



# **Energy Sector Status Report**

**Sixth Ministerial Conference  
on Central Asia Regional Economic Cooperation  
2-3 November 2007  
Dushanbe, Tajikistan**

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## REPORT ON ENERGY

1. The purpose of this Report, prepared by the World Bank with contributions from other IFIs involved in CAREC activities, is to capture key developments since the Fifth Ministerial Conference in Urumqi in October 2006.

### A. Regional Energy Projects

2. **Central Asia South Asia Regional Electricity Market (CASAREM).** Progress continues in the preparation of this initiative, which includes a set of projects for power generating capacity and transmission lines along with corresponding inter-governmental and commercial agreements as discussed below. Five International Financial Institutions (IFIs, including ADB, EBRD, IFC, IsDB and WB) are participating together with four governments (Afghanistan, Kyrgyz Republic, Pakistan and Tajikistan) in CASAREM. To realize CASAREM, the focus is on first creating the necessary institutional and legal frameworks, followed by development of the necessary transmission links with a view to trading electricity from existing generation facilities and subsequently, from the new generation projects.

- **Creation of Institutional and Legal Framework.** Afghanistan and Tajikistan have initiated in-depth discussions on the establishing the necessary institutional and legal framework for bilateral electricity trade. In August 2007, the two countries met at the energy ministers' level and signed a protocol whereby Tajikistan commits to export a minimum of 1000 GWh between May- Sep of each year to Afghanistan; and Afghanistan commits to take this power and ensure payments for this electricity in a credible way. Based on these critical agreements, an international standard Power Purchase Agreement is being developed and the target date of having such an agreement in place is January 2008. The World Bank is providing legal and financial advisory assistance to Afghanistan and Tajikistan (under separate projects) to realize this trade along commercial lines and to follow international practices.

In addition, as part of the CASAREM initiative to supply Central Asia electricity to Pakistan via Afghanistan, the consulting outputs of Phase 1 of Design of Institutional, Financial, Risk Mitigation and Legal Framework (IFRL Framework) were reviewed in Montreal, Canada in August 2007. Clear directions were given to the consulting team with regard to private participation, institutional structures to meet financing, asset ownership, common operation of the system, risk mitigation, and benefits to participants, especially Afghanistan. The revised outputs would be discussed at the 3<sup>rd</sup> CASAREM conference in Kabul in November 2007.

- **Transmission Links for electricity exports.** *There are several projects that would enable electricity trade between Central Asia and South Asia:*
  - **A 220 kV transmission system is being developed to supply power from Tajikistan to Afghanistan,** which will also aim to supply power to towns and other population centers from the northern borders of Afghanistan to Kabul (e.g., Kunduz, Baghlan, Pul-e-Khumri, etc). Tajikistan is undertaking to build the transmission links needed to supply up to 300 MW of electricity in the summer to Afghanistan. For this purpose, ADB and IsDB approved the Regional Power Transmission Interconnection Project totaling \$56.5 million in December 2006; and efforts are aimed at realizing this trade by late 2008. This line is part of the larger North East Power System (NEPS) that is being developed by Afghanistan

with the help of 3 IFIs (ADB, World Bank, IsDB) and bilateral donors (Germany, India, US).

- ***In June 2007, Afghanistan and Uzbekistan signed a Protocol*** whereby Afghanistan declared their need for 300 MW and Uzbekistan declared that it had the potential to deliver up to 300 MW to Afghanistan after upgrading their transmission network. Furthermore, Uzbekenergo agreed to undertake the construction of a double circuit 220 kV line from Surkan substation to the Afghan border plus the installation of a second autotransformer to enable the export of up to 150 MW to Afghanistan by end 2008. As a second phase, Uzbekistan will construct a 500 kV transmission line to connect the Surkan substation to the Guzar substation in order to increase their export potential to 300 MW.
  - ***In addition, Afghanistan is in discussions with Turkmenistan***, which is considering building a 500 kV line to the Afghan border, to increase significantly their current level of power exports to Afghanistan in future. USAID is financing a feasibility study to determine the most suitable arrangement to tie this connection to the Northern and Eastern Power System (NEPS) in Afghanistan.
  - ***In September 2006, the construction of the 500 kV South-North Line in Tajikistan was begun*** with \$280 million in financing from the People's Republic of China (PRC). This line is an important link between Tajikistan's main power generation facilities in the country's south and its north, and it will contribute significantly to decongest the transmission grid in Central Asia, especially in Uzbekistan. It will also enable Kyrgyz Republic to export its summer surplus to South Asia. This line is planned to be completed in late 2008 or early 2009.
  - ***Progress continues to be made on understanding the viability of CASA 1000 transmission link.*** This link would be a dedicated link essentially aimed at supplying Pakistan, but would also deliver some power to Kabul. A 2nd Multi-Country Working Group (MCWG) meeting was held on May 22-24, in Jeddah, hosted by the Islamic Development Bank, and the inception reports for the two critical studies - Techno-Economic Assessment (TEA) funded by ADB, and Design of Institutional, Financial, Risk Mitigation and Legal Framework (IFRL Framework) with funding arranged by the World Bank) studies were reviewed; and criteria for taking a go/no-go decision for the project in 3rd CASAREM Conference in Kabul were agreed upon. More recently, in August 2007, draft outputs of Phase 1 of were reviewed in Montreal in the 3rd MCWG Meeting. In addition to the clear directions given to the IFRL Framework study consultants (discussed earlier), directions were also given to the TEA consultants (i) to assess export surplus on generation from existing capacities plus Sangtuda 1, and (ii) transmission links should include those needed to connect Kyrgyz Republic to Tajikistan directly. The revised outputs would be discussed in the 3rd CASAREM Conference in November 2007 in Kabul.
- ***Generation Projects***
    - ***Sangtuda I Hydropower Project in Tajikistan***, Government of Tajikistan and RAO UES of Russia, the main sponsors of this 670 MW run-of-river hydroelectric project (HEP), continue to make significant progress in the completion of construction of this project. The first unit could be installed as early as December

2007 (and latest by March 2008); and the full capacity would be commissioned by April 2007. In accordance with the Tripartite MoU of February 2007, the summer production of Sangtuda 1 at a minimum would be earmarked for exports to South Asia.

- ***Tajikistan has launched the development of its coal resources in an integrated manner.*** Tajikistan authorities are aware that the high quality coal reserves they possess need to be developed to meet the winter demand for electricity as well as for space heating. Following the Government's request for expressions of interest from interested parties for the development of integrated coal mines and power plants complexes, a roundtable was held at end-May, 2007 in Dushanbe with interested investors, bilateral donors and the IFIs. It was decided to launch feasibility studies in accordance with the standards of the IFIs for the development of 1,300 MW to 1,500 MW thermal generating capacity on the basis of coal from the Fon Yagnob mine, the reconstruction of Dushanbe and Yavan thermal power plants, and the construction of a new thermal power plant. The US Trade and Development Agency has offered to finance the feasibility studies.

3. **Regional Gas Projects.** After assessing the prefeasibility of rehabilitation of the Tajik section of the Uzbekistan to Dushanbe pipeline and rehabilitation of the Kyrgyz section of the Tashkent-Bishkek-Almaty (TBA) pipeline, ADB has decided to pursue the latter project with participation from KyrgyzGas (Kyrgyz national gas company), KyrKazGas (a joint venture between KazTransGas (Kazakh gas transmission company), and KyrgyzGas). ADB is currently working on the technical design of the proposed pipeline project, and is developing an innovative financing structure that would involve cofinancing from other multilateral, bilateral, and private sector financiers, including possible public-private partnerships/concessions and privatization of KyrgyzGas.

#### **B. Regional Cooperation Strategy in the Energy Sector of the CAREC countries**

4. The first draft of a CAREC Energy Strategy was discussed at a meeting of the CAREC Energy Sector Coordination Committee (ESCC) on 14 September 2007 in Ulaanbaatar Mongolia. Minutes of the meeting are attached (Appendix 1). After incorporating the views of the ESCC, the Energy Strategy will be presented to the next SOM (immediately prior to the 6<sup>th</sup> MC) in Dushanbe in November 2007.

#### **C. Energy Efficiency and Opportunities Offered by Clean Development Mechanism**

5. ADB and WB continue to develop CDM programs and projects as summarized below.
- The ADB Energy Efficiency Initiative is implementing its 2<sup>nd</sup> phase until December 2007, which includes the preparation of country-level investment and action plans on energy efficiency, development of a project pipeline for 2008-2010, design and establishment of a Clean Energy Financing Partnership Facility, and identification of immediate energy efficiency investment opportunities. The ADB established a Clean Energy Financing Partnership Facility (CEFPP) in April 2007. The CEFPP is designed to finance (i) smaller energy efficiency investments that require quick and efficient transactions; (ii) technology transfer costs of clean technologies for a small number of high demonstration impact, large interventions that will catalyze deployment of clean energy technologies; and (iii) grant assistance for activities such

as developing the knowledge base and incentive mechanisms, advocacy, institutional capacity building, project preparation, and establishment of monitoring and evaluation mechanisms.

- The ADB Carbon Market Initiative (CMI) was approved in November 2006. The CMI underscores ADB's commitment to clean energy and climate change mitigation, by providing financial and technical support to developers and sponsors of projects with greenhouse gas mitigation benefits that can qualify as eligible CDM projects. As part of the CMI, the Asia Pacific Carbon Fund, a trust fund established and managed by ADB on behalf of fund participants, will provide up-front funding against the purchase of an estimated 25%–50% of future carbon credits expected from projects. In addition, the initiative will provide grant-based technical support for preparation and implementation of eligible projects as well as marketing support for additional carbon credits.
- In June 2007, ADB hosted an Asia Clean Energy Forum: Regional Policy and Finance Solutions, in Manila. The forum provided an excellent opportunity for project developers, the financial community and government representatives, to share information, identify and pursue financing opportunities, and devise strategies to scale up clean energy investments. ADB will also sponsor the upcoming 2007 Methane-to-Markets Partnership Expo to be held in Beijing, PRC on 30 October–1 November 2007.
- The World Bank continues its engagement in Central Asia within its recently endorsed assistance program for countries which have ratified the Kyoto Protocol and maintain a portfolio with the World Bank.
- The World Bank as trustee to a number of carbon funds will purchase Emission Reduction (ER) credits from identified projects in Uzbekistan including a project that (i) utilizes flared associated gases coming out of the North Shurtan, Garmiston, Kumchuk, and nearby surrounding gas fields owned by Uzbekneftegas and (ii) will install a new combined-cycled thermal power generating unit at the Tashkent Electric Power Station of Uzbekenergo. The World Bank together with the UNDP will sponsor the Tashkent CDM Carbon Forum on 29-31 October 2007.

#### **D. Enabling Legal and Regulatory Environment for Energy Sector Development**

##### **1. CAREC Member Electricity Regulators Forum (CMERF)**

6. The CAREC Electricity Regulators Forum (CMERF) held its 3<sup>rd</sup> Annual Meeting in Ulaanbaatar, Mongolia on 10-14 September 2007. The 5-day event, which brought together 60 representatives from CAREC energy regulatory bodies, policy makers, power industry specialists from Afghanistan, Azerbaijan, PRC, Kazakhstan, Kyrgyz Republic, Mongolia, Tajikistan and Uzbekistan, together with development partners, was co-hosted by the Energy Regulatory Authority (ERA) of Mongolia and ADB.

7. The Annual Meeting kicked off with a 3-day training workshop on principles of effective energy regulation, which was facilitated by international energy regulation experts. The training workshop was designed in response to direct requests by CMERF participants to strengthen their understanding of economic and incentive regulation and various tariff setting methods and practices.

8. The training workshop was followed by a plenary session at which country delegates briefed their counterparts on the progress of power regulatory reforms since the previous annual meeting in Almaty in September 2006. They also led an open session on planning future activities, and shared views on how CMERF can serve its members' needs more effectively. The country delegations supported and accepted the offer of the Kyrgyz Republic to chair the Forum in 2008 and to host the 4<sup>th</sup> annual meeting. It was also agreed that the next training workshop will be organized in Azerbaijan in early 2008.

9. During the last day of the Annual Meeting, ERA also showcased Mongolia's experience in energy regulation. Mongolia has a relatively advanced energy regulatory framework and ERA, which has been in existence for 6 years, is known as the most independent regulatory agency in the CAREC region. ERA presented case studies from its experience in tariff setting and public consultations process that is followed prior to making regulatory decisions. The delegations also visited the National Dispatch Center and observed its operations.

10. At the conclusion of the Annual Meeting, the delegations stressed the importance of coordination and facilitation of activities and the need for greater ownership of CMERF. Delegations reiterated that CMERF is an effective and functional forum and training activities provide direct and practical support for their work. The exchange of ideas during annual meetings is indeed something that regulators need and should be continued, to foster active cooperation among experts and regulators, and to build professional relationships between the CAREC region's regulatory bodies.

11. In 2006, delegations reaffirmed the practical value that the CMERF adds to the process of harmonizing energy regulations, encouraging and facilitating regional trade, and developing the capacity of both regulators and regulatory bodies. Delegations requested that CMERF focus on providing training to participants on specific regulatory topics. In March 2007, ADB approved a regional technical assistance, financed by the PRC Fund for Regional Cooperation and Poverty Reduction, to support CMERF's program of activities in 2007–2008.

**Central Asia Regional Economic Cooperation  
6<sup>th</sup> Energy Sector Coordinating Committee (ESCC) Meeting  
September 14, 2007, Ulaanbaatar, Mongolia  
Minutes of Meeting**

1. The Meeting was attended by delegations from People's Republic of China (PRC), Kazakhstan, Kyrgyz Republic, Mongolia, Tajikistan and Uzbekistan. The International Financial Institutions (IFIs) represented were Asian Development Bank (ADB) and the World Bank. The meeting was co-chaired by Mongolia (Mr. Sukhbaatar Tsegmid, Director General, Department of Fuel and Energy Policy and Planning, Ministry of Fuel and Energy) and the World Bank (Mr. Raghuvveer Sharma, Team Leader, Central Asia Energy Programs). The List of Delegates is provided in Attachment 1.

