



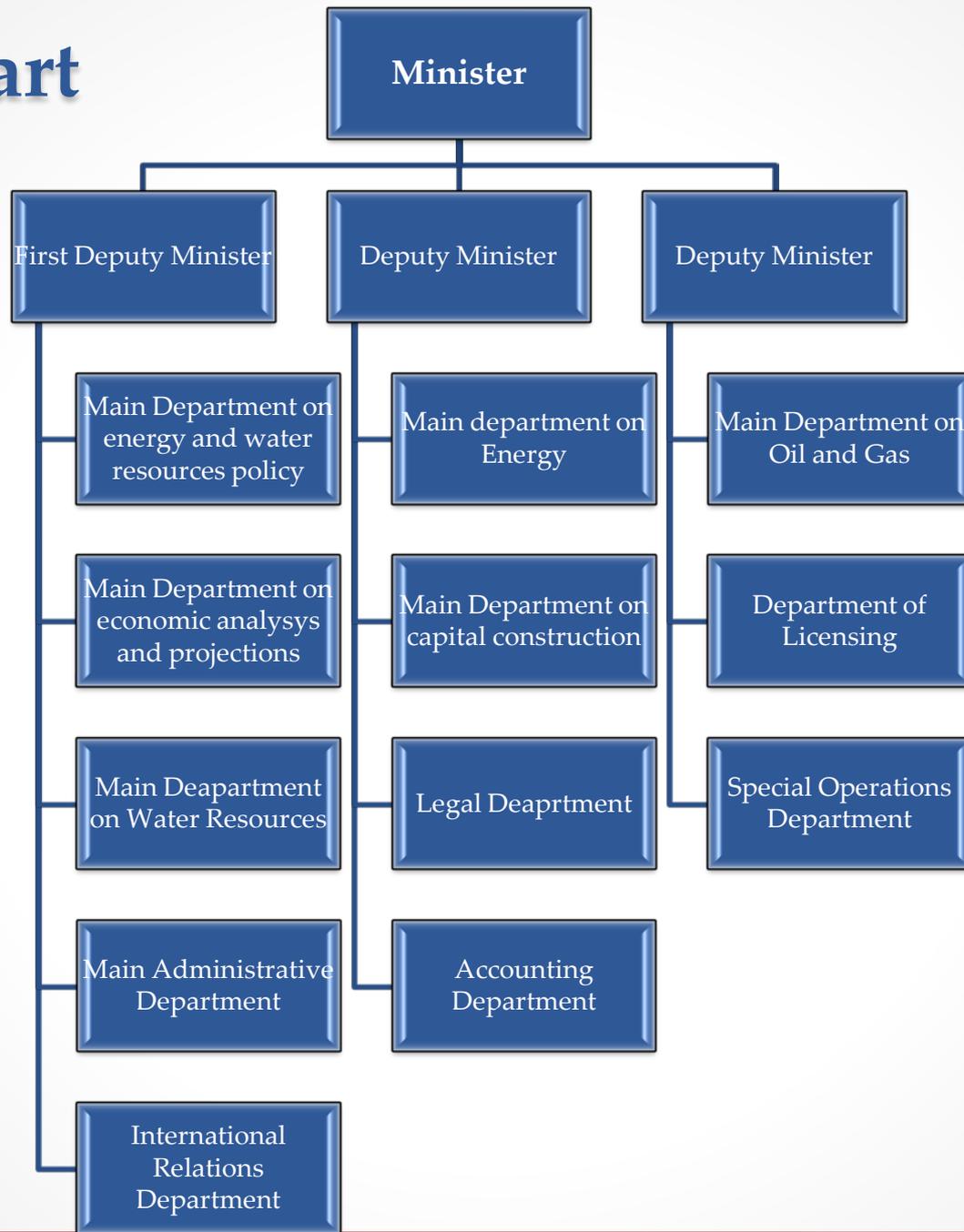
Energy Policy

Ministry of Energy and Water
Resources of the Republic of

Tajikistan



Bar Chart



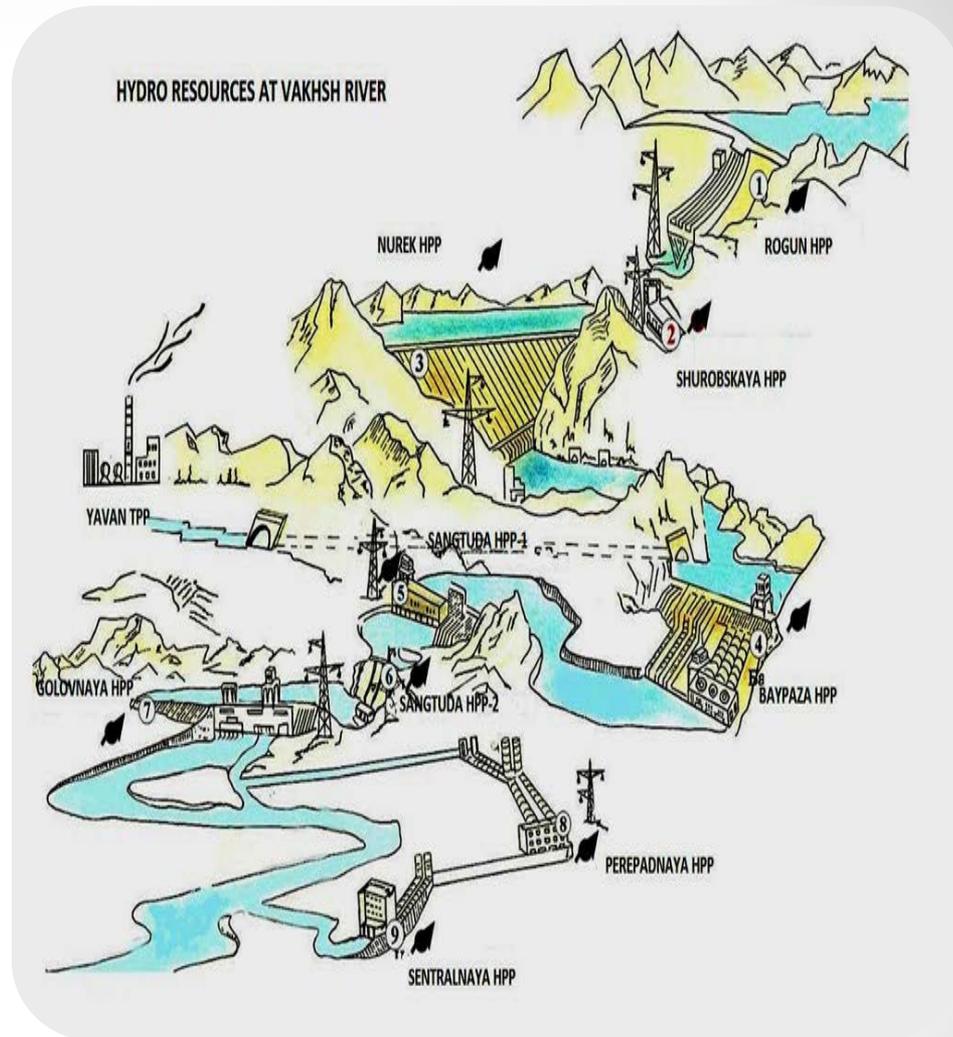
Basic information

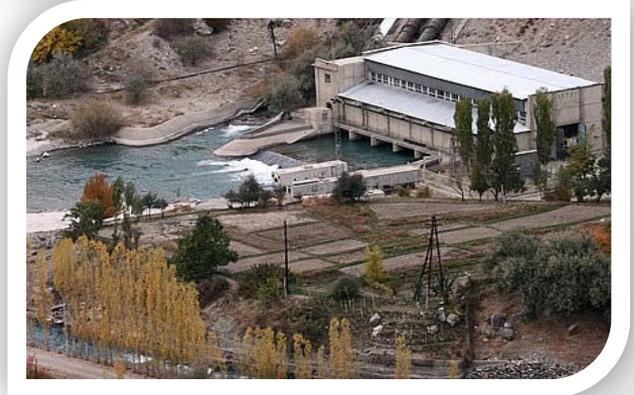
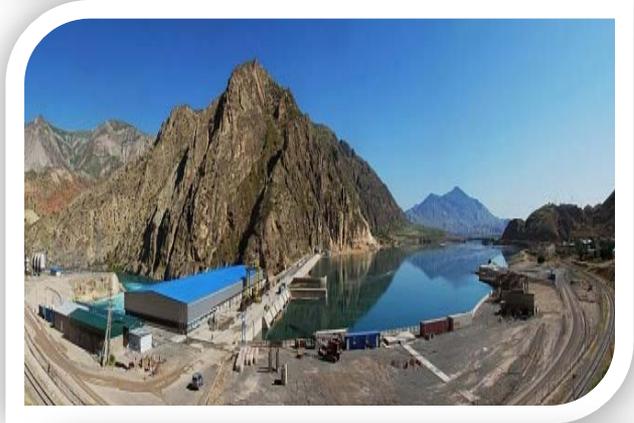


AREA:	143 thousand. km2 (93% of the territory is covered by mountains)
Population:	8,2 mln. people
Capital:	Dushanbe city
Independence:	9 September 1991
Neighbors:	China, Afghanistan, Uzbekistan, Kyrgyzstan
GDP	7,862 (WB 2012 census)
Fiscal year	From January 1st to December 31 st
Climate:	Continental (at the same time in different parts of the country there is a temperature of -40 ° C to +45 ° C)
Currency	Somoni TJS

