



MINISTRY OF ENERGY AND INDUSTRY OF THE KYRGYZ REPUBLIC

Cooperation in the Energy Sector

Ministry of Energy and Industry of the Kyrgyz Republic

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Following investment projects
are implemented in the
energy sector to ensure
energy security of the
Kyrgyz Republic



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National Sustainable Development Strategy for 2013-2017

No	Project Name	Total estimated value (USD million)	Funding Source	Implementing period (years)
1	Modernization of Transmission Lines in Southern Kyrgyzstan	208,0	ExImBank, PRC	2011-2013
2	Construction of 500 kV Datkah-Kemin transmission line and 500 kV Kemin transforming substation	389,795	ExImBank, PRC	2012-2015
3	Construction of the Upper Naryn Chain of Hydropower Plants	727,65	Russian Federation	2013-2019
4	Commissioning of the Second Hydraulic Unit at Kambarata HPP-2	119,032		2014-2016
5	Feasibility study for Construction of Kambarata HPP-1	15,0	Russian Federation	2013-2014
6	Construction of Kambarata HPP-1	3400,0	Russian Federation	2013-2022
7	Construction of a double-circuit overhead line 110 kV and transforming substation 110/10 kV in Ak-Ordo community of Bishkek	5,0	Government of Turkey	2013-2014 completed



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National Sustainable Development Strategy for 2013-2017

No	Project Name	Total estimated value (USD million)	Funding Source	Implementing period (years)
8	Feasibility study for construction of Kara-Keche thermal power plant	5,0	ExImBank, PRC	2014-2016
9	At-Bashi HPP Reconstruction Project	22,2	Swiss Government	2014-2016
10	Energy Sector Rehabilitation Project	55,0	ADB	2013-2015
11	Bishkek CHP Modernization Project	386,0	ExImBank, PRC	2014-2017
12	Small HPP Development Project	49,3		2014-2017
13	Energy Sector Development Project	44,8	ADB	2013-2016
14	Power System Accountability and Reliability Improvement Project	15,0	WB	2014-2018
15	Distribution Companies Reform Project	15,0	ADB	2014-2016
16	Bishkek and Osh Power Supply Improvement Project	23,08	IsDB	2013-2015



Modernization of Transmission Lines in Southern Kyrgyzstan

- ❑ Project cost: USD 208 million (credit) funded by the Export-Import Bank of China.
- ❑ Project implementation period: 2011-2013
- ❑ The project is completed. Following facilities have been constructed: new transforming substation 500/220/35 kV Datkah and 220 kV transmission lines Datkah-Crystal, Datkah Uzlovaya, Datkah-Torobayeva, Uzlovaya-Lochin from the pole No.124 to a 220 kV transforming substation Alai; recharging 220 kV Kurpsay HPP – Torobayeva, and recharging 500 kV Toktogul - Lochin at a 500 kV transforming substation of Datkah (total length: 248.6 km); renovation of the existing 220 kV transforming substations Torobayeva, Uzlovaya, Alay, Crystal and Aigultash; replacement of relay protection and automation at Kurpsai HPP.
- ❑ On 12.03.2013, the State Commission signed state acceptance commission acts for these facilities.



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Construction of 500 kV Datkah-Kemin transmission line and 500 kV Kemin transforming substation

- ❑ Project Cost: USD 389.795 million (credit) funded by the Export-Import Bank of China.
- ❑ Project implementation period: 2012-2015
- ❑ The project includes:
 - construction of a 500 kV Datkah-Kemin overhead transmission line (405 km);
 - construction of a 500 kV Kemin autotransformer (3x167 MVA);
 - recharging the existing 220 kV overhead lines (42 km);
 - construction of the second-priority 500 kV Datkah transforming substation;
 - reconstruction of a dispatching and engineering communications system, relay protection and automated emergency control system in the North of Kyrgyzstan
- ❑ In 2012, two (2) 125 MVA autotransformers at Ala-Archa transforming substation were replaced with two 200 MVA autotransformers) under the project.



Construction of 500 kV Datkah-Kemin transmission line and 500 kV Kemin transforming substation

- ❑ **Construction of a 500 kV Datkah transforming substation:** construction and installation completed (casing equipment foundations, installation and assembly of equipment, laying substation cables, calibrating devices, high-voltage test of equipment, etc.). At present, the substation is in operation; remedial works are underway.
- ❑ **Construction of a 500 kV Kemin transforming substation:** construction works completed (trenching, casing, laying bricks for facilities, assembly of equipment, substation grounding, etc.). Assembling ORU-500 kV portals and lightning discharger at ORU-220 kV and 35 kV completed. Autotransformers are installed on the foundation. Works are currently suspended due to winter conditions.