2. After confirmation of the Agenda for the Meeting, Mr. Sharma summarized the outcomes of the energy related discussions that took place in the SOM meeting in Manila on Sep 8/9, 2007. Immediately thereafter, the meeting began the discussions of the "CAREC Strategy for Regional Cooperation in Energy" (hereinafter referred as the Strategy), with a lead presentation by Mr. Nikolay Nikolov of the World Bank which summarized the Strategy document. The discussions and the understandings reached on the Strategy are summarized below.

**A. CAREC Strategy for Regional Cooperation in Energy**

3. PRC delegation informed the meeting that the actual review of the strategy document would be done in China together with other colleagues from PRC government, and their participation was to observe the discussions of the strategy. Kazakhstan and Uzbekistan representation was limited to people from their electricity sectors, and since oil and gas sectors were also very important for these countries, further consultations are indeed needed back in their respective countries on the Strategy document. Kyrgyz Republic and Tajikistan representatives commented that the document is a very serious one, and although the delegates were ready to discuss elements of the Strategy document in depth at this meeting, they too would benefit from more consultations with their superiors and colleagues in their countries. ***So the meeting concluded that formal comments, if any, from each of the countries would be sent [to the World Bank] before September 30, 2007.***

4. The discussions on the Strategy document were held under six topical heads: (a) Long Term Development Vision or Objective for CAREC energy sectors; (b) Contents of the Strategy; (c) Implementation of the Strategy; (d) Costs and Financing; (e) Performance Indicators; and (f) Steps to complete the Strategy Document.

- In terms of the Long term development objective, the meeting confirmed that the objective portrayed in the document is appropriate as it correctly portrays a country driven focus;
- In terms of content of the Strategy, it was confirmed that the three elements – Policy Measures, Capacity Building measures and Investment Measures (which may need some studies) – are the right ones. However, in terms of policy measures, the sequencing has to be given more thought and their priority and sequencing revised. As regards investments, the presentation should ensure that strategy is driving the investments (and investments should not be seen as driving strategy). Some countries, e.g., Mongolia wanted the inclusion of specific studies (e.g., diversification of sources of oil and gas imports) and projects/investments in the revised document. As regards Capacity Building measures, these are very important and knowledge sharing among

CAREC countries and with others (e.g., OECD) should be included. Also measures to address issues that could affect country C because of an agreement between Country A and Country B should be included. In addition the portrayal of studies should be as examples and not as a comprehensive list.

- In terms of implementation of the strategy, it was recognized that to understand the strategy from a practical implementation perspective, presenting the strategy in the 3 dimensions was right. However, importantly, a fourth dimension - Central Asia – Caucasus- Turkey - should be added in the revised document. It was recognized that the countries in particular wanted to see the emphasis on investments and projects, and the strategy document is attempting to bring a balance between the emphasis on Strategy/Policy and investments.
- Costs and Financing should be quantified and presented to the extent possible, as this would give a better idea for policy choices especially those that improve financing viability of the energy sector. Also it would inform private investors and financing institutions as to the opportunities and scale of financing.
- As regards Performance indicators, the set of indicators identified are appropriate. However, the document should provide the rationale as to why only the regional cooperation oriented indicators are chosen.

5. In terms of completing the document, it was agreed that all information to fill the gaps in the current document would be provided by September 22, 2007; and the formal comments by Sep 30, 2007. Based on this, the revised document would be sent to the CAREC secretariat by October 15, 2007 for distribution to the November SOM and MC (in Dushanbe). The respective delegates have agreed to complete information requirements related to specific data provided in Attachment 2 by September 22, 2007. If necessary, Country Consultations on the Strategy would take place between November and March of 2008.

## **B. Country Presentations**

6. All the country delegations present at this meeting made presentations on their respective energy sectors. The focus of PRC presentation was that country's strategy to increase clean and renewable energy share in the energy mix. The focus of Kazakhstan was that country's electricity development plan 2007-2015 approved by Kazakh government in May 2007. Kyrgyz Republic presented the status of the sector, including recent developments such as the Parliamentary approval of private sector participation in generation and distribution. Mongolia's presentation focused on their energy sector development strategy, including some progress made in legal framework, renewable energy promotion, coal development program with a concept to export electricity to China; and development of Egiin Hydropower project. The emphasis of Tajik delegation presentation was on the current status of the sector; and the strategy for the development of the sector, in which regional cooperation, private sector participation, as well as export of electricity are integral. Uzbekistan's presentation focused on the electricity sector and the specific projects oriented towards rehabilitation. Also, Uzbekistan's strategy calls for increasing coal use within the electricity system; as well as hydro; and expanding transmission investments to meet new demands. The Meeting concluded that all these presentations would be very useful for the finalization of the CAREC strategy for Regional Cooperation in Energy.

## **C. Summary of CMERF Activities**

7. ADB's Rune Stroem reported on the outcomes of the CMERF activities held in Ulaanbaatar. During the Capacity Building workshop the participants requested the level of



capacity building raised, by, for example, including sensitive and difficult issues, such as how to value water in domestic as well as trans-boundary situations; and harmonizing regulations for domestic and regional projects. In addition the annual meeting of CMERF confirmed that Kyrgyz Republic would chair CMERF for 2008; and two additional capacity building workshops are planned – one in Baku, Azerbaijan in March 2008; and the other in September 2008, in conjunction with the next CMERF Annual Meeting in Bishkek, Kyrgyz Republic.



**Central Asia Regional Economic Cooperation  
Energy Sector Coordinating Committee (ESCC) Meeting  
14 September 2007; Ulaanbaatar, Mongolia**

**People's Republic of China**

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Deputy Director General  
Power Transmission Regulation Dept.  
State Electricity Regulatory Commission of China

Ms. Wang Lifan  
Program Officer  
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**Kazakhstan**

Mr. Nigmatzhan Makazhanov  
Vice President  
Kazakhstan Electricity Grid Operation Company /JSC "KEGOC/

**Kyrgyzstan**

Mr. Batyrkul Baetov  
Acting State-Secretary  
Ministry of Industry, Energy and Fuel Resources

**Mongolia**

Mr. Ts. Sukhbaatar  
Director General  
Department for Energy Policy and Strategy Planning  
Ministry of Fuel and Energy

**Tajikistan**

Mr. Narzuloev Mahmadvhuja  
Head, Economic Division  
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Mr. Viktor Kim  
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Mr. Raghuveer Sharma  
Central Asia Energy Programs Team Leader  
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Mr. Nikolay Nikolov  
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Mr. V. Krishnaswamy  
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Mr. Sodiq Haitov  
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**Asian Development Bank**

Mr. Rune Stroem  
Head of Energy Operations, Infrastructure Division  
Central and West Asia Department  
Head of ADB Delegation to Annual Meeting

Mr. Bayanjargal Byambasaikhan  
CMERF Team Leader, Infrastructure Division  
Central and West Asia Department

## Attachment 2

**Central Asia Regional Economic Cooperation (CAREC)  
Energy Sector Coordinating Committee (ESCC)  
14 September 2007; Ulaanbaatar, Mongolia**

**Required Information from Member Countries for Finalizing the Strategy Document**

1. Comment on the policy, capacity building and study proposals contained in the draft document.
2. Review Appendices 1, 3 and 4 and:
  - (a) eliminate items already implemented,
  - (b) indicate in respect of ongoing schemes, anticipated completion dates, and incremental investments (without including amounts already spent),
  - (c) include any new scheme (relevant to energy trade or cooperation) not found in the appendices, and indicate for them details of the scheme, expected output and outcome, total cost in 2007 USD terms, completion dates, disbursements in the short, medium and long terms, and sources of finance, and
  - (d) in respect of the schemes already found in the appendices, review and correct the above-mentioned information.

Fill the Performance Indicator Baseline Data and targets for the short, medium and long term in the format given in the document. (Table 8: Performance Indicators for the Regional Energy Cooperation Program, p. 22)

**CAREC Member Country  
Projects and Studies Supported by IFIs**

**ABBREVIATIONS**

ADB	–	Asian Development Bank
CoP	–	Conference of Parties of the UN Framework on Climate Change
DANIDA	–	Danish International Development Agency
DFID	–	Department for International Development (United Kingdom)
DGIS	–	Directorate General for International Cooperation (the Netherlands)
EBRD	–	European Bank for Reconstruction and Development
EIB	–	European Investment Bank
ESMAP	–	Energy Sector Management Assistance Program (World Bank)
GEF	–	Global Environment Facility
IBRD	–	International Bank for Reconstruction and Development (World Bank)
IDA	–	International Development Agency (World Bank)
IDB	–	Islamic Development Bank
IFC	–	International Finance Corporation (World Bank)
IS	–	Installment Sale (Mode of financing used by IDB whereby the client purchases a project at a markup from IDB, paying for it over time without interest)
JBIC	–	Japan Bank for International Cooperation
KFW	–	Kreditanstalt für Wiederaufbau (Germany)
NDF	–	Nordic Development Fund (Denmark, Finland, Iceland, Norway, and Sweden)
PPIAF	–	Public Private Infrastructure Advisory Facility (World Bank)
SECO	–	Secretariat für Wirtschaft (Swiss)
PCF	-	Prototype Carbon Fund
UNDP	–	United Nations Development Program
USAID	–	United States Agency for International Development
USTDA	–	United States Trade and Development Agency
WB	–	World Bank
AKFED		Agha Khan for Economic Development
ARTF		Afghanistan Reconstruction Trust Funds
SGP		Small Grants Program of the Global Environmental Facility

## I. Central Asia and Mongolia

Table IA: Recently Completed<sup>1</sup>

	Agency	Grant Amount (US\$ M)	Date Completed	Description
<b>1. Studies</b>				
<b>AFG</b> Pilot Study for Pro-Poor Electric Power PPP Projects	JBIC		September 2005	To examine the applicability of the Public-Private Partnership (PPP) in pro-poor power project models in Pul-i-Khumri and Bamyan.
<b>AFG</b> Power Transmission	Iran	13.4 (Grant)	Completed	• 2 x132 kV, 212 km transmission line connecting Iran to Herat, 65 MVA.
<b>AFG</b> Power Transmission	Iran	2M (Grant)	Completed	• 2 x 20 kV, 120 km transmission line connecting Iran to Herat, 6 MVA.
<b>AFG</b> Power Transmission	Iran		Completed	20 kV transmission line from Iran to Zaranj, 33 distribution stations.
<b>AFG</b> Power Generation	USAID		Completed	• Feasibility Study for 100 MW thermal plant at Sheberghan using indigenous natural gas.
<b>AFG</b> Power	WB		2004	Power Sector Master Plan
<b>AFG</b> Oil and Gas Sector Report	WB/USTDA A	1.1	2005	The study consists of evaluation options for rehabilitating gas-processing facilities, formulating options for improving the local capability of supplying refined petroleum products and evaluating options for gas supply to Kabul for power and non-power purposes.
<b>AFG</b> Hydrocarbon Resource Survey Report	USTDA/USGS	1.8	2006	The study estimated undiscovered oil and gas reserves in Northern Afghanistan based on available data.
<b>AZE</b> Issues and Options Associated with Energy Sector Reform	WB		March 2005	Issues and optional routes to take to improve operations relating to oil revenue management, the petroleum sector, the gas sector, the power sector, sector regulation, and the environment.
<b>AZE</b> Electricity Sector Social Impact Study	WB		Dec 2004	Report title: "Raising Rates: Short-Term Implications of Residential Electricity Tariff Rebalancing".
<b>AZE</b> Power Sector Study	JBIC	0.1	Oct 2004	Power sector study with weight on technical, reliability, and management issues.
<b>AZE</b> Regulatory Study	PPIAF/WB		2005	Development of the regulatory framework and institutional capacity in electricity, natural gas, and water.
<b>AZE</b> Energy Sector, prioritization of investment	USTDA /EBRD	0.4	2004	Overall review of the sector investment requirements; least cost analysis was not permitted due to the limited data made available.
<b>AZE</b> Support to the Ministry of Fuel and Energy in designing the Country Energy Balance and developing the most effective tools to analyze energy	UNDP	0.1	2003	Redesign of the Energy Balance according to the international IEA rules, to allow a more direct and clear analysis of the energy components in the economy and a comparison of the Azeri data to those of other countries.

<sup>1</sup> Projects or Technical Assistance for which completion report is available.

	Agency	Grant Amount (US\$ M)	Date Completed	Description
networks.				
<b>AZE</b> Natural Gas Sector Strategy	PPIAF/ESMAP/WB		Dec 2002	Overall review of the downstream (domestic) gas sector and recommended actions to ensure its future efficient operation.
<b>AZE</b> Electricity and Natural Gas Restructuring and Regulatory Reform	PPIAF/WB		May 2001	Proposals for reforming and restructuring the energy utility sectors.
<b>AZE</b> Country study & national report FCCC Azerbaijan	UNDP/GEF	0.43	2001	Preparation of the first national communication of the country to the Conference of Parties (CoP) of the UN Framework Convention on Climate Change.
<b>AZE</b> SOCAR Refinery Modernization/Dubendi Port FS	USTDA	0.6	2003	Examined the feasibility of processing crude oil from neighboring countries at State Oil Company's (SOCAR's) refineries.
<b>AZE</b> Shimal Gas Combined Cycle Power Plant Project I	JBIC	181	2003	Building of a 400 MW gas combined-cycle power plant and gas pipeline to feed it.
<b>AZE</b> Socar Restructuring	EBRD/USTDA	0.7	Phase I complete June 2006	Technical Assistance to the State Oil Company of Azerbaijan on restructuring and rationalization of operations. Phase II Grant unlikely.
<b>KAZ</b> Removing barriers to wind power production in Kazakhstan (preparatory phase)	UNDP/GEF	0,35	2003	Overview of wind power perspective in Kazakhstan and preparatory of full-scale project for wind power development.
<b>KAZ</b> Gas Utilization Study	USTDA	0,6	2001	Study weighing the economics of various uses of stranded gas in Kazakhstan.
<b>KAZ</b> Gas Storage Reconstruction Feasibility Study.	USTDA	0.6	2005	Poltoratskoye and Akyrtobe Underground Gas Storage Reconstruction Feasibility Study.
<b>KYR</b> Enabling the Kyrgyz Republic to Prepare its First National Communication in Response to its Commitments to the UNFCCC	UNDP/GEF	0.43	2001/4 (two phases)	Preparation of the First National Communication of the country to the Conference of Parties (CoP) of the UN Framework Convention on Climate Change.
<b>KYR</b> Consolidated Structural Adjustment Credit	IDA/Swiss/DGIS	35	2004	Supports the Government's effort to strengthen its fiscal position and improve the business environment through utility, tax and de-regulation reforms. For the energy sector, it supports the unbundling of the giant power company into four power distribution companies, and separation of generation and transmission companies and increase in tariffs closer to cost recovery levels.
<b>KYR</b> Energy efficiency measures in Kyrgyz Republic: a cost-benefit assessment	Swiss	0.05	2005	Provides the basis for a later decision by SECO to conduct energy-efficiency measures on the demand side.
<b>MON</b> Commercialization of Super-insulated Buildings in Mongolia	UNDP/GEF	2	April 2007	Developed and mainstreamed technologies for insulation of newly constructed building and systems for retrofitting of existing building. Created Energy Conservation Centers.