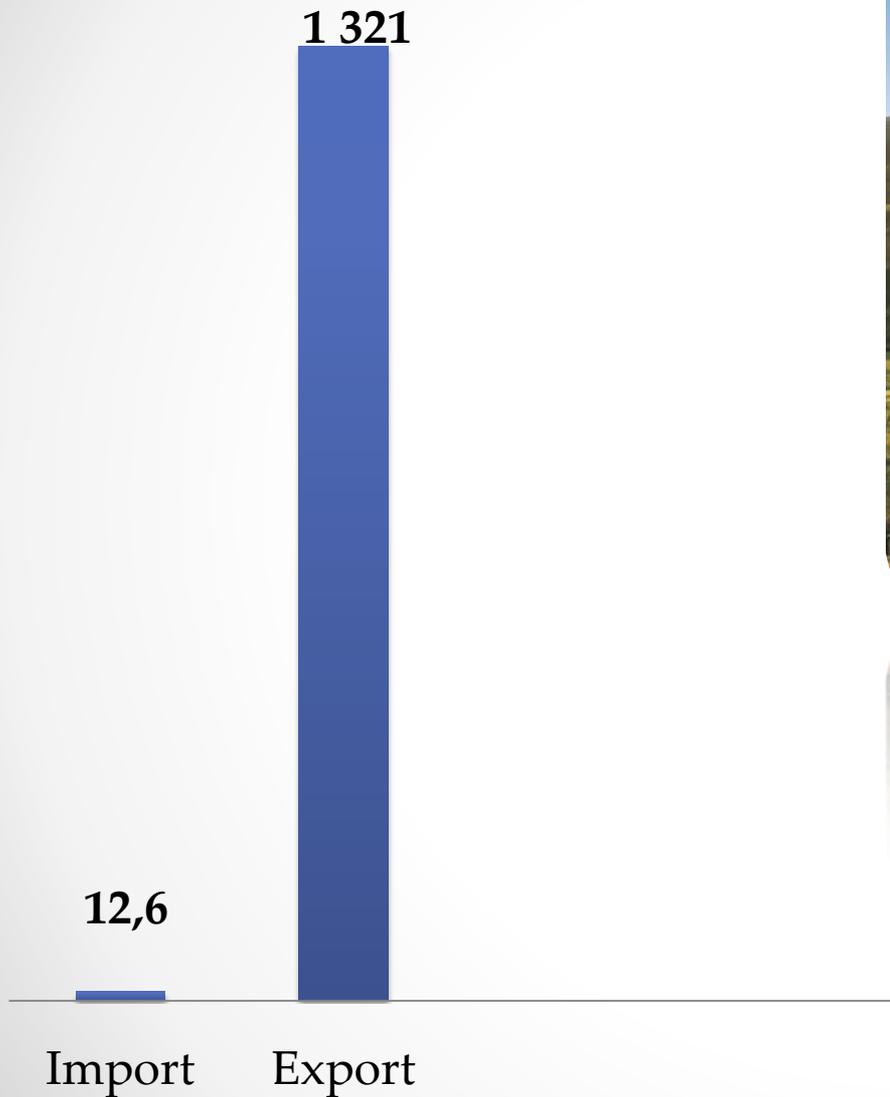
Installed capacity

Item	Capacity MW
Nurek HPP	3000
Baypaza HPP	600
Sangtuda – 1 HPP	670
Sangtuda – 2 HPP	220
Golovnaya HPP	240
Perepadnaya HPP	29,5
Sentralnaya HPP	15,1
TPP of Dushanbe -1	318
The first phase TPP of Dushanbe - 2	100

