

List of hydropower stations in the Republic of Tajikistan

n	Name and location	Specifications	Condition	Impact on river flow
OPERATING				
1.	Nurekskaya HPS Vakhsh river (tributary of Amudarya river), 75 km from Dushanbe	Capacity - 3000 Megawatt, units – 9, power generation – 11,4 billion kWt/hour, reservoir capacity: total storage - 10,5 km ³ , usable storage - 4,5 km ³ , dam height - 300 m, water surface area - 98 km ² .	Operates since 1972; commissioning of last unit was in 1980; HPS operates at full capacity and generates 80% of all electricity in RT; reconstruction is needed.	Irrigation and energy purposes. Reservoir with seasonal and partly over-years regulation controls 40% flow of the Vakhsh river. Last years the waterworks facility operates in the energy (electricity producing) mode resulting in river flow decrease in vegetation period and river flow increase in nonvegetation period that is a flow variability smoothing within-year. Such an operation mode of the Nurek reservoir lead to decrease of water supply for irrigated lands in Uzbekistan and Turkmenistan during the low-water years. There are no considerable water shortage during the high-water years.
2.	Kairakkumskaya HPS Syrdarya river	Capacity - 126 Megawatt, units – 6, power generation – 690 mln kWt/hour, dam height – 32 m, reservoir capacity - 4,2 km ³ , usable storage - 2,6 km ³ , water surface area - 513 km ² , length - 55 km.	Operates since 1956; Kairakkumskaya HPS generates 7% of all electricity in RT; it needs renovation and cleaning the bottom of the dam to avoid a silting.	Irrigation and energy purposes. Reservoir with seasonal and partly over-years regulation. Reservoir is created for sustainable land irrigation including new lands area more than 300 thousand hectares. Currently Kairakkum waterworks facility operates the energy mode due to electricity shortage. This situation makes it impossible to store water what can have negative consequences in the vegetation period.
3.	Baipazinskaya HPS	Capacity - 600 Megawatt,	The first three units were	Energy purpose. Daily-storage reservoir.

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	Vakhsh river (tributary of Amudarya river), downstream Nurek reservoir	units – 4, power generation – 2,6 billion kWt/hour, dam height - 75 m, reservoir capacity - 220 million m ³ , usable storage - 20 million m ³ .	commissioned in 1985, the fourth (last) - in 1986. The hydropower plant provides the south of RT with energy.	In 2002 as a result of sliding 3.5 million cubic meters of rock mass into the Vakhsh river a few kilometers downstream from the Baipazinskaya HPP, the dam arose and blocked the river and now threatens to flood the Baipazinskaya HPS. At the present time on the flank of hill near the Baipazinskaya HPS there is the threat of another landslide descent, which can completely block the gorge through which the Vakhsh river flows. Such developments, according to experts, can lead to serious environmental catastrophe.
4.	Golovnaya HPS Vakhsh river (tributary of Amudarya river), downstream Nurek reservoir	Capacity - 240 Megawatt, units – 6, power generation – 1,15 billion kWt/hour, dam height - 50 m, reservoir capacity - 95 million m ³ , usable storage - 18 million m ³	Operates since 1963; reconstruction is needed.	Energy purpose. Daily-storage reservoir.
5.	Perepadnaya HPS Vakhsh river (tributary of Amudarya river), downstream Nurek reservoir	Capacity - 30 Megawatt, units – 3, power generation - 247 mln kWt/hour, dam height - 17 m.	Operates since 1960; reconstruction is needed.	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.
6.	Central HPS Vakhsh river (tributary of Amudarya river), downstream Nurek reservoir	Capacity - 15 Megawatt, units – 2, power generation - 115 mln. kWt/hour.	Operates since 1964; reconstruction is needed.	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.
7.	Varzobsky series of hydroelectric stations Varzob river (tributary of	Total Capacity - 25 Megawatt, power generation - 190 mln kWt/hour, units 4,	Operates since 1936; reconstruction is needed.	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.

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	Kafirnigan river, Amudarya river basin)	reservoir capacity – 30 million m ³ , usable storage – 20 million m ³		
8.	Sangtudinskaya HPS -1 Vakhsh river (tributary of Amudarya river), downstream Nurek reservoir, 200 km to the south of Dushanbe	Estimated Capacity - 670 Megawatt, units – 4, power generation- 2,7 billion. kWt/hour, dam height- 75 m, reservoir capacity - 258 million m ³ , usable storage – 18 million m ³	Construction of Sangtudinskaya HPS -1 began in 1980s and was suspended in the early 1990s. In 2005 Government of RT and Russian JSC "INTER RAO EES" have founded JSC "Sangtuda-1" (the Russian side has 75% of shares). In early November 2008 the third unit was put into operation.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.
UNDER CONSTRUCTION				
9.	Rogunskaya HPS Vakhsh river (tributary of Amudarya river), 110 km out of Dushanbe	Estimated Capacity 3600 Megawatt, units – 6, power generation – 13,1 billion kWt/hour, dam height – 335 m, reservoir capacity - 13,3 km ³ , usable storage 8,6 km ³ .	Construction began in 1976. After the collapse of the USSR, work was suspended. At present, construction is being implemented by Tajikistan itself. The volume of implemented works is 30% (\$ 800 million). The residual value of construction is estimated at \$ 2.2 billion. The Tajik government is negotiating with Russia on its involvement into the project, as well as on establishment of international consortium under the auspices of the World Bank.	Commissioning of the Rogun waterworks facility can have significant impacts on seasonal and over-year regulation of Vakhsh river flow. There is a probability of changing the designed irrigation-energy operating mode (with high summer water yield) to the energy operating mode (with a predominantly winter water yield), what will negatively affect the water balance of the region. Calculations show that the synchronous operation of Rogun waterworks facility and all hydropower plants situated downstream by the energy mode reduces the average water availability downstream countries