	<b>Agency</b>	<b>Grant Amount (US\$ M)</b>	<b>Date Completed</b>	<b>Description</b>
<b>TAJ</b> Development of an Energy Conservation Program	ADB	0.12	2003	Investigation of causes of energy waste, and development of an action plan for promoting energy conservation by users.
<b>TAJ</b> Improving Barki Tajik's Billing and Collection Systems	ADB	0.5	2004	Seek ways to improve bill transparency and collection.
<b>TAJ</b> Improvement of the Accounting & Financial Management of Barki Tajik Subsidiaries	ADB	0.4	2005	Provide hands-on assistance for improving procedures in line with International Financial Reporting Standards. Improve Computer and Accounting skills.
<b>TAJ</b> Utility Reform Study	IBRD	Own Funds	2005	Formulation of medium term reforms required in the domestic utility services – electricity, gas and water
<b>TAJ</b> Hydropower Development Strategy	ADB	0.6	2006	Identify export markets, design least cost infrastructure development strategy, and coordinate donor assistance towards optimal hydropower development.
<b>TAJ</b> Enabling the Republic of Tajikistan to Prepare its First National Communication in Response to its Commitments to the UNFCCC	UNDP/GEF	0.43	2003	Preparation of the First National Communication of the country to the Conference of Parties (CoP) of the UN Framework Convention on Climate Change.
<b>TAJ</b> Community Based Micro-Hydropower Development in Remote Rural Areas	ADB	0.8	2004	Studies and pilot projects for establishing community management and development of small-scale hydropower facilities for off-grid areas.
<b>TAJ</b> Rehabilitation of the Kairakkum and Varzob Cascade Hydropower Plants Feasibility Study	USTDA	0.4	Ongoing	Feasibility study on the rehabilitation of the Kairakkum and Varzob Cascade Hydropower Plants.
<b>UZB</b> Energy Needs Assessment	ADB	0.6	2005	Review govt. energy saving plan for power, gas and district heating sectors and produce a comprehensive energy saving plan for the period until 2010.
<b>UZB</b> Off-grid Renewable Energy Development	ADB financed by Denmark.	0.35	2005	Assessment of potential and development of pilot schemes for off-grid generation using renewables in villages and small towns.
<b>UZB</b> Energy Sector Study	JBIC	0.1	2004	Overall review of power sector.
<b>UZB</b> Climate Change Enabling Activity	UNDP/GEF	0.43	2002	Preparation the first national communication of Uzbekistan to the CoP, building in-country capacity to fulfill its commitments to the Convention on a continual basis and building capacity to establish a basis for additional obligations.
<b>UZB</b> Removing Barriers to Energy Efficiency in Municipal Heat and Hot Water Supply	UNDP/GEF	0.2	2003	To prioritize technologies and measures that have potential to improve efficiency and to reduce the greenhouse gas emissions of the municipal heat and hot water supply. Conduct detailed technical, economic, social and environmental feasibility study of the selected technologies, and identify main barriers, energy efficiency measures and elaborate a strategy and a plan for their



	<b>Agency</b>	<b>Grant Amount (US\$ M)</b>	<b>Date Completed</b>	<b>Description</b>
				removal.
<b>UZB</b> Review Studies for National Strategy on Renewable Energy in Uzbekistan	UNDP Nordic Trust Fund	0.91	2006	Project provided information regarding existing barriers and made recommendations to establish adequate conditions and incentives for the development of the renewable energy sector in Uzbekistan.
<b>UZB</b> Energy Sector Study	IBRD	Own Funds	2004	Design of medium term reforms required in the domestic utility services – electricity, gas and water.
<b>UZB</b> Construction of Tashkent Underground Gas Storage	IDB	0.42	2005	TA will prepare technical, environmental and economic studies on the use of gas in cold seasons by Tashkent Municipality. Study is related to the construction of an underground gas storage facility.
<b>UZB</b> PDF-A Promotion of Renewable Energy Sector in Uzbekistan	UNDP/GEF	0.05	2005	This project aims to prepare a Project Brief for a Medium-Size GEF project to elaborate a National Renewable Energy Strategy for Uzbekistan.
<b>UZB</b> Syrdarya Power Plant Feasibility Study	USTDA	0.2	2005	Feasibility study on the modernization of Units 5 & 6 of the Syrdarya Power Plant.
<b>Regional</b> Transmission Modernization Project (UZB/TAJ)	ADB/EBRD	50	2004	Proposed joint ADB-EBRD project to enhance regional energy systems to promote cross border electricity trade and cooperation between UZB and TAJ. The loan has been cancelled in July 2005.
<b>Regional</b> Gas Transmission Improvement Project in CARs	ADB	0.8	2006	Provide necessary technical and institutional support to continue the enhancement of regional gas trade.
<b>Regional:</b> Central Asia Water Energy Nexus – Regional Cooperation in the Syr Darya Basin	IBRD	Own Funds	2003	Provides analysis of the existing water sharing agreement on the Syr Darya and recommends modifications and a new methodology to make the arrangement transparent, objective and functional.
<b>Regional:</b> Assistance in Revising the 1998 Agreement on the Use of Water and Energy of Syr Darya River	ADB/USAID	0.1	2004	Advisory service to revise the 1998 Agreement (in cooperation with USAID).
<b>Regional</b> Study on Intra-Regional Cooperation on Water and Power for Efficient Resource Management	JBIC	0.2	2005	Overall review of cooperation among Amu- and Syr-Darya basin countries in electricity and water sectors, and proposals for improved cooperation.
<b>Regional Electricity Exports Potential Study</b>	WB		2005	Analysis of the electricity export potential of the Central Asian countries within the region and beyond.
<b>Regional</b> Joint Economic Research Program between the World Bank and the Kazakh Government.	WB/ Govt. of Kazakhstan	Own Funds Co-financed by GoKZ	2005	Design of a Framework Agreement and Structure of the Water Energy Consortium, review of relevant legislation in the countries involved and international experience in sharing benefits from joint river basin management.
<b>Regional:</b> Improved Management of Critical Natural Resources	USAID	2.78	2004	Regional study to provide technological and structural solutions to the system changes needed to meet the water and energy needs of the region.
<b>Regional:</b> TAR: 34206	ADB co-financed	4.2	2000-2005	Promotion of renewable energy, energy efficiency, and greenhouse gas abatement.

	Agency	Grant Amount (US\$ M)	Date Completed	Description
	by Netherlands			
<b>Regional:</b> Export Potential of Electricity from CARs	IBRD	Own Funds	2005	The study analyzes the possibilities to significantly enhance electricity trade, both within the Central Asian Republics (CARs) and with external electricity markets. The study outlines trading and investment opportunities in this regard and highlights relevant risks.
<b>Regional Power Transmission Modernization in CARs (Phase II)</b>	ADB	0.8	2005	Second phase study on enhancing power trade among the CARs, and establishing an integrated Central Asia regional wholesale power market.

	Agency	Loan Amount (US\$ M)	Date Completed	Description
<b>2. Projects</b>				
<b>AFG Power Transmission</b>	KfW	EUR 8.7 million, with cofinancing from the EU	Completed	Rehabilitation of 110 kV transmission line from Sarobi to Breshna Kot substation and rehabilitation of s/s, street lighting Kabul.
<b>AFG – Power Distribution</b>	KfW	EUR 2.6 million	Completed	Rehabilitation of 15 kV and low voltage network (lines and transformers) in Kabul, special vehicles and tools.
<b>AFG Power Generation</b>	WB	5.5	2003	Re-commissioning of the 45 MW Kabul NW Thermal Power plant + fuel for first winter
<b>AFG Power Generation</b>	USAID		Completion date expected July 2007	Rehabilitation of Units 1 and 3 (2 x 16.5 MW) + installation of new Unit 2 (18.5 MW) at Kajakai Hydropower plant in Helmand.
<b>AZE Mingechar Power Project</b>	IDB/ EBRD	34.17 (part IS) 12.52 (IDB)	2003	Replacement of four generators, reconstruction of a 120 km (330 kV) line, and installation of a substation at Agcabedi with 110 kV connection to Barda region.
<b>AZE Shimal Gas Combined Cycle Power Plant Project I</b>	JBIC	181	2003	Building of a 400 MW gas combined-cycle power plant and gas pipeline to feed it.
<b>AZE Socar Restructuring</b>	EBRD/ USTDA	0.7	Phase I complete June 2006	Technical Assistance to the State Oil Company of Azerbaijan on restructuring and rationalization of operations.
<b>AZE Derbend-Yashma Transmission Line</b>	IDB	20 (IS)	2005	Installation of a 330 kV transmission line.
<b>AZE AzDRES TPP</b>	EBRD	150	2005	Rehabilitation of AzDRES TPP (2400 MW) heavy fuel oil and gas fired plant. Financing source may change.
<b>KAZ Removing Barriers to Energy Efficiency in Municipal Heat and Hot Water Supply</b>	UNDP/ GEF	0,24	2005	Overview of heating sector of Kazakhstan and preparation of a full-scale project for energy efficiency improvement in the heating sector.
<b>KAZ Karaganda Power project</b>	EBRD	22.7	2002	The proceeds of the corporate loan were used to finance deferred maintenance and upgrade for the privatized power complex in Karaganda, the country's second largest city.
<b>2. Projects (continued)</b>	<b>Agency</b>	<b>Loan Amount (US\$ M)</b>	<b>Date Completed</b>	<b>Description</b>
<b>KAZ Development</b>	USAID	0.7	2005	Loan guarantees for investments through a

Credit Authority for Energy Efficiency Projects				commercial bank for energy projects.
<b>KYR</b> Tariff Policy and Utility Reform Project	DFID	2.8	2004	To advise on an energy tariff policy that ensures long-term financial viability and is consistent with the Kyrgyz Government's social, environmental and commercial objectives.
<b>KYR</b> Oremi Transformers And Substations Manufacturing Facility Project	IDB	8 (IS)	Completed	To produce electric distribution transformers and substations to enable the Kyrgyz Republic use more effectively its basic asset of locally available cheap source of hydro-electric power.
<b>KYR</b> Energy Loss Reduction Program	USAID	0.3	2005	Installation of equipment and associated TA needed to reduce energy losses.
<b>KYR</b> Alai-Batken transmission line	IDB	10.08	end of 2004	Construction of a double circuit 220 kV transmission line from Alai to Batken.
<b>KYR</b> Capacity Building and Environmental Governance Strengthening for Sustainable Development	UNDP	0.77	2007	Main goal is to provide capacity building support to Government in responding to environmental management challenges in the country.
<b>MON</b> Promoting Energy Efficiency in Industry	DGIS	2.5	1/10/2000 – 1/10/2005	Pilot project to set up Energy saving companies to stimulate energy efficiency measures, in co-operation with the Mongolian Chamber of Commerce.
<b>MON:</b> Rehabilitation Choibalsan Power Plant	KfW	13.3	2003	Rehabilitation of boilers, one turbine and the feed water and live steam piping system.
<b>MON</b> Ulaanbaatar Heat Efficiency	ADB	41.6	2005.	Rehabilitation and modernization of district heating network and steam system.
<b>TAJ</b> Improving Water Management	UNDP	0.006	2006	The aim of the project was to support the elaboration of the Water Sector Strategy of the Republic of Tajikistan
<b>UZB</b> Removing Barriers to Energy Efficiency in Municipal Heat and Hot Water Supply	UNDP/ GEF	0.2	2003	To prioritize technologies and measures that have potential to improve efficiency and to reduce the greenhouse gas emissions of the municipal heat and hot water supply. Conduct detailed technical, economic, social and environmental feasibility study of the selected technologies, and identify main barriers, energy efficiency measures and elaborate a strategy and a plan for their removal.
<b>UZB:</b> Clean Energy for Rural Communities in Karakalpakstan	UNDP	0.09 <sup>2</sup>	2003	Installation of photo-voltaic systems (solar panels) to generate electricity for water-pumping and household purposes in remote isolated rural settlements of Karakalpakstan without connection to the National Electric Grid.
<b>UZB</b> Technology Transfer for Local Production of Solar panels for water heating	DANIDA/Nordic TF/ UNDP	0.28 <sup>3</sup>	2005	Technology for production of solar panels for pre-heating water is transferred to 2 local producers. 200 sq.m of solar panels are expected to be installed at one of the utility boiler station (Vodnik) in Tashkent municipality.
<b>UZB</b> Clean Energy for Rural Communities in	UNDP	0.09	2005	The project is a continuation of the Phase 1 and plans to achieve sustainability for future

<sup>2</sup> The funds for the project implementation were provided in form of a grant

<sup>3</sup> The project is implemented in cooperation and financial assistance from DANIDA.