Description	500 kV Datkah-Kemin overhead line	Completed, %	220 kV overhead line	Completed, %
Preparing driveways to concrete supports, units	515	55,4	54	45,4
Digging pits for concrete supports, units	621	66,9	96	80,7
Filling the support foundations with concrete, units	601	64,7	87	73,1
Installation of concrete supports, units	9	1		
Earthing concrete supports, units	57	6,1		



Construction of the Upper Naryn Chain of Hydropower Plants

- ❑ Agreement between the Government of the Kyrgyz Republic and the Government of the Russian Federation on construction and operation of the Upper Naryn chain of hydropower plants signed on September 20, 2012.
- ❑ Project cost: USD 727.65 million.
- ❑ Project implementation period: 2013-2019
- ❑ Construction of four hydropower plants with a total installed capacity of 237.7 MW:
 - Akbulun HPP – 87.40 MW, 345.50 million kWh;
 - Naryn HPP-1 – 47.70 MW, 187.52 million kWh;
 - Naryn HPP-2 – 47.60 MW, 188.85 million kWh;
 - Naryn HPP-3 – 55.00 MW, 220.54 million kWh.



Construction of the Upper Naryn Chain of Hydropower Plants

Following works are completed:

- ◆ Construction of the first priority facilities (administration building, hotel, canteen, first-aid station, shop, dormitory, fire branch);
- ◆ Concrete mixing plant (35m³/hour) is purchased in China, customs-cleared and delivered to the construction site;
- ◆ Three (3) 400 kVA transformers for the concrete plant, crushing and sorting facilities (CSF) and a rotation camp were delivered to the construction site. Construction of a transforming substation 35/10 kV started; 10 kV overhead lines were stringed to the rotation camp, pilot base and gravel deposit;
- ◆ Crushing and sorting facilities;
- ◆ Transforming substation 35/10 kV was put into operation;
- ◆ Water and sanitation facilities were built.



Construction of Kambarata HPP-1

- ❑ Agreement between the Government of the Kyrgyz Republic and the Government of the Russian Federation on construction and operation of Kambarata-1 was signed on September 20, 2012.
- ❑ Project implementation period: 2013-2022
- ❑ Completion of the feasibility study for the project: February-March 2014.



Construction of a double-circuit overhead line 110 kV and transforming substation 110/10 kV in Ak-Ordo community of Bishkek

- To finance the project, the Government of the Kyrgyz Republic issued resolution №234-p dated June 10, 2013, extending a credit of USD 5 million to the National Electric Grid of Kyrgyzstan from the loan provided by the Government of the Republic of Turkey.
- The project is completed. Following works are accomplished:
 - Construction of the first priority transforming substation 110 kV Ak-Ordo;
 - 110 kV overhead line Ak-Ordo (8.3 km);
 - 110 kV cell at 220 kV Ala-Archa transforming substation;



Emergency Recovery Project

- ❑ Project cost is USD 35 million (USD 19.25 million – Grant; USD 15.75 million. - Loan), funded by the World Bank.
- ❑ Project implementation period: 2010-2013
- ❑ Rehabilitation and maintenance of power supply (supply of equipment, materials, vehicles, etc.).
- ❑ Project closed on December 31, 2013.
- ❑ Special assistance was provided to utilities under this project.



Energy Sector Rehabilitation Project

- ❑ Total project funding will be USD 62 million, of which USD 55 million (89%) (USD 40 million on a grant basis, USD 15 million on a loan basis) will be provided by the ADB; USD 7 million (11%) will be provided by the Kyrgyz Republic as a co-financing.
- ❑ Project implementation period: 2013-2016
- ❑ The project includes:
 - Toktogul HPP rehabilitation;
 - establishment of the Payment settlement center;
 - examination of conditions and safety of dams at the Naryn chain of hydropower plants;
 - public awareness program.



At-Bashi HPP Reconstruction Project

- ❑ Financial Agreement between the Government of the Kyrgyz Republic, the Government of the Swiss Confederation and the JSC Power Plants (for the At-Bashi HPP Reconstruction Project) was signed in Bishkek on May 21, 2013.
- ❑ Swiss government will finance 80% (19.7 million Swiss francs) of the total project cost on a grant basis. Co-financing of the Kyrgyz side will be 20% (4.9 million Swiss francs).
- ❑ Project implementation period: 2014-2017
- ❑ The project envisages modernization of the HPP, as well as up to 10% increase in the HPP's installed capacity.



