



TAJIKISTAN'S HYDRO POWER POTENTIAL

MFA, Tajikistan-2011

I. WATER RESOURCES

Leading position in water formation in Amu-Darya and Syr-Darya Basins



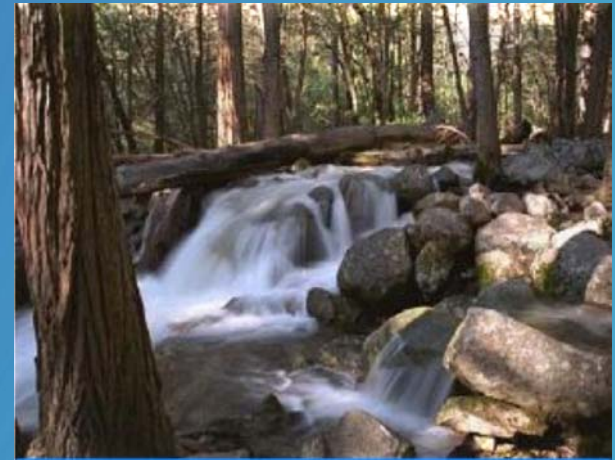
in average 64km³ per year

Tajikistan	-	55.4%
Kyrgyzstan	-	25.3%
Afghanistan and Iran	-	7.8%
Uzbekistan	-	7.6%
Kazakhstan	-	3.95%

II. HYDROPOWER RESOURCES

Unique Hydro Energy Resources

- Second Among CIS Countries
- Eights in the World
4% of World's resources that is equal to 527 billion kWh in one year



This is 3 times more than present annual consumption of energy in Central Asia.



III. CURRENTLY INSTALLED CAPACITIES

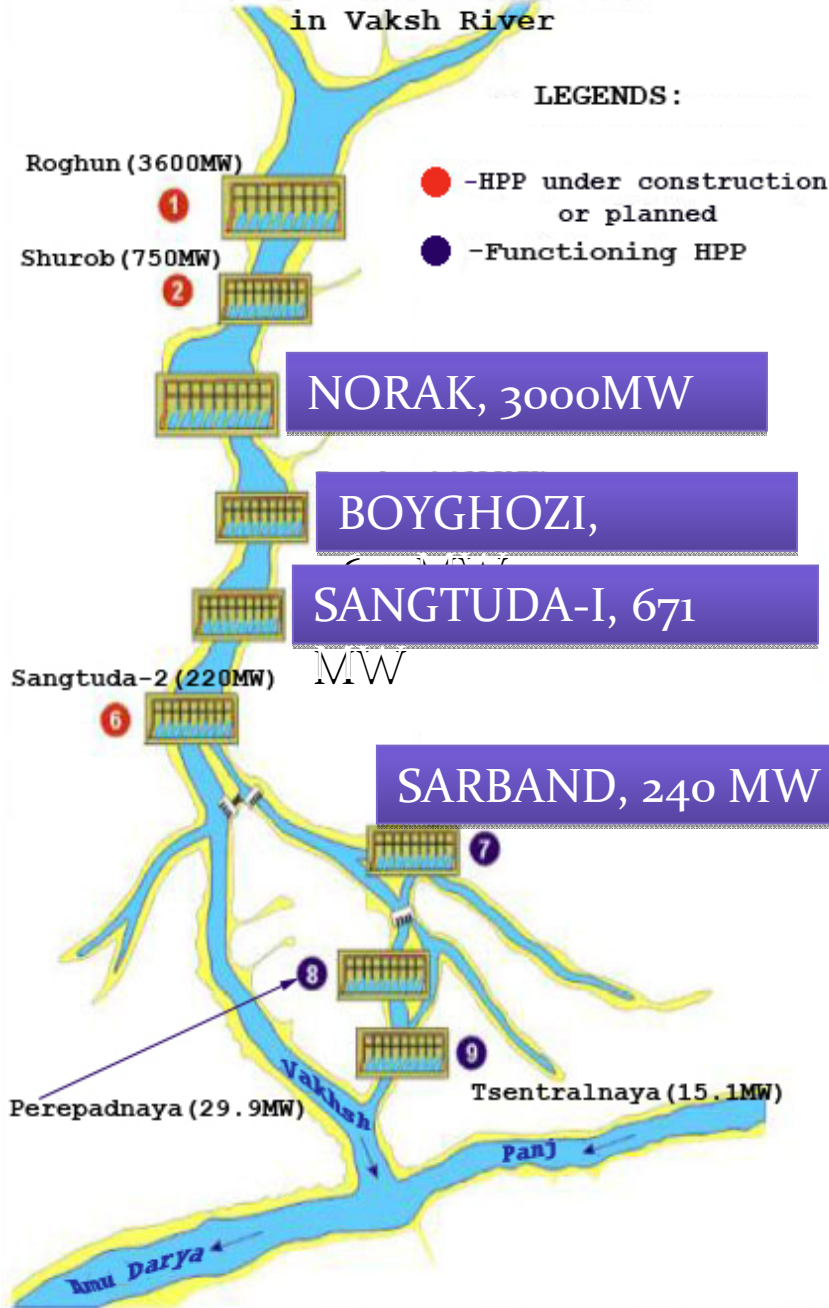
Currently installed capacity of hydro power plants (HPP) is 4741 thousand kW;

