



Energy Sector Progress Report

November 2008 - October 2009

**8th Ministerial Conference
on Central Asia Regional Economic Cooperation
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Ulaanbaatar, Mongolia**

REPORT ON ENERGY SECTOR

A. Background

The purpose of this Report is to summarize the activities in the sector, capturing developments since the last Ministerial Conference in October 2008.

The Report focuses on projects with a regional content and impact. Regional projects envisage a series of phased investments aimed at improving energy security, efficiency and trade.

B. Transmission Projects

- ***Uzbekistan – Afghanistan transmission.*** This ADB financed line is now operational. Up to 150MW is being exported to Afghanistan ensuring continuous supply to Kabul. Work to further increase the capacity of the interconnection to 300MW is progressing. The IsDB financed 500kV transmission line to connect the Surkhan and Guzar substations in Uzbekistan is due to be completed in October 2009, and USAID financed reactive power compensation project in Afghanistan is due for completion in 2010.
- ***Tajikistan North-South transmission.*** This 350 km North-South 500 kV transmission line from Khodjent to Regar is constructed with a credit from People's Republic of China (PRC), together with associated substations in Khodjent and Dushanbe. The project will enable the direct flow of power generated in the south of Tajikistan to the north as well as the transit of Kyrgyz and Kazakh power through Tajikistan to Afghanistan and Pakistan within CASAREM. It is expected that the works will be completed by the end of 2009.
- ***Tajikistan - Afghanistan 220kV transmission project.*** A 20-year Power Purchase Agreement (PPA) between Tajikistan and Afghanistan was signed in September 2008 for exports of up to 500 GWh per year to Afghanistan. In the initial years, the power supply would be during summer period only. Consultants and contractors have been appointed. The 274km long transmission line project financed by ADB will be completed in 2010. The work for the construction of the associated Kunduz and Baghlan substation in Afghanistan, financed by IsDB has been awarded.
- ***CASA 1000.*** The project will establish transmission infrastructure to trade about 1,300 MW of electricity between Central and South Asia, Preparation work is led by an Inter-Governmental Council (IGC) comprising representatives from the four participating governments and supported by the World Bank. Due diligence work including environmental and social safeguards is expected to be completed in early 2010. The World Bank Group is taking the lead in helping to design a framework agreement among the participating countries, and financial close is expected in the next 18 months. Other partners are Islamic Development Bank and IFC. ADB financed part of the feasibility study, but in 2009 withdrew from the working group because of concerns with the project rationale and viability, concentrating instead on helping participating countries with crisis financing and subregional energy projects. ADB is willing to review the results of the due diligence and the final transaction structure, when available, to determine its position. Concerns have been voiced by some countries about the potential impact of the project on water resources, the environment and the functioning of the Central Asia power system, and coordination with all interested parties has been urged. Project preparation will ensure that regional and riparian concerns are fully identified and addressed.

- **Dakta – Kemin 500kV line in Kyrgyz Republic.** This line is intended to evacuate power from the Kambarata 1 and 2 Hydropower Plants (HPPs) in Kyrgyz Republic to Tajikistan and further on to South Asia. A contract has been signed with the Korean company EPI for the construction of the 500kV substation at Datka. A feasibility study is underway for the construction of the transmission line.
- **Ekibastuz – Yukgres 500 kV transmission line in Kazakhstan.** This project funded by WB, EBRD and Government of Kazakhstan was inaugurated on 17 September 2009, which creates an energy bridge between the north and the south of the country, offering numerous benefits in terms of system reliability, increased export and transit capacity, removal of growth-retarding power deficit in the south and more effective use of low-cost power plants in the north, particularly in the Ekibastuz region. The new transmission line will also improve the reliability of parallel operation of the power systems of Russia, Kazakhstan and Central Asia, thus improving the quality of power supply across the region.
- **Moinak Electricity Transmission Project in Kazakhstan.** WB approved US\$48 million financing on 15 September 2009 to increase and improve the supply of electricity to business enterprises and households in southern Kazakhstan in an economically and environmentally sustainable manner. The project comprises the construction of two 220 kV lines with a combined length of about 322 km, to evacuate power from the Moinak Hydropower Project.
- **Alma Transmission Project in Kazakhstan.** Preparation of the proposed US\$200 million WB financed project is ongoing and should be completed by the end of 2009. The project will increase the capacity of the regional power transmission network to provide adequate supply of electricity with particular focus on the Almaty region. It includes the construction of a new bulk supply point for Almaty Oblast (Alma substation) and the upgrading of transmission links between Alma and existing as well as prospective power sources.
- **Batys Transit Investment Project in Kazakhstan.** Eurasian Development Bank approved in 2008 a US\$30.5 million for this PPP pilot, which involves the construction of a power transmission line linking North Kazakhstan and Aktobe, thereby eliminating the increasingly common power shortages in West Kazakhstan by supplementing the local power supply from the Ekibastuz plants. This project also includes the expansion of two existing substations by 500 kV each, as well as the construction of a new 500 kV power transmission line stretching 500 km.
- **Gas Transmission and Distribution Networks in Central Asia.** Feasibility studies have been completed with support of the European Union for (i) a \$120 million rehabilitation of the Kyrgyz section of the Tashkent-Bishkek-Almaty (TBA) gas pipeline, and (ii) the emergency rehabilitation of the Fergana valley gas transmission and distribution networks with components in Kyrgyz Republic, Tajikistan and Uzbekistan. The social impact assessment of the rehabilitation of the Bishkek-Tokmok gas pipeline in Kyrgyz Republic is underway.