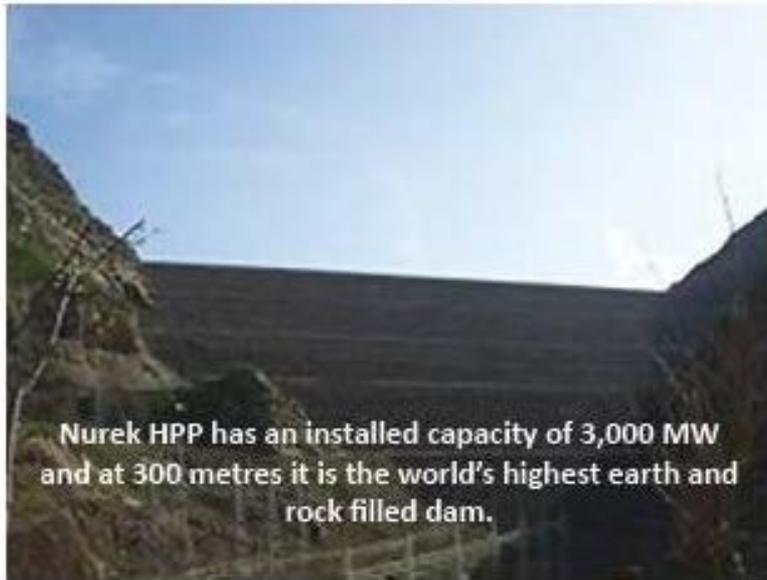




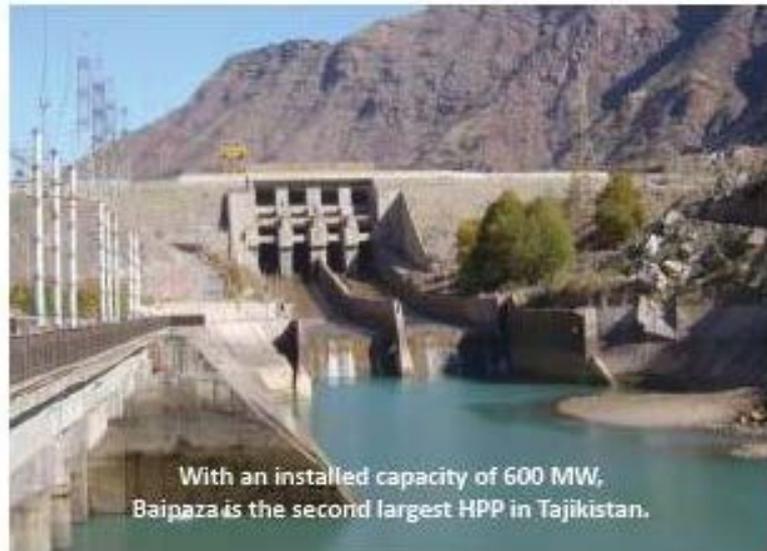
Energy Situation



HYDROPOWER



Nurek HPP has an installed capacity of 3,000 MW and at 300 metres it is the world's highest earth and rock filled dam.