Main Hydro Power Plants:

Name	Installed Capacity in thousand kW	Energy generation in Mln. kWh annually
Norak	3000	11200
Boyghozi	600	3500
Sangtuda-1	671	2700
Sarband	210	1300

CURRENTLY INSTALLED CAPACITIES

Scheme of Coordinated Hydroelectric System in Vakhsh River



All four abovementioned HPP are on Vakhsh River.

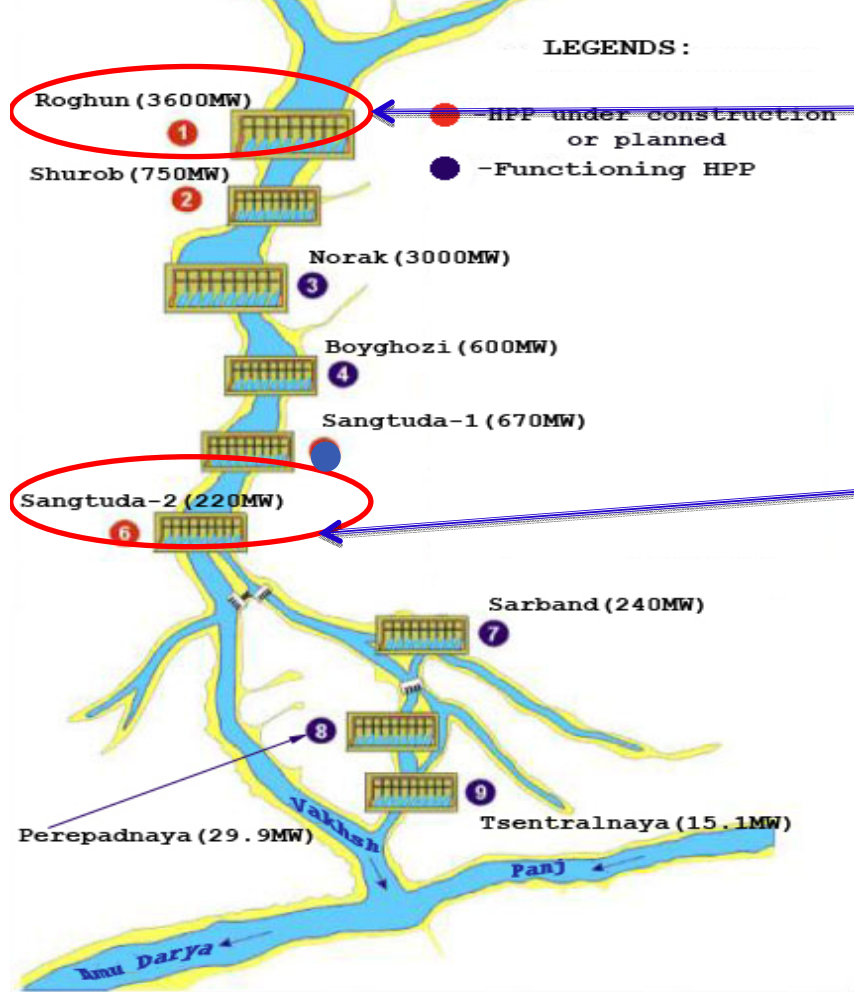
There is also Qayroqum HPP in the northern part of country on river Syr Darya with installed capacity of 126 MW