C. Generation Projects

1. Uzbekistan

- **Talimarjan 800MW Combined Cycle Gas Turbine Project.** ADB has approved a \$1.5m technical assistance to conduct project due diligence and assist in

project readiness. It is expected that financing will be provided by an IFI consortium of ADB/JICA/WB for the generation and associate transmission project, which is scheduled to be completed in 2013.

2. Tajikistan

- **Sangtuda I 670 MW Hydropower Project.** The plant was officially commissioned on 31 July 2009. At full capacity, the plant will provide around 12% of Tajikistan's electricity output.
- **Sangtuda II 220MW Hydropower Project.** Work is underway, commissioning is expected in 2012.
- **Nurek 3,000MW Hydropower Project.** A rehabilitation of the Nurek 500kV switchyard is under way with ADB financing. Completion is expected in 2013.
- **Integrated development of coal resources.** In July 2008 USTDA approved financing for a bankable feasibility study for the construction of a coal-fired thermal plant based on coal supply from the Fon Yagnob mine. Metallurgical Resources International, Inc. was selected to conduct the study.
- **Rogun HPP.** Requests for Proposals for a Techno-Economic Assessment and an Environmental and Social Impact Assessment of the project are expected to be issued during fourth quarter of 2009, following consultations with all riparian states (Afghanistan, Kazakhstan, Kyrgyz Rep., Tajikistan, Turkmenistan, and Uzbekistan) on the Terms of Reference for these studies.
- **Lake Sarez HPP.** Proposed feasibility study to be funded by IFC InfraVentures is currently under appraisal with the participation of the WB.

3. Kyrgyz Republic

- **Kambarata 1 and 2 Hydropower projects.** Construction of the 240MW Kambarata-2 HPP is expected to be completed beginning 2010 for the first unit. Russia's RAO-UES, the Joint Stock Company "Power Plants" of Kyrgyz Republic and the Kazkuat company of Kazakhstan are jointly financing the preparation of a pre-feasibility study for the construction of the 1,900MW Kambarata-1 HPP. Kyrgyz Republic and Russia have formed a joint stock company with equal shares for the construction of Kambarata-1 HPP.
- **Energy Emergency Assistance Project (EEAP).** WB is preparing additional financing in an amount of US\$4 million to provide support for meeting severe shortages expected during the upcoming winter of 2009/10, notably by providing equipment, materials, and spare parts to increase thermal generation and heat at the Bishkek combined heat and power plant (Bishkek CHP).

4. Kazakhstan

- **Central-Asian Electric Power Corporation (CAEPCO).** The EBRD is investing up to €46 million equivalent to acquire a stake in the Central-Asian Electric Power Corporation (CAEPCO), the largest private power company in Kazakhstan, generating more than 6% of the domestic power output. The investment will be used to upgrade the company's generation and transmission

assets, which will then improve export potential from northern Kazakhstan to Russia through the existing grid connections. In addition, CAPECO mandated IFC to participate to the financing of its power and heat generation and distribution assets efficiency improvement programme for which appraisal is currently ongoing.

- **Ekibastuz GRES-2 Power Plant.** Eurasian Development Bank approved a US\$93.5 m loan to improve the Technical Condition of this plant.