With an installed capacity of 600 MW, Baipaza is the second largest HPP in Tajikistan.

Tajikistan possesses an estimated 527 billion kWh per year in reserves of hydropower generation of which it is currently technically possible to develop over 50% (280 billion kWh). This is three times greater than the current combined consumption of electricity throughout the whole of Central Asia.

95% of Tajikistan's electricity generation is provided by only 5% of the potential hydro generation capacity that is currently being utilised

Tajikistan possesses vast and unique reserves of hydropower resources which will play an essential role in restoring economic prosperity to Tajikistan through the export of electricity. To realize this potential, significant foreign investments will be needed.



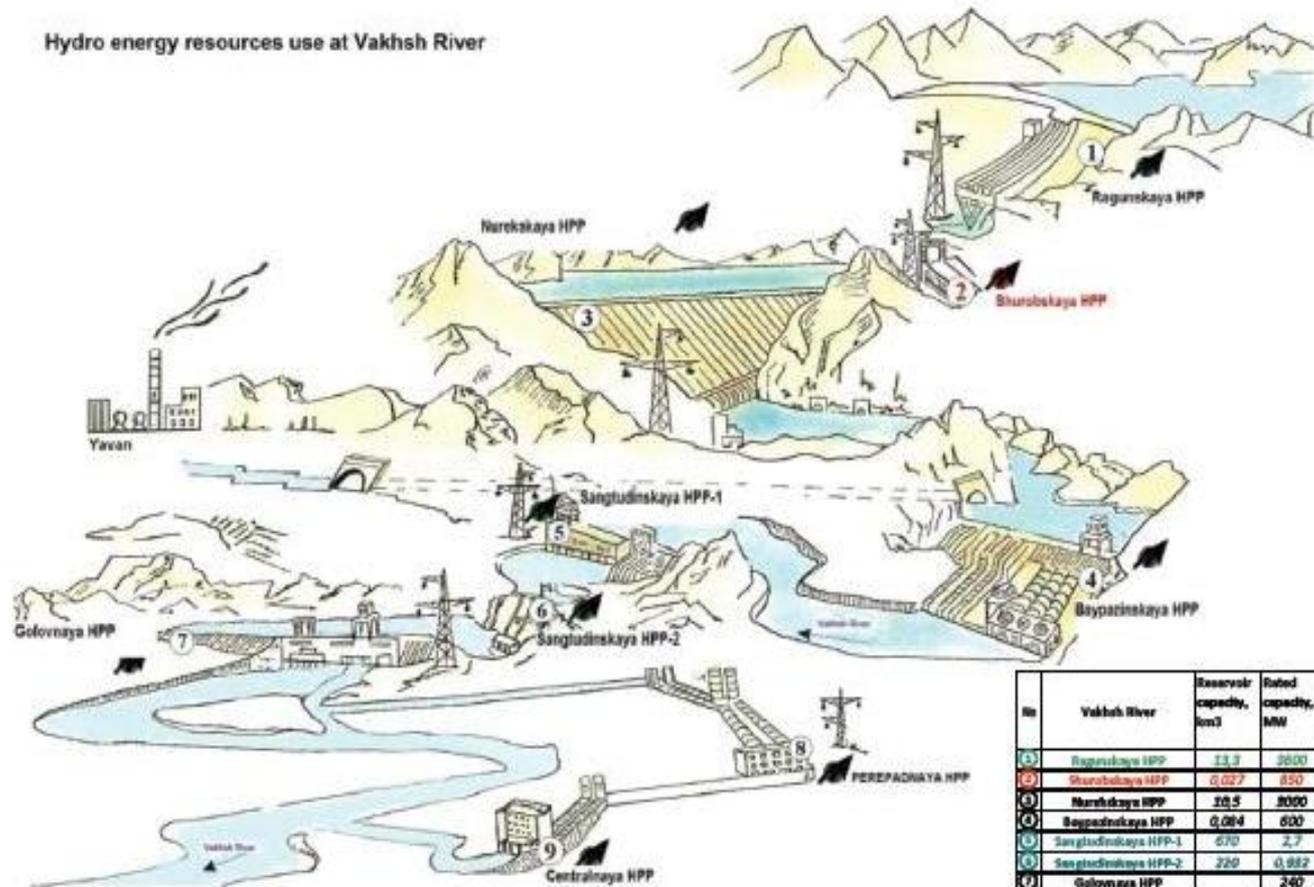
<u>Total Large HPPs Capacity</u>	
<u>Large HPPs</u>	<u>Capacity (MW)</u>
Nurek HPP	3,000
Baipaza HPP	600
Vakhsh Cascade (including)	285
Golovnaya HPP	240
Perepadnaya HPP	30
Centralnaya HPP	15
Varzob Cascade	25
Kairakkum HPP	126
Sangtuda 1	670
Sangtuda 2	220
Total	5,211