Karakalpakstan – Phase II				procurement and maintenance of solar panels by means of local population and improve the capacity of local authorities/population in utilization of renewable energy for the needs of remote settlements.
<b>UZB</b> PDF-A Promotion of Renewable Energy Sector in Uzbekistan	UNDP/GE F	0.05	2007	This project aims to prepare a Project Brief for a Medium-Size GEF project to elaborate a National Renewable Energy Strategy for Uzbekistan.
<b>UZB</b> Removing Barriers to Energy Efficiency in Municipal Heat and Hot Water Supply	UNDP/GE F	tbd	2005	The project aims to address existing issues to improve energy efficiency of Tashkent municipality heat and hot water supply and distribution system through development of a set of interventions and piloting it at two Tashkent district utility stations.

Table I.B: On-going<sup>4</sup>

	Agency	Grant Amount (US\$ M)	Date Completed	Description
<b>1. Studies</b>				
<b>AFG</b>	JBIC		Ongoing	MOU with the Ministry of Energy and Water and the Ministry of Rural Rehabilitation and Development to collect information and make recommendations for implementing pro-poor rural energy access approaches.
<b>AFG - Power Generation</b>	ARTF		Ongoing	Feasibility study for 280 MW Baghdara Hydropower Project on Panshir River.
<b>AFG - Power Generation</b>	USAID		Ongoing	<ul style="list-style-type: none"> <li>Hydraulic studies in Helmand reservoir, completed with Corps of Engineers Hydraulic Engineering Center in California</li> <li>Preliminary design of service and auxiliary spillways for Kajakai Reservoir;</li> <li>Feasibility study for 50 MW Kajakai II powerhouse at Kajakai Dam.</li> </ul>
<b>AFG Power Transmission</b>	WB	5.5	Ongoing, Expected completion date is end 2006	<ul style="list-style-type: none"> <li>Rehabilitation of 110 kV line from Naghlu to Kabul.</li> </ul>
<b>AFG Hydrocarbon Resource Survey</b>	USTDA/ USGS	1.9	Ongoing - July 2006	Stage I & II of Survey of hydrocarbon resources in Afghanistan using available data.
<b>AZE</b>	UNDP/ GEF	0.405	Ongoing, expected completion date is 2 <sup>nd</sup> quarter of 2009	Preparation of the Second National Communication (SNC) of Azerbaijan under the United Nations Framework Convention for Climate Change (UNFCCC)
<b>AZE</b>	UNDP/ Norway	1.5	Ongoing, expected completion 2010	Promoting Development of Small Hydropower in Azerbaijan
<b>AZE</b>	UNDP/ Norway	0.3	Ongoing, expected completion end of 2008	Capacity Building for Clean Development Mechanism
<b>AZE Capacity Building for State Oil Fund</b>	USTDA	1.9	Phase I complete Phase II Ongoing – June 2008	Technical assistance to assist the State Oil Fund of Azerbaijan in developing its human resources and institutional capacity to better manage these revenues. The second phase of the assistance focuses on software infrastructure.
<b>KAZ Second National Communication to UNFCCC</b>	UNDP/ GEF	0.4	Ongoing	Preparation of the Second National Communication (SNC) of the Republic of Kazakhstan under the United Nations Framework Convention for Climate Change (UNFCCC)..
<b>KAZ Wind Energy Market development in Kazakhstan</b>	UNDP/GE F	2,25	Ongoing	Development of the wind energy market, regulations and legal base for renewable energy, construction of pilot wind energy

<sup>4</sup> Projects or Technical Assistance which have been approved by the IFI.

	Agency	Grant Amount (US\$ M)	Date Completed	Description
				power station for 5MW in Dzungar Gates
<b>KAZ</b> Removing barriers to energy efficiency in heat and hot water supply in housing sector	UNDP/GE F	3,29	Ongoing	Reduction of greenhouse gas emissions and developing the foundation for the sustainable development of these services through (i) reviewing and improving the legal and regulatory framework, with a specific emphasis on the tariff issues and consumption based billing to motivate energy efficiency; (ii) building capacity of the local heat supply companies to develop and manage their services on a commercial basis and to attract financing; (iii) building capacity of the local tenants and home owner associations at the building level.
<b>KAZ</b> Wind Energy Market development in Kazakhstan	UNDP/GE F	2,77	Ongoing	in-situ conservation and sustainable use of biological diversity of global importance to agriculture in two sites in Kazakhstani Tien Shan Mountains. Introduction of adaptive conservation and ecosystem-based management practices to mitigate and prevent threats to wild apple and other fruit habitats by applying new partnerships, conservation tools, information and sustainable livelihoods to mitigate persistent threats.
<b>KAZ Integrated</b> conservation of priority globally significant migratory bird species – demonstration of three pilot sites	UNDP/GE F	8,7	Ongoing	The project will establish the basis for the development and testing of an integrated and participatory approach to the conservation and sustainable use of biological diversity in three priority wetland sites. It will assist the government to meet its commitments under Ramsar Convention
<b>KAZ</b> Conservation and Sustainable Use of Biodiversity in the Kazakhstani Sector of the Altai-Sayan Ecoregion	UNDP/GE F	2,5	Ongoing	The goal of the project is to help secure the globally significant biodiversity values of the Kazakhstan. The project's objective is to enhance the sustainability and conservation effectiveness of Kazakhstan's national PA system by demonstrating sustainable and replicable approaches to conservation management in the protected areas in the Kazakhstani sector of Altai-Sayan eco-region.
<b>KAZ</b> Integrated water resource management and water efficiency plan	UNDP, NORAD, DFID, SIWI	1.0	Ongoing	The project aimed at strengthening the water management organizations through instituting the practice of Integrated Water Management (IWRM). This is done through assisting the Committee for water resources to prepare the first National IWRM and Efficiency plan and 8 Basin IWRM Plans for River Basin Organizations. The project also works toward achieving the MDGs for Water through developing the strategy for Achieving the MDGs for Water Supply and Sanitation.
<b>KAZ</b> Network Infrastructure Regulatory Development	EBRD	1.0	Ongoing	Review and improvement of existing tariff methodologies incl. power sector against international practice. Implementation of revised methodologies
<b>KYR</b> Improvement Of Production Capacity Of	IDB	0.262	On-going	A study to enhance and improve the product quality of the OREMI project through quality

	<b>Agency</b>	<b>Grant Amount (US\$ M)</b>	<b>Date Completed</b>	<b>Description</b>
Oremi Transformers And Substations Manufacturing Facility Project				development and international certification of products. This will open new markets for Oremi products in the neighboring countries.
<b>KYR</b> Southern Kyrgyzstan Transmission Upgrade Feasibility Study	USTDA	0.2	Ongoing-2007	Feasibility study on the decongestion of the 220 kV transmission network in southwest Kyrgyzstan.
<b>KYR</b> Power and District Heating Rehabilitation	IDA /ADB/ DANIDA/N DF/ SECO	62.7	On-going	Rehabilitation of Bishkek heat generation and distribution system, improvement of electricity transmission lines and metering.
<b>KYR</b> Second National Communication to UNFCCC	UNDP/ GEF	0.4	On-going	Preparation of the Second National Communication (SNC) of the Republic of Kyrgyzstan under the United Nations Framework Convention for Climate Change (UNFCCC).
<b>MON</b> Renewable Energy Development in Small Towns and Rural Areas	ADB financed by Denmark	0.4	On-going	Assess possibilities and develop strategy for providing off-grid renewable energy to isolated areas.
<b>MON</b> Energy Sector Market Structure Review and Tariff Design	PPIAF	.15	On-going	Review current market structure and propose a new tariff system.
<b>MON</b> Private sector participation in the power sector	EBRD Mongolia co-operation fund	0.5	2003-2006	To assist reforms in the power sector of Mongolia by providing the State Property Committee of Mongolia with an advisor to define and implement a strategy for private sector participation in the power sector.
<b>MON</b> Social Impact of Energy Sector Reforms	WB/ ESMAP	0.1	On-going	Assess the distributional impact of sector reforms and proposed mitigation mechanisms.
<b>MON</b> Infrastructure Strategy	WB	0.2	On-going	Assess Infrastructure requirements and delivery mechanism to sustain Mongolia's Economic Growth and Poverty reduction plans.
<b>MON</b> Energy Efficiency Program	WB/ ESMAP/USAID	0.1	On-going	Assess priority energy efficiency market and use of GEF and CDM mechanisms.
<b>TAJ</b> : Community Based micro hydropower supply in remote rural areas	ADB/PRF	0.8	Ongoing 2007	Construction of two micro-hydropower schemes in Rasht and Novobad districts.
<b>TAJ</b> Introducing International Accounting Standards at Baki Tajik	ADB	0.5	Ongoing	Introduction of modern accounting standards, training, and computerization of accounting.
<b>TAJ</b> Reconstruction of 220/500 kV switching station at Nurek Hydropower Plant	KfW	1.1	Under tender	Feasibility study on various options and technical/economic/ecological optimization for reconstruction of the 200/500 kV switching station and 500 kV evacuation line of Nurek hydropower station (in cooperation with ADB and Islamic Development Bank).
<b>TAJ</b> Development of Local Rural Renewable Energy Sources for Productive Use	UNDP/GE F	1	Beginning planned for mid-2006	The goal of the project is to improve the living conditions of the rural population by promoting the environmentally and financially sustainable use of local

	Agency	Grant Amount (US\$ M)	Date Completed	Description
				renewable energy resources that provide opportunities for income generation and essential social services.
<b>TAJ</b> Second National Communication to UNFCCC	UNDP/ GEF	0.405	On-going	Preparation of the Second National Communication (SNC) of Tajikistan under the United Nations Framework Convention for Climate Change (UNFCCC).
<b>TAJ</b> Central Asia Power Sector Development Program	USTDA	0.8	On-going	Feasibility study on a Central Asia – South Asia power corridor, including: 1) 220 kV line from Tajikistan to Afghanistan, 2) 500kV line from Kazakhstan to Pakistan, and 3) Hydropower plant in Tajikistan.
<b>UZB</b> Small-scale Hydropower Development	JBIC	0.5	On-going	Study to develop small-scale hydropower potential utilizing the existing irrigation facilities. Basic design will be drawn for selected project locations.
<b>Regional</b> Water Energy Dialogue	IBRD	Own Funds	On-going	Advisory services and facilitation of energy dialogue among the CA countries, incl. CAREC forums .
<b>Regional</b> Central Asia-South Asia Regional Electricity Market Techno-economic feasibility study	ADB		Ongoing	Techno-economic feasibility The study assesses (i) the availability and cost of power supply from Central Asia (Tajikistan, Kyrgyzstan) to be exported to Pakistan through Afghanistan, (ii) power demand in Pakistan and cost of alternatives to meet this demand, and Afghanistan's ability to take and utilize additional power; (iv) transmission options, routes and costs between Central Asia and Pakistan, (v) Environmental and Social Impact assessments
<b>Regional</b> Central Asia-South Asia Regional Electricity Market Techno-economic feasibility study	WB (PPIAF, ESMAP)		Ongoing	Design of Institutional, Financial, Risk Mitigation and Legal Framework Development of the export transmission system infrastructure to export at least 1000 MW of electricity from Tajikistan and Kyrgyzstan to Pakistan via Afghanistan, with supply to Afghanistan;
<b>Regional</b> Feasibility Study on Interconnection of ECO (Economic Cooperation Organization) Countries Power System	IDB	0.406	On-going	Study of the feasibility of interconnecting the existing power networks of ten ECO countries, in order to promote trade of electrical energy between ECO member countries and promote technical cooperation among the IDB member countries for the mutual benefit and development.
<b>REG</b> Environment and Security Programme in Ferghana Valley, Eastern Caspian and Amu-Darya sub-regions	UNDP, UNEP, UNECE, OSCE, NATO, REC-CEE	5,0	Ongoing	Reduction of env. and human security risks, and integration of env. and security thinking through increased cooperation between and within countries. The ENVSEC program has three sub-programs, with specific thematic priorities related to cooperation between the countries on water management, hazardous pollution, prevention of natural disasters and adaptation to climate change.