IV. FUTURE PLANS/PROJECTS

A) CONSTRUCTION OF NEW HPP

Scheme of Coordinated Hydroelectric System in Vaksh River



HPPs UNDER CONSTRUCTION:

1. ROGHUN

2. SANGTUDA-2

IV. FUTURE PLANS/PROJECTS, CONTINUE

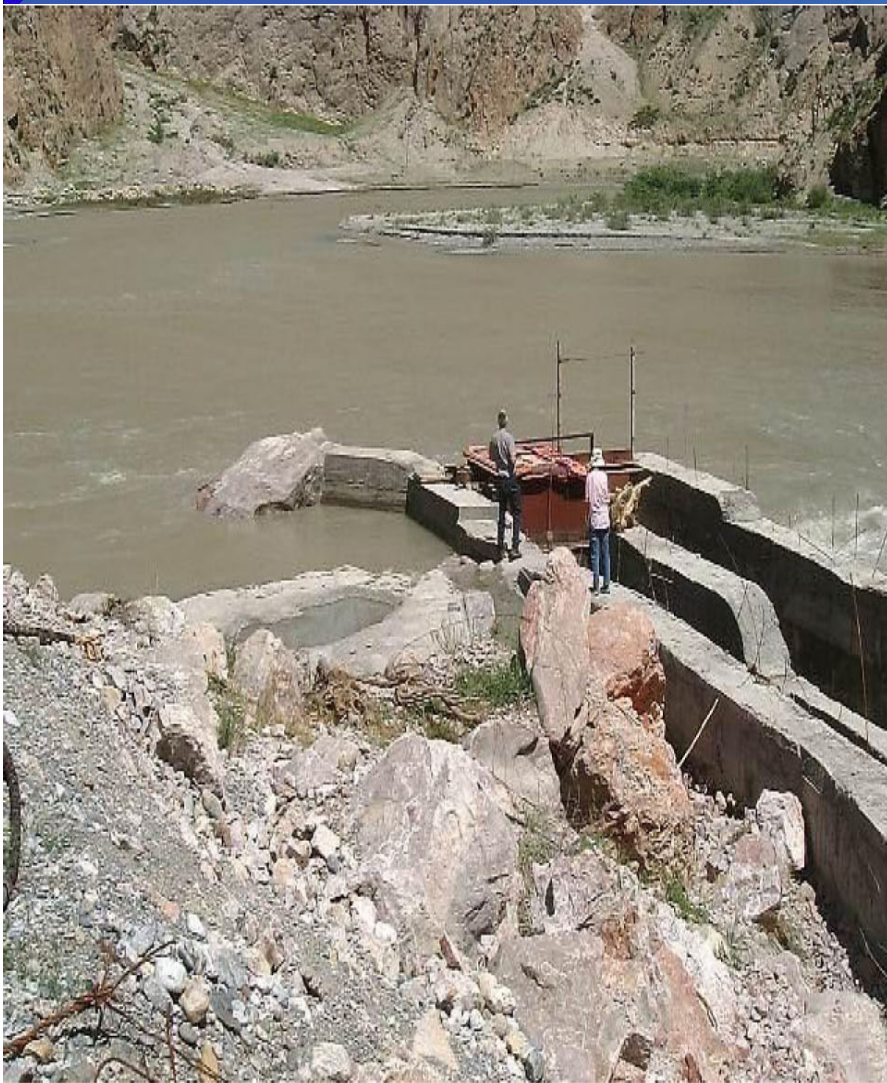
ROGHUN HPP



- THE BIGGEST HYDRO POWER PLANT IN CENTRAL ASIA WITH DAM HEIGHT OF 335M.
- CONSTRUCTION STARTED IN 1976.
- THE ESTIMATED CAPACITY OF ITS 6 GENERATORS IS 3600 MW, OR 13.1 BLN. KWH ANNUALLY.