HYDRO ENERGY RESOURCES ON THE VAKHSH RIVER

There are currently eight HPPs situated on the Vakhsh River with a feasibility study currently being undertaken to complete a ninth - the Rogun HPP which will be located at the head of the Vakhsh River and which has a designed capacity of 3,600 MW's.

The potential energy resources on the Vakhsh River alone are estimated to be 75.5 TWh/year.

Hydro energy resources use at Vakhsh River

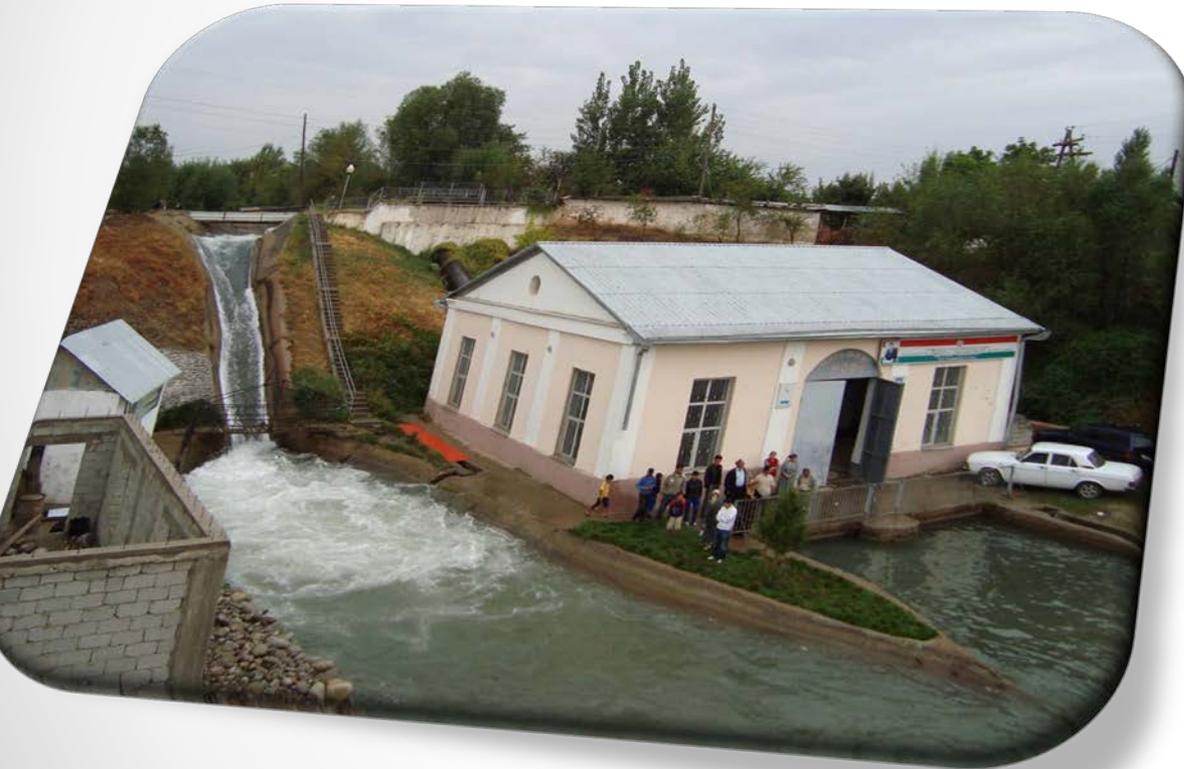


No	Vakhsh River	Reservoir capacity, km ³	Rated capacity, MW	Power output, bn.kWh/year	Project cost, USD mln
1	Rogunskaya HPP	13.3	3600	13.0	543.3
2	Shurobskaya HPP	0.027	850	2.1	98.7
3	Narekskaya HPP	18.5	8000	11.2	
4	Baypatinskaya HPP	0.064	600	2.9	
5	Sangtudinskaya HPP-1	0.70	2.7	2.5	482.3
6	Sangtudinskaya HPP-2	220	0.882	0.665	220
7	Gofornaya HPP		240	0.95	
8	Perekopnaya HPP		28.95	0.21	
9	Centralnaya HPP		15.1	0.154	

POTENTIAL HYDRO ENERGY RESOURCES RESERVES

RIVERS	ANNUAL POWER (MW)	ANNUAL ENERGY (TWh)	%
Vakhsh	28,670	251.15	48.25
Panj	14,030	122.90	23.60
Zeravshan	3,875	33.94	6.52
Kafarnigan	4,249	37.22	7.15
Gunt	2,260	19.80	3.80
Bartang	2,969	26.01	5.00
Vanj	1,191	10.34	1.99
Yazgulom	845	7.40	1.42
Kizil-Su	1,087	9.52	1.83
Sir-Darya	260	2.28	0.44
Total	59,436	520.56	100

MINI HYDROPOWER



In addition to the large hydropower stations, Tajikistan also generates 28.4 MW of its total capacity mainly from mini-hydro plants on smaller secondary streams. Under the “Long Term Program of Building Small Hydroelectric Power Stations 2009 -2020” however it is intended to increase the power generated in this way to 118 MW.

THERMAL GENERATION