Bishkek CHP Modernization Project

- ❑ Loan Agreement between the Government of the Kyrgyz Republic and the Export-Import Bank of the People's Republic of China for the Bishkek CHP Modernization Project was signed in Bishkek on September 11, 2013.
- ❑ Contract value of the project is USD 386 million
- ❑ Project implementation period: 2014-2017
- ❑ The project includes:
 - dismantling boilers 1-8 and turbine generating units 1-4;
 - installing two coal-fired ultra-high pressure boilers (with a steam capacity of 550 t/hour);
 - installing 2 turbine generating units with heat extraction (150 MW each).



Energy Sector Development Project

- ❑ Total project cost is USD 56 million, of which USD 44.8 million (USD 28.09 million on a grant basis, and USD 16.71 million on a loan basis) is funded by the Asian Development Bank, and USD 11.2 million is provided by the Kyrgyz Republic as a co-financing.
- ❑ Project implementation period: 2013-2016
- ❑ The project consists of the following components:
 - automated monitoring and recording system (AMRS);
 - communications and dispatch control and recording system (CDCRS);
 - upgrading transforming substations;
 - study for establishment of a payment settlement center to settle payments for wholesale power supply transactions;
 - building capacity of corporate and financial management for the JSC National Electric Grid of Kyrgyzstan; implementation consultancy to assist the NEGK in project implementation;
 - supply of equipment, high-voltage power circuit-breaker (500kV, 220kV, 110kV, 35kV, 10/6kV), measuring current and voltage transformers, outdoor switchgear (KRUN (6/10 kV)) covers 54 transforming substations;



Bishkek and Osh Power Supply Improvement Project

- ❑ Total project cost is USD 25.68 million, of which USD 23.08 million (loan) is funded by the Islamic Development Bank, and USD 2.6 million is co-financed by the Government of the Kyrgyz Republic.
- ❑ Project implementation period: 2013-2015
- ❑ The project includes:
 - reconstruction of Ala-Archa, Kyzyl-Asker and Vostochnaya transforming substations in Bishkek;
 - reconstruction of Kara-Suu transforming substation in Osh region;
 - installation of a 220 kV overhead transmission line (charging the second circuit of the 220 kV Frunze-Ala-Archa overhead transmission line), 20 km.
 - Procedures for acquisition of land for construction purposes are completed.



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Power Distribution Network Performance Improvement Project Bishkek Municipal Network Improvement Project

- ❑ These two projects are financed by the German Development Bank (KfW). Total project cost is 33.6 million euros, of which 2 million euros are provided on a grant basis, and 31.6 million euros are provided on a loan basis.
- ❑ Project implementation period: 2011-2016
- ❑ The project includes:
 - supply of 110,136 electronic metering devices, including 78,702 single-phase meters and 31,434 three-phase meters);
 - supply of cables 35 kV (34 km), 10 kV (230 km) and self-supporting insulated conductor 0.4 kV (455 km);
 - supply 2,698 km of AVVG cables;
 - supply and installation of seven (7) 35 kV vacuum circuit breakers;
- ◆ Metering device installation activities are implemented in Kyzyl-Asker, Kyrgyziya-1, Chon-Arik, Archa Beshik community.
- ◆ Total number of meters installed in 2013: 8,405 units, of which:
 - ◆ single-phase meters – 5,966 units;
 - ◆ three-phase meters – 2,439 units;
- ◆ Total number of established hubs – 69 units.
- ◆ Total number of reinforced concrete poles installed since the start of this year (year-to-date): 173 units.



JSC KyrgyzGas transfer to the JSC Gazprom (Russia)

- ❑ Agreement between the Government of the Kyrgyz Republic and the Government of the Russian Federation on cooperation in transportation, distribution and sale of natural gas in the Kyrgyz Republic was signed in Moscow on July 26, 2013.
- ❑ OAO Gazprom guarantees investment of 20 billion rubles into modernization and reconstruction of gas infrastructure.
- ❑ Agreement is concluded for a 25 year period.
- ❑ The agreement provides for:
 - Uninterrupted supply of natural gas;
 - gas-main pipeline construction;
 - reconstruction of the existing pipelines;
 - new gasification of regions;
 - rehabilitation of the underground gas storage facilities;
 - design and development of new technologies;
 - joint research and development activities;
 - technical regulation in the gas industry.