IV. FUTURE PLANS/PROJECTS, CONTINUE

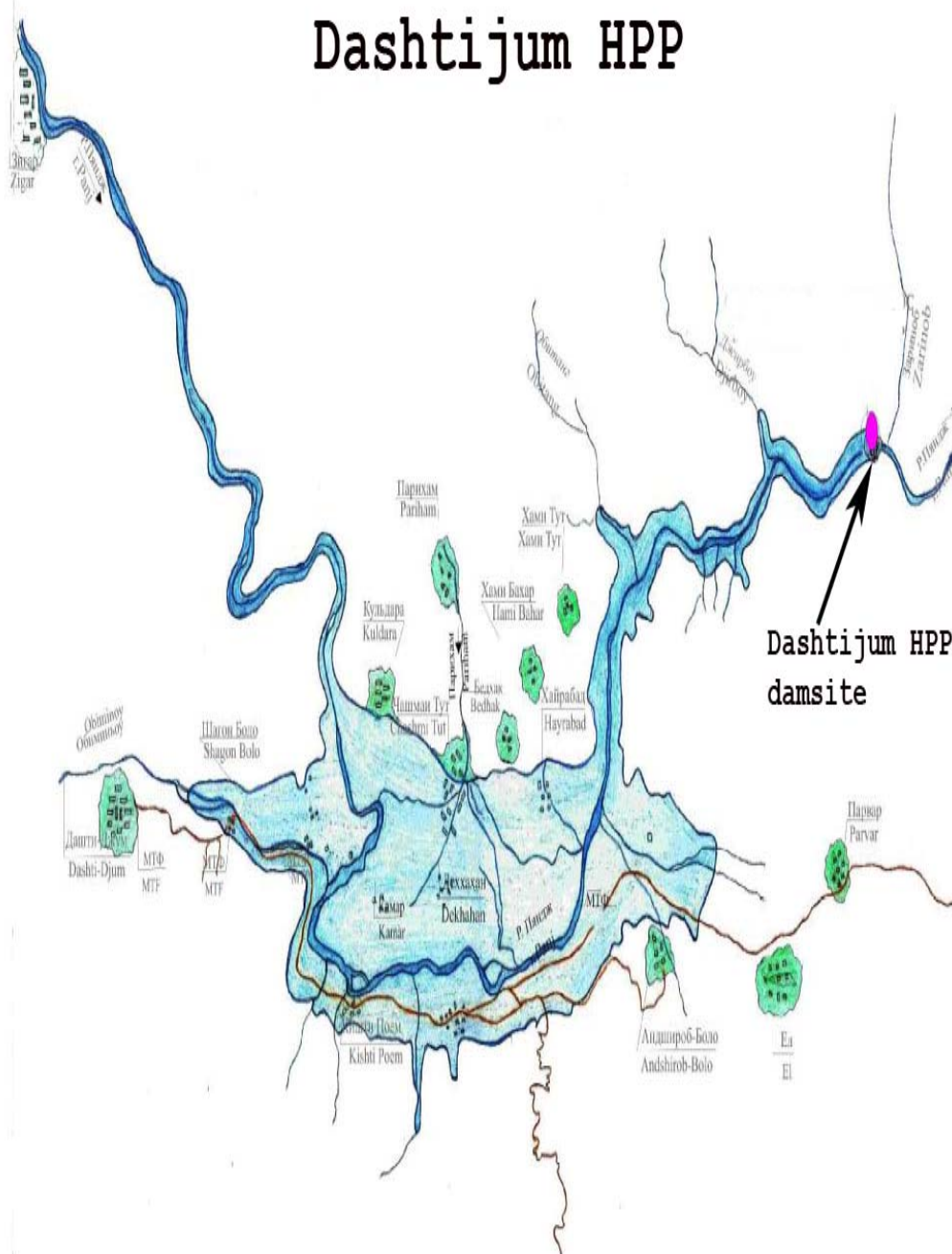
SANGTUDA-2 HPP



- CONSTRUCTION STARTED IN 2006.
- THE ESTIMATED CAPACITY OF ITS 4 GENERATORS IS 220 MW, OR 0.9 BLN. KWH ANNUALLY.
- THE PROJECT IS FULLY FINANCED AND IS BEING IMPLEMENTED BY I.R.IRAN ACCORDING TO THE MOU SIGNED BETWEEN THE GOVERNMENTS OF TAJIKISTAN AND IRAN.