D. Energy Efficiency and Clean Energy

1. Gas Flaring Reduction

Azerbaijan, Kazakhstan and Uzbekistan are undertaking steps towards reducing gas flaring with support from the Global Gas Flaring Reduction (GGFR) Partnership and the World Bank:

- **Azerbaijan** has established a working group for coordinating the country's efforts to reduce gas flaring and the State Oil Company of Azerbaijan (SOCAR) is preparing a Plan for Recovery of Associated Gas, which is expected to be completed by end-2009. SOCAR has already carried out an inventory of gas flaring sources and prepared initial information on potential CDM projects. On May 5, 2009, SOCAR and GGFR conducted a workshop on Global Climate Change and Management of Greenhouse Gases in Azerbaijan.
- In **Kazakhstan** a GGFR team completed in July 2009 a report on "Further improvement of gas flaring reduction legislation of the Kazakhstan Republic".
- In **Uzbekistan**, the World Bank and GGFR Partnership participated in the Annual "13th Uzbekistan Oil and Gas Exhibition and Conference" in Tashkent, on May 13-14, 2009, and presented the Partnership's global activities on reduction of gas flaring.

2. Carbon Finance (CF)

ADB, UNDP and the World Bank are supporting CF activities in PRC, Uzbekistan, Mongolia, Kyrgyz Republic, Tajikistan and Turkmenistan:

- **In Uzbekistan**, the WB is proceeding with the preparation of a Carbon Finance project in Uzbekistan for the utilization of flared associated gases from the North Shurtan, Shakarbulak, Garmiston, and Kumchuk oil fields. The social and environmental consultations and assessments for this project have been completed.
- **In Mongolia**, the World Bank is managing a Technical Assistance Program "Capacity Building for Development and Implementation of Carbon Finance Projects", funded by the Japan Policy and Human Resource Development (PHRD) Grant.
- **In PRC**, the World Bank is facilitating Emissions Reduction Purchase Agreements (ERPA) between World Bank-managed Carbon Funds and project sponsors. Four ERPAs have been signed and are expected to generate 4,796,157 tons of Emission Reductions (ERs) from electricity savings due to

recovery of waste heat and gas and application of advanced technology with lower energy consumption. Preparation of carbon finance components is also underway for (i) biomass power generation projects in Anqiu and Jiangsu Rudong and (ii) district heating projects in Dashiqiao and Yingkou.

- **ADB approved a Regional TA (RETA) on climate change.** It will develop low carbon strategies and help "proof" projects financed by ADB in the region.
- **UNDP is promoting carbon market development in Central Asia** through MDG Carbon Facility and Kyoto Protocol capacity building project: (i) in Uzbekistan, Kyrgyz Republic, Tajikistan and Turkmenistan, UNDP is building institutional capacities of the Designated National Authorities for the Clean Development Mechanism; (ii) in Uzbekistan, MDG Carbon Facility is facilitating development of natural gas leakage reduction project with JSC UzTransGaz which will generate 1.3 mln tons of emission reductions (ERs) through 2012. Emission Purchase Reduction Agreement (ERPA) for this project was signed in June 2008, (iii) in Kyrgyz Republic, MDG Carbon Facility is working with the Directorate for Small Hydro Power Development to prepare a carbon finance program for a bundle of 12 small hydro power projects, and (iv) in Turkmenistan, support is being provided to JSC TurkmenEnergo for the development of carbon finance project on combined cycle power generation in Akchal power plant

3. Renewable and Energy Efficiency Projects

The ADB, EBRD, EU, UNDP and WB are supporting projects in PRC, Kyrgyz Rep., Kazakhstan, Tajikistan, Uzbekistan and Mongolia.

- **In Mongolia,** EBRD is implementing until June 2009 a one-year Technical Cooperation project "Renewable Energy Regulatory Development Road Map" to improve the performance of the Energy Regulatory Authority towards promoting renewable energy.
- **In PRC,** the WB has prepared a project for improving energy efficiency of medium and large enterprises as well as a Heat Reform and Buildings Energy Efficiency Project, which includes Urumqi, Xinjiang Uyghur Autonomous Region, among its project sites.
- **In Kyrgyz Republic and Tajikistan,** development of small and medium-sized hydropower projects (up to 30 MW) is being financed by €1 million grant from EBRD. The Executing Agencies are undertaking the selection of consultancy services for prioritization of potential projects, regulatory/market development, and feasibility assessments of four pilot projects. Also, EU-funded scoping studies for hydropower systems in the Surnob river basin and mini-hydro power schemes in Tajikistan are underway along with a pre-feasibility study on potential hydropower schemes in the Sary Jaz river basin in Kyrgyz Republic.
- **In Kyrgyz Republic,** ADB is processing a technical assistance to prepare a transmission and processing metering project for approval in 2010. The project will improve the commercial operations of the transmission and distribution companies through system loss reduction. It will also improve transparency and accountability of the power sector, both nationally and regionally.