	Agency	Grant Amount (US\$ M)	Date Completed	Description

<b>2. Projects</b>				
<b>AFG</b> Loan 1997-AFG(SF): Emergency Infrastructure Rehabilitation and Reconstruction Project - Power Infrastructure Component	ADB	41	Ongoing Expected completion in 2007.	Construction of double circuit 220 kV line from Hairatan to Naibabad to Mazar and from Naibabad to Pul-e-Khumru, plus construction of Naibabad switching station.
<b>AFG</b> Loan 2165-AFG(SF)/Grant 0004-AFG: Power Transmission and Distribution Project	ADB	50	Ongoing. Expected completion in 2008	(i) <u>Northern Area</u> : 20 km 110 kV transmission lines from Shekanbandar to Imam Sahib; substation at Imam Sahib, Sarepul, Taluqan, and Shekanbandar (switching station); distribution network in Khan Abad, Imam Sahib and Taluqan; electrification kits (ii) <u>Central and Eastern Area</u> : 75 km single circuit 110 kV from Naghlu to Jalalabad, and 17 km double circuit 110 km from Mehtarlam to Jalalabad; substations at Jalalabad, Mehtarlam, Qarghayi and Surobi; distribution networks in Jalalabad and Mehtarlam; electrification kits.
<b>AFG</b> Loan and Grant for Hydro Power and Transmission Project	ADB/ IDB	100	Approved May, 2007 – Financing Agreement to be signed	<ul style="list-style-type: none"> <li>• Hydropower component: 3 to 4 small hydro schemes, depending on the result of TA 4662-AFG.</li> <li>• Transmission component: <ul style="list-style-type: none"> <li>(i) 220 kV double circuit Pul-e-Khumru – Kunduz – Shekanbandar to be financed by ADB</li> <li>(ii) ,Substations in Baglan and Kunduz to be financed by IDB</li> <li>(iii) Upgrading of Load Dispatch Center in Kabul.</li> </ul> </li> </ul>
<b>AFG</b> Power Transmission	WB	5.5	Expected completion date is end 2007	<ul style="list-style-type: none"> <li>• Rehabilitation of 110 kV line from Naghlu to Kabul.</li> </ul>
<b>AFG</b> Power Generation	KfW / ARTF	Eur 17.5M (KfW) \$ 4 M (ARTF)	Ongoing, Expected completion date is Nov 2007	<ul style="list-style-type: none"> <li>• Rehabilitation of Mahipar HPP, 2x22 MW and Sarobi, 2x11 MW.</li> </ul>
<b>AFG</b> – Power Transmission Lines	KfW	EUR 17 million	Ongoing. Expected completion date is Oct. 2007	Rehabilitation and upgrade of substations in Mazar and Pul-e-Khumri as co-financing to the ADB transmission project from Hairatan to Pul-e-Khumri.
<b>AFG</b> Power Generation	ARTF/ KfW	Eur7.5 million(KfW) \$4M(ARTF)	Ongoing	<ul style="list-style-type: none"> <li>• Rehabilitation of Mahipar Hydropower station, 2 x 22 M.W</li> <li>•</li> </ul>
<b>AFG</b> Power Generation	KfW / ARTF	Eur 20.5M (KfW) \$ 4 M (ARTF)	Ongoing, Expected completion date is	<ul style="list-style-type: none"> <li>• Rehabilitation of Mahipar HPP, 2x22 MW and Sarobi, 2x11 MW.</li> <li>•</li> </ul>

			March 2008	
<b>AFG – Decentralized Power Generation</b>	KfW	EUR 10.5 M	Ongoing, expected completion 2012	<ul style="list-style-type: none"> <li>• Rehabilitation of Chak-e-Wardak hydropower plant, 3 x 1.1 MW.</li> <li>• Rehabilitation / construction of small hydro power station(s) in northern provinces</li> </ul>
<b>AFG – Power Transmission Lines</b>	KfW	EUR 22.5 million	Ongoing. Expected completion date is mid 2008	<ul style="list-style-type: none"> <li>• Rehabilitation and upgrade of substations in Mazar and Pul-e-Khumri as co-financing to the ADB transmission project from Heiratan to Pul-e-Khumri.</li> </ul>
<b>AFG Power Generation</b>	ARTF /WB	20	Ongoing. Expected completion in 2010	<ul style="list-style-type: none"> <li>• Rehabilitation of Naghlu Hydropower station, 4 x 25 MW.</li> </ul>
<b>AFG Power Generation</b>	ARTF/ WB	20	Ongoing. Expected completion in 2010	<ul style="list-style-type: none"> <li>• Rehabilitation of Naghlu Hydropower station, 4 x 25 MW.</li> </ul>
<b>AFG Power Generation</b>	India	80 (Grant)	Ongoing. Expected completion date is 2009	<ul style="list-style-type: none"> <li>• Rehabilitation of Salma Hydro – Hari Rud River, 42 MW,</li> </ul>
<b>AFG – Power Transmission</b>	India	100 (Grant)	Ongoing. Expected completion date is October 2007	Double circuit 220 kV transmission line from Pul-e-Khumri to Kabul, plus new 220 kV substation in Chimtallah.
<b>AFG Power Generation</b>	USAID	80 (a year)	Ongoing, but about to be transitioned to GOA	<ul style="list-style-type: none"> <li>• Provision of fuel, spare parts and technical assistance to operate the Kabul NW Power Plant.</li> </ul>
<b>AFG Power Generation</b>	USAID	about \$20 million in fuel plus the purchase of the units in Kandahar.	Ongoing, but about to be transitioned to GOA	<ul style="list-style-type: none"> <li>• Operation and maintenance of diesel gen sets and fuel in Kandahar, Lashkargah, and Qalat.</li> </ul>
<b>AFG – Power Generation</b>	USAID	8	To be initiated in 2006	Rehabilitation of 11.5 MW Darunta hydropower plant in Jalalabad.
<b>AZE Khachmaz Electric Sub-station and Transmission Line</b>	IDB	13.508 (IS)	Recently approved. On-going	The objective of the project is to provide quality and reliable power supply to the northeastern region of Azerbaijan. The project scope includes the expansion of existing substation at Khachmaz to the higher (330 KV) voltage level, a 330 KV spur to connect the substation with the existing 330 KV transmission line, and a new 24 km, 110 KV transmission line to deliver the electricity to the load center in the region.
<b>AZE AZDRES Power Plant Rehabilitation</b>	EBRD	115	Ongoing. Agreement signed Nov. 2006	The objectives of the proposed project are to increase the plant's overall efficiency to bring the operation back to its design capacity and to enhance its reliability.
<b>AZE Capacity Building for State Oil Fund</b>	USTDA	1.1	Phase I complete June 2006	Technical assistance to assist the State Oil Fund of Azerbaijan in developing its human resources and institutional capacity to better manage these revenues. The first phase of

				the assistance focuses on reviewing and refining current asset and risk management guidelines and policies.
<b>AZE</b> Shimal Gas Combined Cycle Power Plant Project (unit 2)	JBIC	250	On-going	Construction of a 400 MW gas combined-cycle power plant to replace the existing unit.
<b>AZE</b> Power Transmission Project	IBRD	48	Signed 2005, ongoing	Supply and installation of an energy management system ("SCADA") for the power transmission system, and transmission system rehabilitation.
<b>AZE Construction of State Thermal Power Plant – Imishli power transmission line</b>	KfW	30 mln Euros	Ongoing. Agreement signed June, 2007	Construction of 195 km 330 kW power transmission line to improve reliability of power supply in the Greater Baku area and south of the country.
<b>AZE</b> Mingechaur Hydro Power Project (Phase-II)	IDB	80	Approved in 2007, Financing Agreement to be signed	Increasing generation capacity of the existing Mingechaur Hydro Power Project through replacement and upgrading of turbines, generators, substations and control room equipment.
<b>KAZ</b> Electricity Transmission Rehabilitation	IBRD/ EBRD	140 45	On-going	Restructuring of KEGOC into financially viable grid company; refurbishment of transmission substation, modernization of dispatch control systems and development of competition through spot market and equal access to transmission network.
<b>KAZ</b> KEGOC North South Power Transmission Project	EBRD Syndicated loan	60	Ongoing	The project finances the 1 <sup>st</sup> section construction of the new North-South 500kv electricity transmission line to address energy and peak supply deficit in southern Kazakhstan.
<b>KAZ</b> KEGOC North South Ekibastuz-YukGRES Power Transmission Project	EBRD Syndicated loan	87.8	Ongoing	The project finances the 2 <sup>nd</sup> and 3 <sup>rd</sup> sections of the new North-South 500kV electricity transmission line.
<b>KAZ</b> KEGOC North South Power Transmission Project – 2 <sup>nd</sup> phase	IBRD	100	Approved by WB Board on Oct.27, 2005	Construction of a new 475 km, 500 kV single circuit overhead electricity transmission line from substation Ekibastuz (1,150/500 kV) to substation Agadyr (500 kV), including a fiber optic communication line.
<b>KAZ</b> Uzen Oil Field Rehabilitation Project	IBRD	109	On-going	The project consists of the following components: 1) physical investments including subsurface rehabilitation (provision of equipment, spare parts and chemicals), surface facilities rehabilitation and environmental protection and remediation; 2) physical investment implementation support comprising well testing and logging services, contract work over services and consulting services; and 3) organizational development support involving the strengthening of Uzenmunaigas management through improvements in its financial and operating information systems and the improvement of its financial management and accounting practices and systems.
<b>KAZ</b>	EBRD	87.8	Loan signed	Construction of the third phase of the North South Transmission line.

<b>KAZ</b> Kazakhstan- wind power market development initiative	UNDP/ GEF/ Kaz Govt	7.27 (of which 2.55 in grant)	On-going	The project will facilitate the construction of a pilot 5 MW wind farm in South of Kazakhstan and support the national wind power program elaboration.
<b>KYR</b> Naryn III Electricity Losses Reduction Project / Power and District Heating Rehabilitation	IDA/ KfW/ Swiss	20.9, of which 9.6 in grant	On-going	Technical losses reduction measures in Naryn area; re-metering in pilot areas and billing and accounting systems in four distribution companies.
<b>KYR</b> Consolidated TA	IDA	5	On-going	Supports CSAC in the regulatory reform of the gas and power sector, as well as restructuring and privatization.
<b>KYR</b> Advanced measures for the distribution system of Severelektro	KfW	12.5	On-going till 2008	Electronic metering of Alamendin district and surrounding areas and selective rehabilitation of the distribution system in advance of a concession (in cooperation with World Bank and Seco financed accounting system).
<b>KYR</b> Aigul-Tash to Karabulak Transmission Line and Sub-stations Project	IDB	12	Approved in April 2007 – Financing Agreement signed during the official visit of the President IDB to KR July 4, 2007	Single circuit 110 kV overhead transmission line from existing 220/110 kV Aigul Tash Sub-station to Karabulak and Samat Sub-stations, Construction of 110 / 35/10 kV Karabulak sub-station and renovation of existing 110 /35/10 kV Samat sub-station.
<b>KYR</b> Promotion of Micro hydropower generation for sustainable development of mountain communities	UNDP/ GEF/SG P	0.25	Ongoing since September 2005	Pilot installation of units and assessment of production capacities in the country with further production of an experimental lot.
<b>MON</b> Energy Project	WB	30	On-going	Commercialization of electricity distribution business, loss reduction and improved cash collection. Preparation of PSP in distribution business.
<b>MON</b> Ulaanbaatar Thermal Power Plant No. 4 Rehabilitation (2)	JBIC	60	On-going	Rehabilitation of boilers of the Ulaanbaatar Thermal Power Plant No. 4
<b>TAJ</b> Pamir Project	IDA / IFC/ AKF/ Swiss	31.4 of which 5m grant	On-going	Improve supply of electricity in the Gorno Badakshan Oblast through private sector involvement and investments.
<b>TAJ</b> Power Rehabilitation	ADB/ IDB/ Swiss	62.44 of which 8m grant	On-going 2008	Proposed project to rehabilitate and reinforce war damaged power transmission and distribution facilities, and rehabilitate Nurek and Central Hydropower plants.
<b>TAJ</b> Energy Loss Reduction Project	IDA	18	On-going	Proposed project has the objective to assist in reducing the commercial losses in the electricity and gas systems, and lay the foundation for the improvement of the financial viability of the electricity and gas utilities in a socially responsible manner.
<b>TAJ</b> Financing for Mini Hydropower Plants in Rural Areas	IDB	9.178	On-going	The project aims at reducing the overall energy shortage in the rural areas of Tajikistan through building 8 mini hydropower schemes.
<b>TAJ:</b> Power Rehabilitation Project, II	ADB/	50	Approved 2007	Implementation of the availability, reliability and quality of electric supply in Tajikistan: (i) a

	IDB/ OPEC			national component by rehabilitation of Golovnaya power plant and (ii) rehabilitation of transmission and distribution networks in South Tajikistan.
<b>TAJ</b> Development of Local Rural Renewable Energy Sources for Productive Use	UNDP/ GEF	0.42 available 1.2 to be fundraised	On-going since Sept. 2006	The goal of the project is to improve the living conditions of the rural population by promoting the environmentally and financially sustainable use of local renewable energy resources that provide opportunities for income generation and essential social services.
<b>TAJ Follow-up on</b> Transboundary River Conference	UNDP	0.21	On-going	The objective of the project is to provide a coordinated and substantial support to the Government of Tajikistan to organize and conduct the International Conference on Regional Cooperation in Transboundary River Basins in Dushanbe in May 2005 and follow-up activities. The main goals of the Conference are to increase regional cooperation management of transboundary river basins, establish dialogue among Central Asian countries on management of transboundary river basins, and, based on international experience, work out recommendations to resolve the current issues.
<b>TAJ, UZB</b> Social protection under energy sector reforms	WB/ ESMAP	0.35	On-going	Design of Effective social protection schemes under energy sector reforms in Tajikistan and Uzbekistan.
<b>UZB</b> Syrdarya Power Plant Rehabilitation Project	EBRD	27.8	On-going	This sovereign loan was signed in 1997 to finance the rehabilitation and modernization of the Syrdarya Power Plant, improve the generation efficiency and introduce modern turbine design. The project has been fully disbursed.
<b>UZB</b> Syrdarya-Sogdiana Transmission Line	IDB	29.3 (combined lease, loan, IS)	Agreement signed. To be declared effective.	Single circuit 500 kV overhead transmission line from existing 3,000 MW Syrdarya thermal power station to the under construction 500/200 kV Sogdiana sub-station. Includes facilities for control, communication and necessary interconnection equipment at both ends of transmission line. Transmission line design capacity is 800 MW.
<b>UZB</b> Tashkent Thermal Power Plant Modernization Project	JBIC	226	On-going	Construction of a new 370 MW combined cycle gas power plant to replace the existing unit.
<b>UZB</b> Assisting the Development of Biogas Technology in Uzbekistan	UNDP/ TTF	0.170	On-going	The project will undertake a feasibility study and implement a pilot and demonstration biogas plant to provide community-based access to energy and increased income. It will carry out monitoring of Biogas plant operation. It will enhance public awareness about biogas technology applications/benefits for the needs of rural population. The project will also study possible access to energy investment financing through local banking institutions, Clean Development Mechanism and private partnership.
<b>UZB</b> Improving Power and Heat Supply in Rural Health Clinics of Uzbekistan	UNDP	0.05	On-going	The Project will undertake a feasibility study of options to improve power and heat supply systems in rural health clinics. In particular, the study will explore if modern energy-efficient and renewable energy technologies can

				integrate into existing conventional energy infrastructure. The study will examine cost effectiveness of the proposed technologies, their reliability, opportunities for local producers to provide these technologies and after-sale service, and other related issues. As a result of the study, the project will present recommendations on optimal solutions for rural health clinics in different provinces of the country.
<b>Regional.</b> Central Asian Gateway	UNDP	0.2	On-going	The Central Asian Gateway project aims at facilitating development and integration in the countries of Central Asia through promoting networking among socio-economic research institutions and other development stakeholders, knowledge sharing and experience exchange focusing on the issues of good governance, regional integration and private sector development.
<b>Regional.</b> Economic Policy Institutes Network	UNDP	0.35	On-going	Economic Policy Institutes Network (EPIN) was initiated by the UNDP Regional Bureau for Europe and CIS in 2004. This project supports the development of economic policy institutes (EPI) in European and CIS countries in transition, with particular emphasis on low and middle income countries. The principal goal of the initiative is to develop the capacity of economic policy institutes in the target countries so as to provide these countries with independent, sophisticated voices in policy issues
<b>MON</b> Renewable Energy Project I	KfW	6.09 million EUR Grant	On-going	Rehabilitation of Bogdyn Hydropower Plant (near Uliastai Zavkhan Aimag) + Rehabilitation of low voltage grid in Uliastai
<b>MON</b> Energy Sector Program I	KfW	12.6 million EUR grant	On-going	Measures in the Central Energy System (e.g. Load Dispatch Centre, rehabilitation of switchyards)
<b>MON</b> Energy Efficiency Project	KfW	10.5 million EUR loan	On-going	Darkhan Thermal Power Plant: Installation of a new turbine and aux. equipment