IV. FUTURE PLANS/PROJECTS, CONTINUE

Dashtijum HPP



Among others, Dashtijum HPP is the most attractive with its capacity of 4000 MW, and 17.6 km³ water basin.

IV. FUTURE PLANS/PROJECTS, CONTINUE



Preliminary Economic And Technical Characteristics of Dashtijum HPP:

Cost of the project, bln. USD	3.2
Dam's height, m.	320
Reservoir 's capacity, mln. m ³ :	total
	needed
	17.6
	10.2
Length of reservoir, km	70
Projected capacity of the plant, MW	4000
Annual energy generation, kWh	15.6 bln.
Cost of investment per 1 kW	USD 800

IV. FUTURE PLANS/PROJECTS, CONTINUE

Prospective energy generation potential by rivers

4. Other rivers

Kofarnihon River : 5 stations, with general capacity of 411 MW;

Varzob River: 3 stations, with general capacity 100 MW;

Zarafshon River : 6 stations, with general capacity of 640 MW;

Fon Daryo River : 4 stations, with general capacity of 510MW;

Mascho District's rivers (Upstream of Zarafshon): 5 stations, with general capacity of 500 MW;



FUTURE PLANS OF TAJIKISTAN ON POWER TRANSMISSION LINES

CONSTRUCTION OF POWER TRANSMISSION LINES

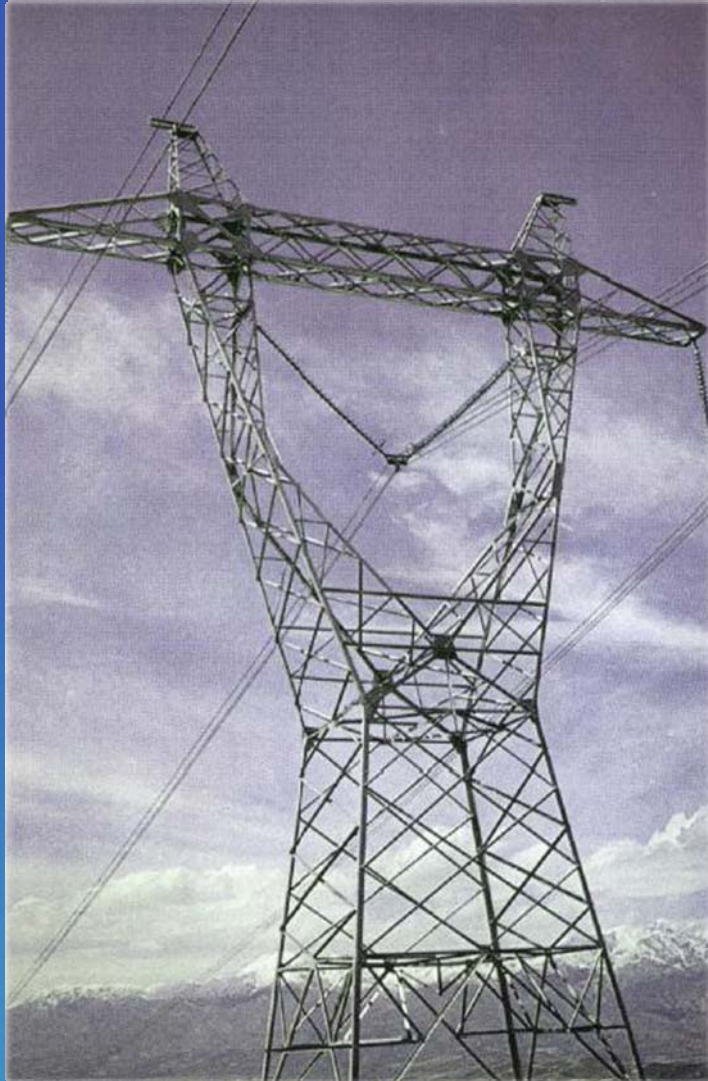


There are number of projects for diversification of power transmission lines being implemented or are under consideration.