The First Phase of Heat and Power Station “Dushanbe-2” with capacity of 100MW been already implemented in 2014. The construction of second phase of Heat and Power Station “Dushanbe-2” with capacity of 300 MW already begun and going on.

TRANSMISSION SYSTEM



TRANSMISSION INTERCONNECTIONS

Tajikistan's transmission system is connected to Kyrgyzstan through a 53 km 220 kV transmission line from the Kanibadam substation in Tajikistan to the Aigul-Tash substation in Kyrgyzstan and to Afghanistan through a 220 kV double circuit transmission line from Sangtuda in Tajikistan to Pul-e-Khumri in Afghanistan.

CENTRAL ASIA SOUTH ASIA ELECTRICITY TRANSMISSION PROJECT (CASA 1000):



Kyrgyzstan, Tajikistan, Afghanistan and Pakistan are pursuing the development of electricity trading arrangements through the establishment of the Central Asia - South Asia Regional Electricity Market (CASAREM).



Project

The major share of power will be used by Pakistan, while a relatively smaller quantity of power (up to 300 MW) will be imported by Afghanistan. The HVAC transmission line route commences at the Datka substation in Kyrgyzstan and terminates at Khujand substation in Tajikistan. The HVDC converter stations are located at Sangtuda-1 (1,300 MW), Kabul (300 MW) and Peshawar (1,300 MW) The length of the transmission line route is:

- 450 km - 500 kV HVAC transmission line between Kyrgyzstan (430 km) and Tajikistan (20 km)
- 750 km - 500 kV HVDC transmission line between Tajikistan (117 km) through Afghanistan (562 km) to Pakistan (71 km)
- HVDC converter stations at Sangtuda-1 (1,300 MW), Kabul (300 MW) and Peshawar (1,300 MW)

OIL AND GAS

The following oil and gas companies are operating in Tajikistan:

Swiss-Tajik JV "Somon Oil"

SUE "Naftugaz va angisht"