CASA 1000 Project

- ❑ CASA 1000 Project (Central Asia - South Asia, 1,000 MW) aims to build high voltage power lines linking energy systems of the Kyrgyz Republic and the Republic of Tajikistan with the Islamic Republic of Afghanistan and the Islamic Republic of Pakistan for the export of electricity to the latter two countries.
- ❑ Total project cost is USD 1 billion; share of Kyrgyzstan is nearly USD 200 million.
- ❑ Project implementation period: 2014-2017
- ❑ Total length of the project's 500 kV power transmission line is 1,342 km. Length of the line from Datkah transforming substation to Khujand transforming substation is 477 km, of which length of the line running across the Kyrgyz Republic is 457 km.



Strategic Planning for Small Hydropower Development in the Kyrgyz Republic

- ❑ The project includes construction of four small hydropower plants, feasibility studies for which have been prepared:
 - Orto-Tokoy HPP in Issyk-Kul region (20 MW);
 - Oy-Alma HPP in Osh region (7.7 MW);
 - Sokuluk HPP-5 in Chui region (1.5 MW);
 - Tortgul HPP in Batken region (3 MW);
- ❑ Total project cost: USD 49.3 million;
- ❑ Project implementation period: 2014-2017.



Kyrgyzstan-China Gas Pipeline Construction

- ❑ Agreement between the Government of the Kyrgyz Republic and the Government of the People's Republic of China on cooperation in construction and operation of the Kyrgyzstan-China gas pipeline was signed in Bishkek on September 11, 2013.
- ❑ Project cost: USD 1.2-1.4 billion.
- ❑ Project implementation period: 2014-2016.
- ❑ The project includes construction of a linear gas pipeline (215-225 km) in the Kyrgyz Republic with the ultimate objective of increasing the national budget revenues.



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Projects proposed for 2014



Commissioning of the Second Hydraulic Unit at Kambarata HPP-2

- ❑ Installed capacity is 360 MW (3 units x 120 MW); water reservoir capacity is 0.07 billion m³ (of which, useful capacity is 0.0075 billion m³); annual power generation is 1.1 billion kWh
- ❑ Project cost is USD 119.032 million.
- ❑ Project implementation period: 2014-2016.
- ❑ When the 2nd hydraulic unit (120 MW) is put into operation, the hydropower plant will generate additionally 450-500 million kWh per year.



Power Supply Improvement in Arka, Batken Region

- ❑ Power Supply Improvement in Arka, Batken Region
- ❑ Total estimated project cost is USD 18.00 million. IsDB is expected to finance 90% of the project cost (11.00 million Islamic Dinars; approximate equivalent of USD 16.25 million), while the Government of the Kyrgyz Republic will co-finance USD 1.75 million (10%).
- ❑ Project implementation period: 2014-2016.
- ❑ The project includes:
 - construction of a new 110 kV overhead transmission line (51 km);
 - construction of a new 110/35/10 kV Razzakova transforming substation;
 - reconstruction of the existing 110/35/10 kV Arkah transforming substation.



Power System Accountability and Reliability Improvement Project

- ❑ The World Bank's energy sector mission discussed with the JSC Severelectro measures to execute a project preparation facility (grant). JSC Severelectro will be the recipient of the grant that will be used to assist in five areas; JSC Severelectro is expected to meet several conditions.
- ❑ On August 12, 2013, JSC Severelectro signed USD 480 million-worth grant agreement with the World Bank for the preparation for implementation of a new investment project (Power System Accountability and Reliability Improvement).
- ❑ Feasibility study for the project is under preparation; preparations are made for the implementation of this project.



Distribution Companies Reform Project

- ❑ The Energy Sector Reform Action Plan for 2013-2014, approved by resolution of the Government of the Kyrgyz Republic No.299-p dated July 24, 2013, envisages reform and better regulation of the energy sector.
- ❑ Project is negotiated with the Asian Development Bank.



Energy Sector Reform Action Plan for 2013-2014

Goals and objectives:

- ◆ Energy sector regulation reform and improvements;
- ◆ Modernization and management;
- ◆ Ensuring sufficient revenues for the reconstruction and modernization of the energy system to restore uninterrupted power supply to consumers;
- ◆ Reconstruction and modernization of the energy sector;
- ◆ Reduction of power losses;
- ◆ Improving service quality and public confidence.



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Thank you!