities in the case where there are the same contractors working in Armenia and Georgia (ex. Hagler Bailly and BCEOM).

- *Training:* In discussions with IIE, $60,000 were allocated to provide training tools for the Ministry of Energy in Armenia (overhead projectors, computers, instructional videos and VCRs, etc.). The allocated funding was never spent on this. As IDEA/C does not have access to IIE's financial information, it is difficult to ascertain how much money remains in their budget.

  In general, all three training-related organizations (IIE, USEA, AED) provided some useful exposure and qualified training personnel. However, there were several cases where although the trainers were competent, the course material seemed inapplicable to the needs of the client (the Ministry of Energy). In IIE's case, some of the courses were simply retakes on their program in Russia. On other cases, the trainers seemed to have not been well briefed on the unique conditions and energy problems of Armenia and Georgia - often developing standard solutions which were simply not applicable.

  IDEA/C recommended a new model which increasingly shifted training from the "out-of-the-blue" trainers to the existing implementing contractors which had spent considerable time in the region and were more intimately familiar with the needs. The existing training providers were not avoided but efforts were made to use them as mechanisms to provide expert instructions from contractors with regional experience. Simply put, training courses were best taught by implementing contractors such as Hagler Bailly Consulting, Merklein Associates, which had already developed months of on-the-ground experience and knowledge of the region.

5. Future Task Opportunities in the Energy Sector for USAID

- *Capital Markets* - One of the cornerstones of regulated utilities in the US and in other countries are their access to equity and bond markets for needed capital. This capital is often used for rehabilitation or new projects which help maintain efficient and safe operations of the energy sector. In Armenia's case, the energy sector is mostly reliant on the World Bank and EBRD loans for capital intensive projects. This cannot be sustained for long. While a sophisticated equity and bond market does not yet exist in the Caucasus, it is in the making. This is being accomplished through another USAID-funded program, implemented via the US Department of Treasury, which is providing an advisor to Armenia's Ministry of Finance for the implementation and scheduling of a treasury bill market. In discussions with the US advisor and his senior management, it became evident that a revenue bond system, while not attempted in other NIS countries, was feasible and workable. It is my opinion that the actual volume of proceeds from such a program are, at this time, not the critical issue. Rather it is the development and implementation of such a system and the discipline to issue regular bonds to finance energy related projects. This needs to be explored between USAID's ENI/EI office with the US Department of Treasury's Office of External Affairs. The main contact there should be Mr. Tom Briggs.
- *Coordination* - To date, coordination efforts for the energy sector in Georgia have had mixed success. Until late 1994, the UN held monthly meetings on the energy sector. But these meetings, attended by foreign embassies, humanitarian organizations, and contractors were not focused on the core problems of the sector. They were simply gatherings of all institutions doing anything related to energy. As such, the meetings concentrated mostly on the issues of emergency assistance and the provision of mazout and kerosene supplies. With the departure of the UN representative at the time, even these meetings ended. There is an opportunity for USAID to take a lead and begin a new partnership with other leading donor organizations to coordinate and begin a dialogue on key issues affecting institutional reform in Georgia.

- *Support Contractors* - IDEA's contract was one for providing technical and management support to USAID in Washington and in the field. Such a contract, irrespective of the selected firm, has several advantages which should be considered by USAID. It offers USAID with a flexibility to quickly obtain access to professionals in a wide range of activities and specialized skills. While USAID departments and other implementing contractors are often constrained by tight regulations or scopes of work, a general "management support contract" is very useful to fill the gaps and quickly address needs and emergencies in a very dynamic sector. This flexibility would allow USAID not only to serve host governments quicker and better but to also stand out among other international donor organizations.