JV "Petroleum Sugd"

OJSC "Gazprom"

CJSC "Khasan K"

LLC "Shokhon"

LLC "Salosa"



Production sharing agreements have also been signed between the Government of the Republic of Tajikistan and the following companies:

- Kulob Petroleum Limited
- Somon Oil

Major difficulties of power supply currently faced in the country

ALMOST 98% OF POWER IN TAJIKISTAN PRODUCED BY HPPS. EXCESS POWER REACHES 5-7 BKWH DURING SUMMER PERIOD, WHICH MEANS FREE – RUNNING OF WATER. HOWEVER 3 BKWH SHORTAGE OCCURS DURING WINTER PERIOD. BELOW IS THE MAJOR DIFFICULTIES OR ISSUES FACED CURRENTLY IN OUR COUNTRY:

- Shortage of power supply during winter period is 3 BKwH.
- Many HPP working with old resources. Shortage and loss also occurs because of transmission and distribution system.
- Issues in management, operation and financial activity of the Power Supply field.
- Issues in 24 hr supply of power.
- Decrease of energy loss up to 13.2%.
- Lack of enough sources for improvement of alternative source of energy (coal, gas and Hydro Power).
- Increase of average cost for power.
- Improve Coal production – up to 500 thousand ton;
- Improve Oil production up to 29430 thousand ton;
- Improve Gas production up to 21600 thousand m³;
- Reach energy independence for Republic of Tajikistan;



Improvement of efficiency on Power supply system

- Try all the best for improvement of energy efficiency and reducing power loss all over the country;
- Implement of SCADA system/ Modernization of National Monitoring Center

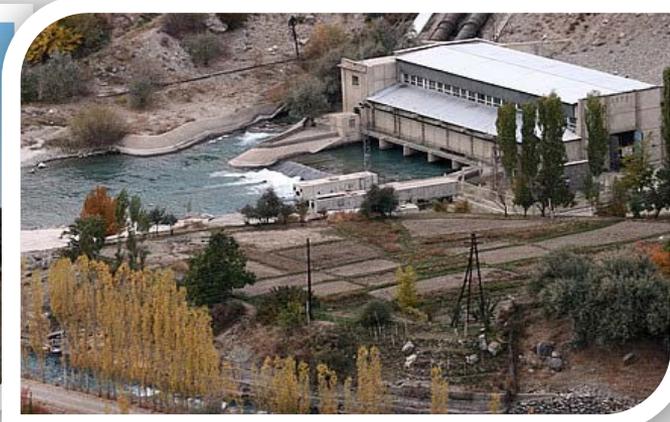
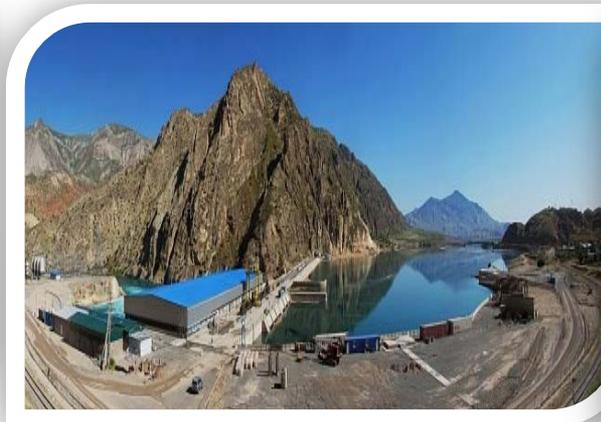
Resolve shortage of Energy supply during Winter Period

- Rehabilitate and Improvement of current Resources (Nurek HPP, Qairokum HPP, Golovnoy HPP etc.)
- Improvement of power transmission system;
- Support Regional initiatives for widening import/export ability of the country

Strengthening of Management system

- Improve commercial, operational, financial activity of Power supply companies, including realization of National program for conversion “ *Barqi Tojik* in 2011-2018 years* ” .

**Barqi Tojik - Main Power Supply Company in Tajikistan*





**THANK YOU FOR YOUR
ATTENTION !!!**