CASA 1000

Interconnection of Kyrgyzstan,
Tajikistan, Afghanistan and
Pakistan



Kyrgyzstan and Tajikistan



Afghanistan and Pakistan

CASA 1000

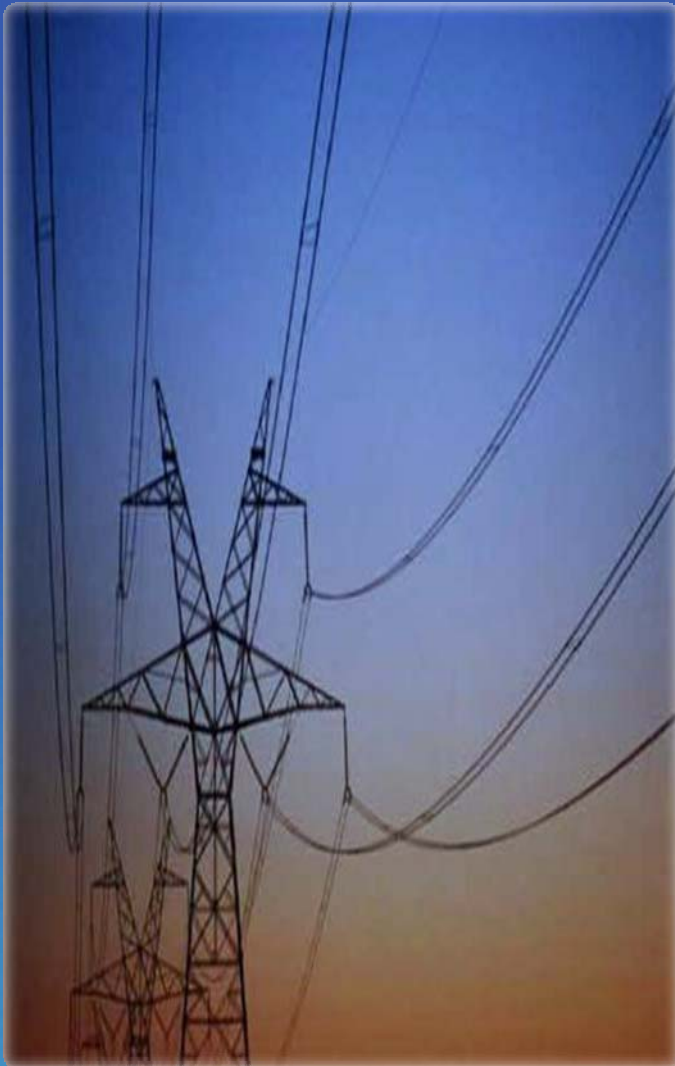


Relevant agreement on development of the CASA 1000 Power Transmission Line Project among Tajikistan, Afghanistan, Kyrgyzstan and Pakistan was signed on August 4, 2008 in Islamabad.

At present Parliaments of Tajikistan and Afghanistan have ratified current document.

Feasibility study of the Project is being conducted by international consultants.