Table I.C: Pipeline<sup>5</sup>

	Agency	Grant Amount (US\$ M)	Timing	Description
<b>1. Studies</b>				
<b>AZE</b> A for Project on Removing barriers to sustainable and commercial Wind Energy Development in Azerbaijan	UNDP/GEF	0.045	2006	The outcome of the PDF A will be development of a medium-sized project aiming to reduce emissions of CO <sub>2</sub> through a comprehensive barrier removal process focused on the development of power sector policy and regulatory frameworks supportive of wind energy.
<b>AZE</b> Promoting development of small hydropower in Azerbaijan	UNDP	1.5	2006	The main outcome of the project will be to achieve a healthy investment environment for small/medium hydropower applications in Azerbaijan. This will be done by revising the legal system, promoting investments and building one or more pilot projects.
<b>AZE</b> Gas System Restoration in Regional Towns	ADB/JSF	0.5	2006	Rehabilitate and replace gas transmission and distribution network in 5 regional centers.
<b>KAZ</b> : Almaty Consolidated Support	ADB	0.1	2006	Will provide critically needed infrastructure modernization and rehabilitation for electricity and heat system.
<b>KYR</b> : Datka – Kemin 500kV Transmission Line	USTDA	0.5	2007	Feasibility study on the construction of a 500kV transmission line from Datka substation in the south to Kemin substation in the north.
<b>MON</b> : Energy Access	IDA/GEF	10	2007	The project will increase energy access among rural consumers.
<b>MON</b> : District Heating Sector Reform	IDA/GEF /Donors	40	2008	The project will facilitate efficient supply and consumption of heating services in main urban centers and Aimag centers.
<b>TAJ</b> : Support to the development of small hydro power strategy	UNDP	0.005	2007	The project aims to provide support for elaboration of the strategy for small hydro power
<b>Regional</b> : Trans-Caspian Oil and Gas Pipelines Feasibility Study	USTDA	1.7	Aug 2007	Feasibility Study on the construction of oil and gas pipelines from Kazakhstan to Azerbaijan across the Caspian.

<sup>5</sup> Pipeline project and TA dates reflect the anticipated date of approval.

	Agency	Loan Amount (US\$ M)	Timing	Description
<b>2. Projects</b>				
<b>AFG</b> Loan and Grant for Hydro Power and Transmission Project	ADB	100	Expected approval date January 2007	<ul style="list-style-type: none"> <li>Hydropower component: 3 to 4 small hydro schemes, depending on the result of TA 4662-AFG.</li> <li>Transmission component:               <ul style="list-style-type: none"> <li>(iii) 220 kV double circuit Pul-e-Khumri – Kunduz – Shekanbandar, including substation in Baglan and Kunduz</li> </ul> </li> </ul> Upgrading of Load Dispatch Center in Kabul.
<b>AFG</b> – Power Generation	KfW	Eur 3 M		Rehabilitation of Chak-e-Wardak hydropower plant, 3 x 1.1 MW.
<b>AFG</b> – Power Generation	India			<ul style="list-style-type: none"> <li>Microhydel project in Bamiyan with AKDN (Aga Khan Development Network)</li> </ul> Solar electricity and rain harvesting for 100 villages.
<b>AFG</b> Power Transmission	USAID	35		<ul style="list-style-type: none"> <li>Rehabilitation of the 110 kV transmission line from Kajakai to Kandahar and Lashkar Gah, South East Transportation System (SETS).</li> </ul>
<b>AFG</b> Power Transmission	USAID	35		Construction of new 220 kV transmission line from Kajakai to Kandahar. (SETS).
<b>AFG</b> Power Transmission	WB	65	contract award pending; estimated completion date end 2008	<ul style="list-style-type: none"> <li>Rehabilitation of Kabul City Distribution Network</li> </ul>
<b>AFG</b> Second Emergency Power Rehabilitation Project	ARTF	80 (Grant)	Proposal under consideration by ARTF	(iii) Rehabilitation of Mazar City Distribution Network.
<b>AZE</b> Gas System Restoration in Regional Towns	ADB	25	2007	TBD
<b>AZE</b> Renewable Energy Development	ADB	40	2007	Assist in the rehabilitation of energy infrastructure areas
<b>AZE</b> Wind energy development	UNDP/GEF	3	2008	Not developed yet
<b>AZE</b> Rehabilitation of Substations	IDB	34	2008	The project will enable reliable power supply to local population and industries by rehabilitating existing substations in various regions of Azerbaijan.
<b>AZE</b> Derbend-Yashma Transmission Line	IDB	30	2009	The project will increase the electricity trade between the Russian Federation (Derbend) and Azerbaijan (Yashma) through increasing the existing power transmission capacity.
<b>KAZ</b> Almaty Power Consolidated Support	ADB	75	2006	Will provide critically needed infrastructure modernization and rehabilitation for electricity and heat system for Almaty
<b>KAZ</b> Ekibastuz Power Station	IDB	75	2008	Increase the power generation capacity to meet the growing demand for electricity.
<b>KAZ</b> North-South Transmission Line (Phase-II)	IDB	40	2009	The project will increase the power transmission capacity of the National Electricity Grid of Republic of Kazakhstan. It will also increase the regional electricity trade among the Central Asian Countries and Russia.



	<b>Agency</b>	<b>Loan Amount (US\$ M)</b>	<b>Timing</b>	<b>Description</b>
<b>KYR</b> Energy Sector Reform Project	IDA	15	2007	Support implementation of Private Sector Participation in the whole energy distribution sector. Likely cofinancing by other IFIs.
<b>KYR</b> Renewable Energy for rural development	UNDP/ GEF	3.5	2006	Brief development stage
<b>KYR</b> Conservation of Endemic Ichthiofauna of the Issyk-Kul Lake Basin	UNDP/ GEF	1.9	2008	Under development
<b>KYR</b> Improving energy conservation of heat and hot water supply in the municipal district heating in Bishkek.	UNDP/ GEF	0.6	2007	Under development
<b>KYR</b> Reducing GHG Emissions through Support for Renewable Energy in Kyrgyzstan	UNDP/ GEF	1	tbd	To set up a leasing revolving ecological credit Fund of development and support of wide application of renewable energy.
<b>KYR</b> Energy Efficiency in the Power Sector	KfW	27	Tendering in 2008	Different Components in order to reduce technical and non-technical Losses in the Area of Bishkek (Meters, cable, breakers etc.)
<b>KGZ</b> 110kV Transmission Line (Batken-Karabulak)-Phase-II	IDB	6.25	2009	Provide reliable and sustainable supply of electricity to the consumers in the Karabulak district in the southern region of Kyrgyz Republic.
<b>TAJ</b> Second Pamir private power project	WB/IFC/ AKFED	tbd	tbd	The Project would comprise: (a) construction of a 14 MW hydro capacity near Khorog (the main city and Oblast capital); (b) rehabilitation of small hydro power plants in remote locations; (c) implementing non electricity based space heating solutions (e.g., biomass and locally available coal); (d) rehabilitation of transmission and distribution networks; (e) construction of tie lines across the Tajik-Afghan border to supply villages on the Afghan side with electricity initially in the summer months; and (f) Technical assistance and capacity building..
<b>TAJ</b> : Power Rehab, II	ADB	23	2006	Implementation of the availability, reliability and quality of electric supply in Tajikistan: (i) a national component by rehabilitation of Golovnaya power plant and (ii) rehabilitation of transmission and distribution networks in South Tajikistan.
<b>TAJ</b> Renewable energy	UNDP/ GEF	1.5	2007	Constructing a small HPP will supply people with hydropower, improve social conditions, and promote the economic development.
<b>TAJ</b> Gas counters	UNDP/ GEF	2	2007	To provide a reliable control of gas consumption by the population.
<b>TAJ</b> Construction of Rogun Hydropower Plant	IDB	30	2008	To supply electricity to southern region of Tajikistan and surplus, if available, to be exported to neighboring Afghanistan.

	<b>Agency</b>	<b>Loan Amount (US\$ M)</b>	<b>Timing</b>	<b>Description</b>
<b>UZB</b> Rural Renewable Energy Development	ADB	20	2006	Will develop 5 small hydropower plants on existing irrigation infrastructure that will annually generate about 150 GWh of clean and renewable energy in rural areas; will enhance capacity of the project implementing and executing agencies to plan, design, implement and operate similar small hydropower plants in the country.
<b>UZB</b> Energy Transparency and Efficiency Project	ADB	25	2006	Upgrading bulk energy metering and end user metering arrangement for electricity and gas supplies.
<b>UZB</b> Medium Size Project On-grid renewable energy for decentralized power supply in Uzbekistan	UNDP/ GEF	0.95	2007	The project will assist Uzbekistan in exploiting its domestic renewable energy (RE) potential, primarily wind, in order to decrease the reliance of the national power sector on fossil fuel, reduce regional imbalances in power distribution, and promote cost effective decentralized power supply. To achieve this objective the project will focus on removing key institutional, legal, technological and financial barriers to grid connected renewable power production and facilitating implementation of the first wind power project (2 MW).
<b>UZB</b> Medium Size Project UZBEKISTAN/Solar Water Heating Market Transformation and Strengthening Initiative	UNDP/ GEF	0.95	2007	Project strategic objective is to reduce GHG emission from heat and hot water supply sector in Uzbekistan by promoting market for solar water heating (SWH) technology both on demand and supply side
<b>UZB</b> Medium Size Project Promotion of Renewable Energy Sector in Uzbekistan	UNDP/ GEF	0.95	2007	Project will assist the Government of Uzbekistan to elaborate its National Renewable Energy Strategy that will serve as a legal framework and base for the promotion and development of the use of renewable energy in Uzbekistan.
<b>UZB</b> Sustainable Transport and Energy Efficiency	UNDP/ GEF	0.05	2007	Project will prepare a Project Brief for a Medium-Size GEF project aiming to improve efficiency of transport sector.
<b>UZB</b> 500kV Sogdiana-Talimarjan Transmission Line	IDB	60	2009	Construction of a 500 kV Transmission Line from Syrdarya Thermal Power plant to Sogdiana and onwards to Talimarjan to provide electricity to consumers in the south western region of Uzbekistan and also to enable export of electricity to Afghanistan through Turkmenistan power lines.
<b>Regional</b> Power Transmission Modernization in CARs, Phase II	ADB	70	2006	Proposed project to improve operation and efficiency of the regional power transmission system and create basis for future wholesale regional power market.
<b>Regional</b> Transmission Improvement Project in CARs, Phase II	ADB	80	2006	Proposed project continues the worked started in the Phase I (2004) project. Includes rehabilitation of Nurek switchgear and transmission lines.
<b>Regional</b> Energy Markets Assistance Program (REMAP)	USAID/ US Energy Association		June 2006	The program has three components: 1. Central Asia Regional Electricity Market Development. 2. Support for Kazakhstan Electricity Association's Advocacy related to electricity market development .3. Assistance to electricity sector reform initiatives in Tajikistan and Kyrgyzstan.

**II. Peoples Republic of China**  
**Table II.A: Recently Completed**

	<b>Agency</b>	<b>Grant Amount (US\$ M)</b>	<b>Timing</b>	<b>Description</b>
<b>1. Studies</b>				
TA Cluster to PRC for the Promotion of Clean Energy	ADB	3.5	Completed 2004	Assistance to design a comprehensive program for clean energy policy.
Shaanxi Air Quality Improvement	ADB	0.7	Completed 2003	Development of a system of tradable air pollution permits, and improvement of the sustainability of environmental protection measures.
Rural Electricity Supply Study	ADB	0.7	Completed 2004	Recommend rural power sector reforms to improve reliability, increase efficiency, and reduce prices.
Pro-poor Urban Heating Tariff Reforms	ADB	0.85	Completed 2005	Promote urban heating sector reform by formulating nationwide pro-poor heating tariff guidelines, and establishing an effective heating tariff collection mechanism.
Opportunities of the Clean Development Mechanism in the Energy Sector	ADB financed by Canada	0.775	Completed 2005	Provision of guidelines for CDM utilization in PRC, identification of CDM eligible projects.
Establishing the National Electricity Regulatory Commission	ADB	0.5	Completed 2005	Help establish a unified national electricity regulatory board to promote efficiency, encourage investment and ensure gains reach consumers.
Power Pricing Strategy: Tariff Setting and Regulation	ADB	0.5	Completed 2005	Help the State Electricity Regulatory Commission to develop a power pricing strategy reform plan.
Interregional Power Transmission Network Development Strategy	ADB	0.8	2003	Evaluate how to optimize power generation through strengthening of regional transmission systems and accompanying human resource development.
Power Sector Restructuring	ADB	0.8	2004	Provide PRC with a plan to restructure the power sector, introducing competitive markets.
Sound Safety and Environmental Practices for Offshore Oil and Gas Production	ADB	0.58	2004	Ensure development and adoption of sound practices for use on offshore oil platform, pipelines, oil terminal and gas processing plant.
Strengthening the Accounting and Financial Management Systems in Shanghai Petroleum Corporation	ADB	0.31	2004	Improve financial reporting and prepare for partial privatization of SHPC.
Wind Resources Concessions for Sustainable Development of Renewable energy	UNDP/ UNDES A	0.175	2003	Analysis of China's wind energy development, and potential development strategies and policy recommendations.
Modernized Biomass in China : Jilin	UNF/ UNDP	1.279	2004	A rural village/township CHP demonstration project based on the modernized use of biomass in Jilin Province in order to provide a model for replication in rural areas in other parts of the country.
Barrier Removal for Efficient lighting Products and Systems	UNDP/ GEF	8.135	2005	Addressing identified market barriers to widespread use of energy efficient lighting in China by upgrading of Chinese lighting products, increased consumer awareness of, and comfort with, efficient lighting products and an established vibrant, self-sustaining market in efficient lighting products and services.