- ***In Kazakhstan, Kyrgyz Republic, Turkmenistan and Uzbekistan***, UNDP is implementing a US\$ 15 mln GEF-funded program on energy efficiency in buildings which helps integrate energy efficiency in on-going and future state-funded construction and renovation programs in public and residential sector by a) developing and strengthening enforcement of building energy performance codes and energy passports; b) building capacity of relevant government authorities, architects, and energy managers; and c) showcasing integrated building design approach through a number of demonstration projects in schools, hospitals and multi-apartment residential buildings across the region.
- ***In Tajikistan and Kyrgyz Republic***, two technical assistance projects are being developed with financing from UNDP core resources, GEF and GTZ to help create favorable regulatory environment and build institutional and administrative capacities for small hydro power by setting attractive business terms and conditions for investors, streamlining and simplifying administrative procedures for project approval, collecting basic hydrological, technical and cost data and preparing feasibility studies for selected five sites (up to 20 MW).
- ***In Kazakhstan***, under a US\$ 3m UNDP -GEF Wind Power Market Development Initiative technical assistance has been provided for the development of new Renewable Energy Law, preparation of wind atlas of Kazakhstan, detailed wind resource assessment and pre-feasibility study for 10 sites. MoU between UNDP and National Holding Samruk-Energy has been signed for cooperation on the development of pilot wind power plants.
- ***In Kazakhstan***, the EBRD is supporting private sector investments in energy efficiency and renewable with a new \$75 million framework under which loans will be provided to participating banks for on-lending to local companies. The first \$10 million loan to Bank Center Credit has been approved. The framework also includes donor funded technical assistance to help companies identify areas of energy losses, propose technical solutions for lowering energy consumption, and project preparation. ***EBRD has now signed another 30 million USD loan to ATF bank.***
- ***In Kazakhstan***, under a Sustainable Energy Action Plan with the Government EBRD is providing assistance for the development of (i) a draft Energy Efficiency Law, (ii) incentive-based price control methods for power distribution networks, and (iii) competitive generation market. The EBRD has been investing in power plant refurbishment as well as in grid modernization over the years to facilitate meeting the growing power demand in southern Kazakhstan. EBRD is also assisting MEMR with preparing secondary legislation for the renewable energy law.
- ***In Uzbekistan***, EU has allocated funds for a study on the rehabilitation of the Andijan district heating system and application of renewable energy in remote areas.
- ***Uzbekistan*** has requested in August 2009 a WB credit of US\$25 million for a pilot project to design and establish a specialized financial mechanism that increases investments in energy efficiency measures in industrial enterprises in Uzbekistan. A full scale project would be designed based on the experience and lessons of pilot project.

E. Energy Sector Strategy and Action Plan

In November 2008, the Ministerial Conference of CAREC approved the Strategy for Regional Cooperation in the Energy Sector of CAREC Countries (the Energy Strategy). In May 2009, the CAREC Senior Officials Meeting requested the ESCC to prioritize actions under the Energy Strategy and produce an Action Plan to be presented for approval at the October 2009 Ministerial Conference. An ESCC meeting was convened in Almaty on September 2-3, 2009 to discuss and agree the main elements of the Action Plan. The Action Plan is summarized in a separate document.

The ESCC agreed on the following framework of the Action Plan objectives and deliverables:

Core Issue		Energy Supply-Demand Balances	Regional Dispatch and Regulatory Development	Energy-Water Linkages
Objective		To promote regional trade by optimizing integrated transmission and generation expansion.	To maximize the benefits of unified operation of the Central Asia Power System.	To strengthen cooperation by integrating energy and water analysis.
Deliverables	Policy Environment	Develop: <ul style="list-style-type: none"> - national generation and transmission plan - integrated regional plan - assess benefits of regional integration. 	Develop an institutional platform and framework for regional power trade based on economic principles. This platform could be within CDC Energy.	Strengthen Central Asian institutions to lead the dialogue and analysis on rational use of energy-water resources.
	Capacity Building	Involve national and regional organizations in developing the model and execution of the plan.	Strengthening CDC and national load dispatch centers – facilitating preparation of regulations.	Enhance integrated energy-water models, analytical tools and shared databases that enable assessment of options and impacts across both sectors.
	Investments	Promote/accelerate early-win grid strengthening and generation programs.	Phased investments to implement adequate SCADA, metering and communication systems in accordance to national needs and circumstances.	Identify consensus project to improve energy-water rational and effective use (e.g. irrigation and hydro-power rehabilitation and efficiency improvements).