CASA 1000



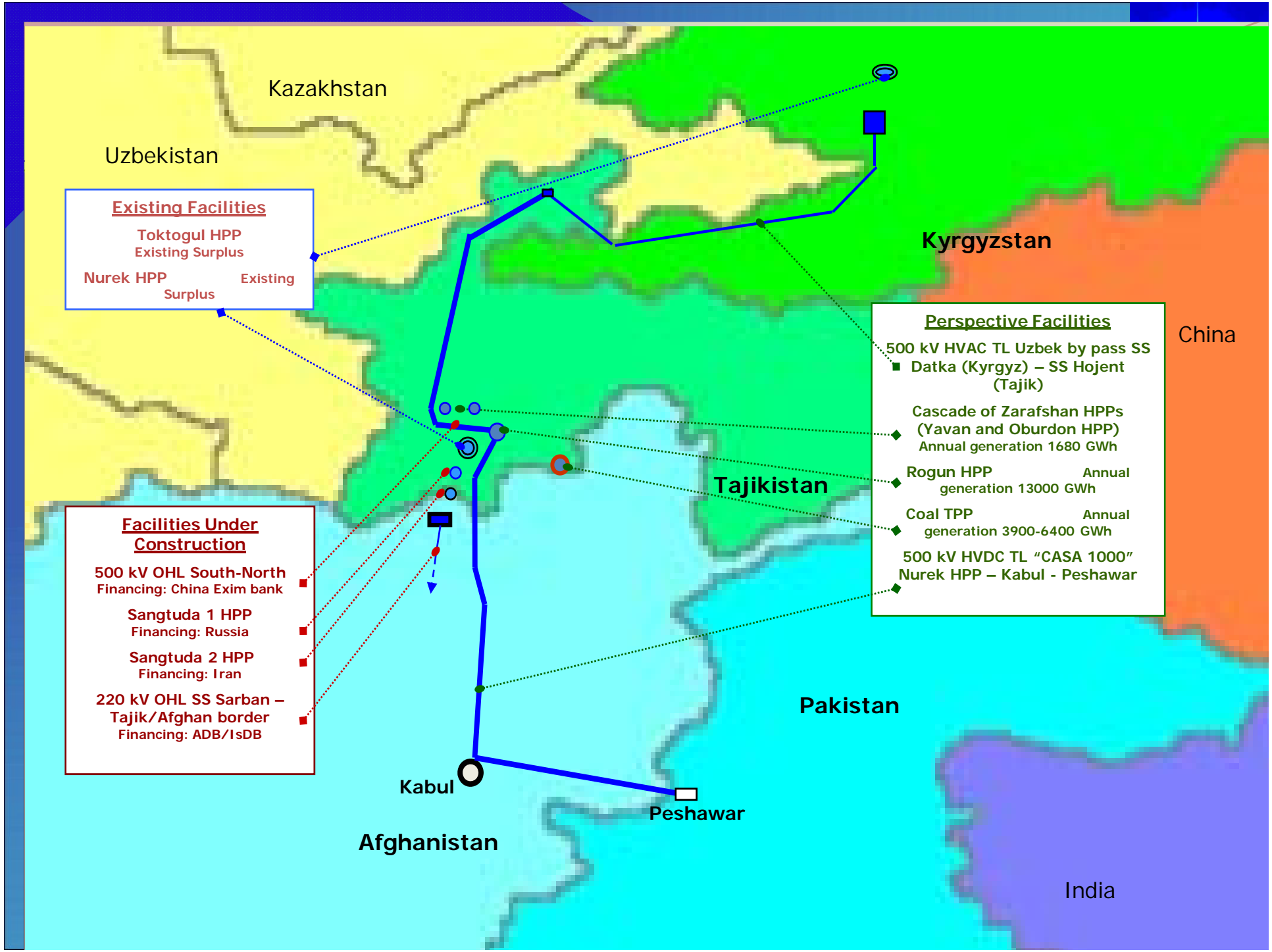
The length of power transmission line is 750 km, including:

AC Transmission Line Between Kyrgyzstan and Tajikistan

1300MW AC/DC Transformer station in Sangtuda (Tajikistan)

300MW DC/AC Transformer station in Kabul (Afghanistan)

1000MW DC/AC Transformer station in Peshawar (Pakistan)



Existing Facilities

- Toktogul HPP
Existing Surplus
- Nurek HPP
Existing Surplus

Facilities Under Construction

- 500 kV OHL South-North
Financing: China Exim bank
- Sangtuda 1 HPP
Financing: Russia
- Sangtuda 2 HPP
Financing: Iran
- 220 kV OHL SS Sarban –
Tajik/Afghan border
Financing: ADB/IsDB

Perspective Facilities

- 500 kV HVAC TL Uzbek by pass SS
- Datka (Kyrgyz) – SS Hojent (Tajik)
- Cascade of Zarafshan HPPs (Yavan and Oburdon HPP)
Annual generation 1680 GWh
- Rogun HPP
Annual generation 13000 GWh
- Coal TPP
Annual generation 3900-6400 GWh
- 500 kV HVDC TL "CASA 1000"
Nurek HPP – Kabul - Peshawar

Kazakhstan

Uzbekistan

Kyrgyzstan

China

Tajikistan

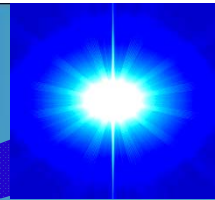
Pakistan

Afghanistan

Kabul

Peshawar

India



Sangtuda - Puli Khumri (Afg.)



A double-circuit 220 kV transmission line with capacity of 300MW.



Sangtuda - Puli Khumri - Mazari Sharif - Herat - Mashhad(Iran)



According to preliminary studies it would be 500kV AC transmission line or DC line with capacity of more than 1000MW.

Feasibility study of the project is being prepared by Tajik and Iranian experts.



The END