Capacity development to manage the reform process of the electric power sector.	UNDP	0.7	2005	Separation of power generation from power transmission and distribution, and establishment of power market in pilot provinces in China.
Adoption of Clean Energy Technologies/ Sources to Reduce Air Pollution in Chinese Cities	UNDP/ Govt.	3.19	2001-2005	Assist 18 Chinese cities to improve air quality through development of capacities in clean energy action planning and policy formulation in order to promote the adoption of clean energy sources and clean energy technologies in main energy supply and consumption sectors.
Initial National Communication on Climate Change	UNDP/ GEF	5	2002-2006	Support China to develop its first official communication to UNFCCC, and undertake targeted research climate change adaptation.
Sichuan Basin Natural Gas Market and Pricing Study	USTDA/ US Dept. of Energy	0.2	2005	A market and pricing study on natural gas in the Sichuan Basin.
Underground Gas Storage Feasibility Study	USTDA	.5	2005	A feasibility study on an underground gas storage facility in China.
Establishing Long Term Energy Security	WB	0.1	2004	A report has been prepared to initiate the discussion with Chinese policy-makers on long term energy security.
Sustainable development of mining in China	WB-managed TF (Spain)	0.04	2004	Review of government plans to improve geo-science and mining licensing database management, in order to make it transparent and investor friendly, reducing government's discretionary powers.
Biogas-Western Provinces study - TA	WB-managed Trust Fund	0.150	2005	Assistance to the Western Provinces Office in SDPC to carry out an assessment of the current status of households biogas systems and develop a strategy to better use existing systems and promote biogas use in an economically and environmentally sustainable manner.
Indoor Air Pollution	WB/ESM AP	-	2002-2006	Design and implement local initiatives that would enable rural communities in Shaanxi and Inner Mongolia provinces of China with large rural and poor populations and harsher climate to develop alternative cost-effective and affordable household energy interventions (improved stoves, better ventilation, cleaner fuel).
Capacity development to manage the reform process of the electric power sector.	UNDP	0.7	1999-2004	Separation of power generation from power transmission and distribution, and establishment of power market in pilot provinces in China.
	<b>Agency</b>	<b>Grant Amount (US\$ M)</b>	<b>Timing</b>	<b>Description</b>
<b>2. Projects</b>				
Ping Hu Oil and Gas Development	ADB/ JBIC/ EIB	253.76	2004	Construction of off-shore platform, oil and gas pipelines, gas processing plant, and liquefied natural gas storage facility. Development of data management capacity.
Qitaihe Thermal energy and Environmental Improvement	ADB	120.96	2003	Building of 700 MW coal power cogeneration plant with accompanying heating network for 1.8M sq. meters of floor space.
Xian-Xianyang-Tongchuan Environment Improvement	ADB	156	2003	Reduced air pollution by (i) replacement of old, small, inefficient boilers and domestic stoves by modern, efficient cogeneration plants and district heating systems fitted with

					pollution control devices; (ii) substitution of natural gas for coal burning by end users; and (iii) reduction of particulate emissions from a large cement plant.
Anhui Environmental Improvement Project for Industrial Pollution Abatement.	ADB	112	Completed 2003		Improve wastewater treatment and replace polluting industrial technologies for the protection of Lake.
Yunnan Dachashan power transmission	ADB	54	Completed 2003		Building of transmission line, expansion of regional transmission network, decommissioning of old coal plants, rural electrification, sector reform.
Shanxi Environment Improvement	ADB	102	Completed 2005		Pollution reduction through retirement of coal boilers and stoves, introduction of gas heating network and coaled methane utilization.
Beijing Environmental Improvement	ADB	157	Completed 2003		Replacement of coal plants with gas, improved capture and cleaning of water resources, toxic waste disposal.
Harbin Electric Network Construction Project	JBIC	56.70	2004		Set up and augment a 66kV substation facility, transformers, power transmission lines, 10kV power transmission lines, and 380V power distribution facilities in Harbin, in an attempt to improve the reliability of the power supply in the electrical networks.
Hubei Small-Sized Hydropower Project	JBIC	85.49	2006		Development of 8 small dams with total hydropower capacity of 126 MW.
Developing Interconnection of Nation-wide Electricity Network and Improving Energy Efficiency in China	UNDP	22.00	2004-2007		Policy, regulatory, and technology studies in realizing the strategy of "Western Electricity Sent to the East", "Mutual Supply of North and South", and the development of the national grid interconnection.
Energy Conservation and GHG Emissions Reduction in Chinese TVEs	UNDP/GEF	7.99	2001-2006		Reduce GHG emissions in China from the TVE sector by increasing the utilization of energy efficient technologies and products in the brick, cement, metal casting and coking sectors. Remove key market, policy, technological, and financial barriers to the production, marketing and utilization of energy efficient technologies and products in these industries.
Promoting Methane Recovery and Utilization from Mixed Municipal Refuse	UNDP/GEF	5.285	1997-2006		Promote widespread adoption of landfill gas recovery and utilization in China based on the technical and organizational experiences from the three pilot landfills in China
Demonstration for Fuel Cell Bus Commercialization in China	UNDP/GEF	5.815	2002-2006		Catalyze the cost-reduction of fuel-cell buses (FCBs) for public transit application in Beijing and Shanghai, and stimulate technology transfer activities by supporting demonstration of FCBs and their fueling infrastructures
Gansu Small-Sized Hydropower Project	JBIC	61.12	2005		Development of 7 small dams with total hydropower capacity of 112 MW
Inner Mongolia (Tuoketuo) Thermal Power Project	IBRD	400	Closing date: Dec. 31, 2005		(i) construction of the first two coal-fired thermal units in Inner Mongolia,; technical assistance to the Tuoketuo electric power company for accounting and management systems; and a desertification control and dryland management program to improve environmental conditions. (ii) construction of two indoor substations at Xibianmen and Xizhimen, the addition of a third transformer in an underground

				substation currently under construction, and technical assistance to the North China Power Group Company for implementing accounting and financial management systems.
Energy Conservation	IBRD	63	Closing date: June 30, 2006	Introduction and development of new project financing mechanism And market-oriented institutions to implement energy conservation projects in China.
Renewable Energy Development Project	IBRD	100	Closing date June 30, 2007	The project consists of: (a) installation and operation of grid-connected wind farms on two sites in Shanghai, totaling 20 MW of installed capacity; (b) supply of about 10 MW of PV systems to 300-400,000 households and institutions in remote areas of six Northwestern provinces; and (c) support for technology upgrading to improve the performance and reduce the costs of solar PV technologies in China. Institutional strengthening is an integral part of the project, to remove barriers to market development and commercialization of the technologies.
The East China (Jiangsu) Power Transmission Project	IBRD	250	Closing date: : March 31, 2006	The project components are as follows: a) System expansion covers the planning, design, supply, and construction of approximately 993 km of 500 kV (kilowatt) transmission lines; the construction of five new 500 kV substations and the expansion of two existing 500 kV ones; and the reinforcement of Nanjing's urban transmission system. b) Implementation assistance will support local and international consulting services for engineering and construction management. c) Technical assistance for improved interprovincial power exchange policies and procedures will develop an incentive framework and institutional basis for resource pooling and efficient power trading between provincial systems. d) Technical assistance for improved accounting and financial management systems. e) Institutional development and training will provide training programs, and support the procurement and installation of required hardware and software for power system analysis.
Energy Efficiency Program I	KfW	50 million EUR loan	2006	EE- district heating systems Shihezi, Xinjiang

Table II.B. On-going

	Agency	Grant Amount (US\$ M)	Timing	Description
<b>1. Studies</b>				
Heating supply for urban poor in Liaoning Province	ADB, financed by DFID	0.5	Ongoing	Analysis of key issues for improvement of heating supply for urban poor, including reform of the heating sector.
Waste Coal Utilization Study	ADB	0.4	2006	Examine ways to convert waste coal in Shanxi (supplier of 1/3 of PRC's coal) into environmentally friendly fuel.
Renewable Energy for Poverty Reduction	ADB/Denmark	0.6	On-going 2006	Assess least cost options for supplying energy to underserved areas in Zhangye, assess willingness to pay by rural poor, and develop a business plan to optimize gains to rural poor from renewable energy development.
Poverty Reduction in Coal Mine Areas in Shanxi Prov	ADB/PRF	0.5	Ongoing 2006	Assist SPG with the development of a model socioeconomic and environmental mitigation program that will focus on retraining redundant miners, developing job creation schemes for redundant miners, and reducing environmental impacts for poor communities following the closure of large numbers of small coal mines in accordance with national and provincial policy.
Inner Mongolia Autonomous Region	ADB	0.5	Ongoing 2006	Help the Government to design and prepare the environmental improvement project in IRMA.
Alternative Energy Supply for Rural Poor In Remote	ADB/PRF	0.5	Ongoing 2006	Assist GIMAR in formulating a strategy for expansion of alternative energy-based electrification in remote rural areas, including a strategy to improve sustainability of existing decentralized installation.
Alternative Livelihood Options to Facilitate Coal Sector Restructuring	ADB	0.3	Ongoing 2006	Assist China National Coal Association with developing and applying of a methodology for identifying alternative economic activities for cities that depend on coal mining as their main source of income and are experiencing decreasing coal reserves.
Energy Conservation and Resource Management	ADB	0.6	Ongoing 2006	Assist the National Development and Reform Commission identify various options and corresponding requirements for the development of an appropriate policy and regulatory framework to promote and implement efficiency power plant project (EPP).
Capacity Building for the Rapid Commercialization of Renewable Energy in China	UNDP/GEF/AusAID/Netherlands	13.678	On-going	Promotion of the widespread adoption of renewable energy technologies in China by removing a range of barriers to increased market penetration of the technologies. Strengthening the capacity of China to shift from the supply-orientated technology deployment to demand-driven, investor- and consumer-friendly approaches.
Barrier Removal for Efficient Lighting Products and Systems	UNDP/GEF	8.135	On-going	Addressing identified market barriers to widespread use of energy efficient lighting in China by upgrading of Chinese lighting products, increased consumer awareness of, and comfort with, efficient lighting products and an established vibrant, self-sustaining market in efficient lighting products and services.

	Agency	Grant Amount (US\$ M)	Timing	Description
Barrier Removal for the Widespread Commercialization of Energy Efficient CFC Free Refrigerator in China	UNDP/ GEF	9.617	2001-2007	Promotion of the widespread commercialization of energy efficient refrigerators by removing technical, market, commercial, information and other barriers to increased market penetration of the technologies and products.
Building Capacity for the Clean Development Mechanism in China	UNDP/ UNF/ NORAD/ IMET	1.183	Since 2003-	Strengthen government institutions' ability, provide stakeholders the skills and knowledge, develop real CDM projects, and disseminate information on the CDM development both internationally and domestically.
Developing Interconnection of Nation-wide Electricity Network and Improving Energy Efficiency in China	UNDP	0.8	2004-2007	Policy, regulatory, and technology studies in realizing the strategy of "Western Electricity Sent to the East", "Mutual Supply of North and South", and the development of the national grid interconnection.
China End-Use Energy Efficiency Project (EUEEP)	UNDP/ GEF	17	2006-2009	Improve the efficiency of major energy end-use sectors: steel, petrochemical and building industries. Foster a strategic approach to developing, implementing and enforcing a comprehensive and effective energy conservation policy and regulatory system.
Fuel Cell Bus II Shanghai	UNDP/ GEF	5.6	2007-2010	Demonstrate the commercial viability of hydrogen fuel cell buses in Shanghai city, and an enabling environment of policy and regulations to support commercialization of clean public transport options.
MDG Carbon China Programme	UNDP/ TTF/ Private Sector	1.7	2007-2010	Develop new pipeline of CDM investment projects from China that achieve both GHG reductions and social development goals.
Second National Communication on Climate Change	UNDP/ GEF	5	2007-2010	Improve accounting of greenhouse gas emissions, support China to develop its official communication to UNFCCC, and develop a national strategy of climate change adaptation.
Establishment of a U.S.-China Natural Gas Institute	USTDA	0.5	Ongoing - 2006	Technical assistance to establish the curriculum, which could focus on topics such as production, distribution, pricing, and regulatory issues, for the U.S.-China Natural Gas Institute.
Shanghai Power Reliability Feasibility Study	USTDA	0.4	Ongoing - 2006	A feasibility study to examine the Shanghai Municipal Electric Power Company distribution systems, determine the technical enhancements needed to improve quality and reliability, and provide an implementation plan.
Coalbed/Coal Mine Methane Power Plant Feasibility Study	USTDA	0.5	Ongoing	A technical assistance program for Shanxi Jincheng Anthracite Coal Mining Group Company on the development of a 120-megawatt (MW) power plant that will use coal bed methane (CBM) and coal mine methane (CMM) from the Sihe mine site as a feedstock..
Shenyang Polygeneration Project Feasibility Study	USTDA	0.5	Ongoing	A feasibility study to examine an integrated coal gasification, power generation and district-heating project in Shenyang, using advanced coal utilization and processing technology.
China Southern Power Grid Emergency Management System	USTDA	0.5	Ongoing	Technical assistance for the China Southern Power Grid Co., Ltd. in the implementation and procurement of an EMS as well as associated



	Agency	Grant Amount (US\$ M)	Timing	Description
				communication equipment for a regional power grid in Southern China.
PetroChina Pipeline Preservation Project Feasibility Study	USTDA	0.3	Ongoing	This Feasibility Study and demonstration for PetroChina will involve a technology that involves using electric field measurements to determine corrosion and the presence of illegal taps in buried pipelines.
Dalian Shuangdao Bay Refinery/Petrochemical Complex -	USTDA	0.9	Ongoing	This feasibility study supports planning related to the first privately developed petrochemical complex in China. The study will help the Dalian Shide Group integrate petrochemical production in a large complex under development in the Shuangdao Bay area. The contractor for this study is Nexant, Inc.
China Energy 2020 study	WB WB executed ESMAP funds	0.025 0.150	On-going	A joint policy paper at the request by the Development Research Center (DRC) outlining an implementation strategy for addressing the energy security concerns of the Government under the objectives approved by the State Council.
PPIAF – China Competitive Power Markets	WB WB-managed PPIAF funds	0.095 0.525	On-going	A strategy to transform existing generation assets and companies that are wholly/partially owned by regional and provincial power companies into multiple independently owned firms, in order to create the basis for competitive generation markets in China.

	Agency	Loan Amount (US\$ M)	Timing	Description
<b>2. Projects</b>				
Acid Rain Control and Environmental Improvement	ADB	147	On-going	Improve energy efficiency and reduce emissions at six industrial facilities, restore ecological areas damaged by acid rain, institutional strengthening for acid rain control.
Heibei Zhanghewan pumped storage power station	ADB	144	On-going	Building of pumped storage power station and connecting transmission lines to retire old coal powered peaking plants.
Shen-Da Power Transmission and Grid Rehabilitation	ADB	100	Near completion	Build North-South transmission line in Liaoning province, retire old coal plants, and support provincial power sector reform.
Gansu clean energy development	ADB	35	On-going	Building of 98 MW run-of-river hydro plant, and improvement of transmission capacity and management of supply to nearby towns.
Liaoning Environment Improvement Project	ADB	100	Approved in 2005	Capture of coal bed methane for urban heating in Liaoning and for GHG reduction.
Coalbed Methane – GHG abatement (Shanxi)	ADB	150	2005	Capture of coalbed methane for urban heating in Jianxi, and for GHG reduction. CMM-fired power plant is financed under ADB's CMM Development Project.
More Efficient Greenhouses	DGIS	0.6	On-going	Activity Implemented Jointly with the Shougang Municipal Agricultural Committee and the Netherlands Energy Research Foundation to raise productivity and energy-efficiency of typical Chinese greenhouses.

	Agency	Loan Amount (US\$ M)	Timing	Description
Promotion of rural renewable Energy in Western China.	DGIS	6.4	01/2003 – 12/2007	Promotes the development and utilization of rural renewable energy improving rural living conditions, protecting the environment and promoting local economy development. Through 14 demonstration villages different models of RE will be demonstrated (spread over 7 counties). Special focus on wind energy, biogas electricity generation and solar systems. Project partners are the Ministry of Agriculture, Ministry of Commerce, China Association of Rural Energy Industry (Carei).
Anhui Environmental Improvement Project	JBIC	173.35	2007	Development of natural gas supply to eight cities, to replace coal for air quality improvement.
Beijing Environmental Improvement Project	JBIC	83.72	2007	Replace small coal boilers with natural gas cogeneration equipment for air quality improvement and CO2 reductions.
Henan Environmental Improvement Project	JBIC	180.24	2008	Development of natural gas supply to five cities, to replace coal, for air quality improvement.
Shandong Tai'an Pumped Storage Power Station Project	JBIC	168.15	2007	Building of a 1000 MW pumped storage power plant to replace coal peaking plants, for enhanced grid reliability, efficiency improvements, and environmental improvements.
Shanxi Xilongchi Pumped Storage Power Station Project	JBIC	217.1	2010	Building of a pumped storage power plant to replace coal peaking plants, for enhanced grid reliability, efficiency improvements, and environmental improvements.
Xinjiang Yining City Environmental Renovation Project	JBIC	55.1	On-going	Construction of water supply system, wastewater treatment system, garbage disposal, district centralized heating system and natural gas utilization system, and afforestation of ecological shelter forest.
Solar Energy Program	KfW	34.9 (Grant)	On-going	Rural Electrification through PV Hybrid Systems in four Provinces (Gansu, Qinghai, Xinjiang, Yunnan).
Xiaogushan Hydropower Plant (XHP)	PCF	10 (Grant)	Approved	XHP project is to be constructed by PRC in Zhangye City, Gansu Province to ease acute power shortage in Zhangye city and substitute a coal-fired power plant that would have been installed in the absence of XHP.
Jincheng Coal Bed Methane Project	PCF	10 (Grant)	Ongoing	Jincheng Coal Bed Methane Project is to be located in Jincheng City, Shanxi Province. The project will address the serious environmental issue created by the extraction and release of the coal bed methane from coal mining through the collection of gas and construction by PRC of the 120 MW gas-fired power plant.
CN-2nd GEF Energy Conservation	GEF	26 (Grant)	Ongoing Closing date: June 30, 2010	The project includes three components: 1) capacity building, and technical assistance program to assist China's nascent Energy Management Company (EMC) develop businesses; 2) support central coordination, monitoring and reporting of project activities; and, 3) the EMC loan guarantee program is designed to provide emerging EMCs with enhanced opportunities to receive loans from

	Agency	Loan Amount (US\$ M)	Timing	Description
				domestic banks, and to engage the banks in the development of a sustainable EMC industry.
CN-GEF-Renewable Energy Scale-Up Program	GEF	40.22	Ongoing September 30, 2010	Pilot program under GEF/WB strategic program for renewable energy. The program aims to overcome barriers to large scale use of renewable energy for power generation by assisting China to develop a modern industrial base and market infrastructure for mature technologies such as wind power and small hydropower.
CN-GEF-Heat Reform & Bldg Egy Eff.	GEF	18 (Grant)	Ongoing Closing date: Dec. 31, 2011	<p>The project has the following three components: Component 1) integrated measures that simultaneously address the thermal integrity of buildings, the operational efficiency of heat supply systems, the provision of means for heat control by consumers, and the implementation of heat metering, cost-based heat pricing and consumption-based heat billing.</p> <p>Component 2) bring the best national and international expertise to bear on issues surrounding implementation of reform and development of new technical approaches, coordinate and guide implementation of local project activities, undertake central project management and monitoring functions, and disseminate successful ideas and results outside of participating cities.</p> <p>Component 3) will promote simultaneous development of both heating sector reforms and building energy efficiency improvements in 4-6 additional northern Chinese municipalities, achieving broad, national impact.</p>

	Agency	Loan Amnt (US\$M)	Timing.	Description
Tongbai Pumped Storage Project	IBRD	320	Ongoing Closing date: Dec 31, 2007	(i) develop Tongbai pumped storage project – 1200 MW based on existing reservoir (ii) 500 KV transmission line reinforcement (iii) Power market and regulatory system establishment and associated reforms.
Renewable Energy Scale-up Program (CRESP)	IBRD	87	Ongoing Closing date: Sep 30, 2010	The project will include the following: Mandated Market Policy MMP research and implementation support; technology improvement for wind and biomass; and long-term capacity building. Two subcomponents: in Fujian, a 100 MW wind farm at Changjiang'ao, Pingtan Island. In Jiangsu, a 25 MW straw-fired biomass power plant at Mabei Village, Rudong County.
Hubei Hydropower Development in Poor Areas Project	IBRD	105	Ongoing Closing date: Dec. 31 2008	Each of the four project components at four sites (Dongping, Najitan, Songshuling, and Xiakou); (i) supports the building of hydroelectric power stations, which includes either a single- or multi-purpose arch or gravity dam, surface powerhouses, step-up substations, and transmission lines; (ii) carries out a program of institutional strengthening of power companies; (iii). develops a plan for poverty alleviation.
Yixing Pumped Storage Project	IBRD	145	Ongoing Closing date: Dec 31, 2009	1) construction of the Yixing pumped storage power plant, a new upper reservoir, new main dam and subsidiary dam, and the underground powerhouse; 2) assistance to the restructuring of the power sector; and 3) construction of a double circuit transmission line to connect the Yixing pumped storage plant to the East China 500 KV network.

Table II.C: Pipeline

	Agency	Grant Amount (US\$ M)	Timing	Description
<b>1. Studies</b>				
Gansu Heihe Hydropower Development	ADB	0.5	2006	Development of 2 hydropower subprojects at Erlongshan and Dagushan sites for a total of 110 megawatt capacity.
Energy Conservation and Resource Management	ADB	0.3	2006	Help the Ea implement sustainable energy development strategy
Support for Establishing a Clean Development Fund	ADB	0.6	2006	Will promote sustainable development and ensure effective implementation of the country's obligation under United Nations Framework Convention on Climate Change.
Coalmine Safety Study	ADB	0.6	2006	Will help reduce coalmine accident to meet the Government's target of solving safety problem
Risk Sharing under Power Purchase Agreements (PPAs)	ADB	0.1	2006	TBD
Rural Electrification Development Project	ADB	0.5	2006	To improve the efficiency of power supply, reduce adverse environmental impacts associated with energy production and use and providing electricity to the poor.
Beijing clean energy development study and demonstration	ADB	0.5	2005	Study of potential energy efficiency improvements, pollution abatement strategies and preparation of a demonstration project to improve air quality by 2008 Olympics.
Study on inter-provincial acid rain control	ADB	0.6	2006	Exploration of emissions trading as a means of reducing interprovincial acid rain.
Power sector restructuring III	ADB, Source TBD	0.6	2006	Development of PRCs electricity regulatory framework.
China End-Use Energy Efficiency Project (EUEEP)	UNDP/GEF	17	2004-2007	Support a 12-year strategic plan developed by the Chinese government to dramatically improve the efficiency of its major end-use sectors: buildings and industry. Foster a strategic approach to developing, implementing and enforcing a comprehensive and effective energy conservation policy and regulatory system consistent with the objectives of the Energy Conservation Law of 1998.
Power Industry Study	WB	0.1	2006	Assessment of the power sector demand side resources available, related economic and environmental benefits, designing of load management and energy efficiency programs, tariff mechanisms, and recommending how to better integrate demand side management into the power sector planning and investment process.
China-universal access to electricity	WB WB-ESMAP	0.055 0.345	2006	Develop a framework for delivering universal electricity access in China by 2020.
China- sustainable coal sector development	WB WB-ESMAP	0.5 0.35	2007	Improvement of the efficiency and performance of the coal sector through the creation of the enabling conditions for environmentally and socially sustainable development.

Heat Pricing Study	ESMAP	tbd	2007	Assist the Chinese Government to pilot and develop a national policy framework for heat pricing and billing, with special attention to preserving access to quality heating services for the poor.
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	Agency	Loan Amount (US\$ M)	Timing	Description
<b>2. Projects</b>				
Inner Mongolia Environment Improvement	ADB	110	2006	Will support environmental improvement in IMAR: (i) improvement in efficiency and rehabilitation of natural gas and central heating supply and closure of small-fired boilers towards energy conservation, and (ii) improvement in wastewater treatment and utilization.
Renewable Energy in Rural Areas	ADB	100	2006	Rural electrification and improvement of policy environment for promotion of renewables in Inner Mongolia, Sichuan, Shaanxi.
Rural energy sector development project	ADB	80	2006	Expansion of service to off-grid areas using cleaner alternative fuels. Promotion of small-scale hydro through adjustment of market incentives.
Energy Conservation and Resource Mgmt	ADB	100	2007	To help the EA implement sustainable energy development strategy
Gansu Heihe Hydropower Development	ADB	50	2007	TBD
CN-Renewable Energy II (CRESP II)	IBRD/ID A	86.4	2006	
CN-Shandong Flue Gas Desulfurization	IBRD/ID A	104	2007	
Provincial Climate Change Strategies and Action	UNDP/ Norway/ DFID/ EU	10	2007-2012	Support implementation of new China Climate Change Strategy through local capacity building and adoption of measures to address accelerated action on mitigation and adaptation in priority provinces of Tibet, Qinghai, Inner Mongolia, Shanxi.
Climate Change Partnerships Framework	UNDP/ MDG-Fund	12	2008-2010	Support policies for post-Kyoto actions, design of new Global Climate Change Institute in China, new UN-Business Compact on Climate Change and technology transfer for energy efficiency and renewable energy, and measures for climate change adaptation in priority regions like Western China.
Energy Efficient Brick Making and Rural Buildings	UNDP/ GEF	7	2008-2012	Support new technologies, financing options and local regulatory schemes to improve the energy use of brick making firms throughout China's country-side, and the standards and enforcement of more efficient practices in construction of new rural buildings.
Energy Efficient Air Conditioning	UNDP/ GEF	7	2008-2012	Support development of new energy efficient Acs for commercialization in China, including support for technology design, regulatory regimes and consumer campaigns.
Rural Renewable Energy	UNDP/ GEF	6	2009-2012	Support increased use of biomass and biofuels in meeting rural energy demands and shift away from increased reliance on coal.
Commercial Financing for	UNDP/	3	2008-2010	Support design of new Green Equity funds for

Renewable Energy	Private Sector			increased foreign investment into renewable energy projects in wind, solar and biomass sectors.
Regional Standards and Labels for Energy Efficient Products	UNDP/ GEF	5.8	2008-2012	Support harmonization of energy efficient standards and labels into products traded within Asia, includes China as lead country as well as Indonesia, Vietnam, Thailand and other
Coal Mine Safety	UNDP/ GOC	14	2007-2010	Support technology transfer for improved monitoring and surveillance of methane gas emissions from coal mines and methods to reduce explosions and human impacts.
2008 Green Olympics	UNDP/ GEF	1	2007-2008	Support use of clean energy public transport during the 2008 Beijing Olympics, and awareness raising on climate change mitigation