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				<p>during the summer to 78%. Large volumes of water releases during the winter will lead to ice blockages, raise of the water level in the river, groundwater backing-up, waterlogging and flooding of useful territory.</p>
10.	<p>Sangtudinskaya HPS – 2 Vakhsh river (tributary of Amudarya river), downstream Nurek reservoir</p>	<p>Estimated Capacity - 220 Megawatt, power generation- 932 million kWt/hour, units – 4, dam height- 34 m, reservoir capacity – 66,5 million m3, usable storage 5 million m3</p>	<p>Construction is being carried out jointly with the Iranian company "Sangob". Total project cost - \$ 220 million. It is supposed to put it into operation in 2011. During 12.5 years the HPS will be operated by the Iranian side, and then it will become the property of Tajikistan. The volume of implemented works is \$ 90 million.</p>	<p>Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.</p>
PROJECTED				
11.	<p>Dashtidjumszkaya HPS Pyandj river (tributary of Amudarya river), at the border between Tajikistan and Afghanistan</p>	<p>Estimated Capacity – 4000 Megawatt, units – 6, power generation – 15,6 billion kWt/hour, dam height – 370 m, reservoir capacity: полная – 17,6 km3, usable storage – 10,2 km3.</p>	<p>In November of 2007 Afghanistan and Tajikistan have signed a Protocol on the Amudarya water use, providing the use of water for irrigation needs of Afghanistan and electricity generating by means of construction of Dashtidjumszkaya HPS. Governments of Tajikistan and Afghanistan is looking for investors. Estimated project cost - \$ 3.5-4 billion. As estimated by the specialists the project can be implemented after</p>	<p>Irrigation and energy purposes. Reservoir will allow an over-year regulation of flow. Commissioning the reservoir in operation will increase the water intake by Afghanistan, what will reduce the water volume for Uzbekistan and Turkmenistan. There is a probability of changing the designed irrigation-energy operating mode (with high summer water yield) to the energy operating mode (with a predominantly winter water yield), what will negatively affect the water balance of</p>

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			2020.	the region.
12.	Shurobskaya HPS Vakhsh river (tributary of Amudarya river), upstream Nurek reservoir	Estimated Capacity -850 Megawatt, units - 3, power generation – 3,1 billion. kWt/hour, dam height – 83 m, reservoir capacity: полная – 77 million m3, usable storage – 5 million m3.	Government of RT is looking for investors.	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.
13.	Sangvorskaya HPS Obikhingou river (tributary of Vakhsh river)	Estimated Capacity -800 Megawatt, units – 4, power generation – 2 billion kWt/hour, dam height – 250 м, reservoir capacity: полная – 2,3 km3, usable storage – 1,5 km3.	In August of 2008 the Ministry of Energy and Industry of the Republic of Tajikistan and the Chinese company "China Theban Electric Apparatus Stock Co. LTD " had to sign an agreement on the construction of Sangvorskaya HPS. Given the position of the Republic of Uzbekistan, the Chinese side refused to participate in this project. Government of Tajikistan is looking for other investors.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.
14.	Urfatinskaya HPS Obikhingou river (tributary of Vakhsh river)	Estimated Capacity -850 Megawatt, units – 4, power generation – 2,4 billion kWt/hour, dam height – 40 m, reservoir capacity: total storage – 20 million m3, usable storage – 10 million m3.	In August 28, 2008 the Russian company "Inter RAO EES" and the Ministry of Energy and Industry of Tajikistan have signed a memorandum providing for the construction of the Urfatinskaya HPS. Parties established a working group, which has already held two meetings. It was expected that the feasibility study will be presented by the Russian side in the first quarter of 2009.	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.
15.	Shtienskaya HPS Obikhingou river (tributary of	Estimated Capacity -600 Megawatt, units – 4, power	Government of RT is searching investors.	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.

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	Vakhsh river)	generation – 1,5 billion. kWt/hour, dam height – 62 m, reservoir capacity: полная – 20 million m3, usable storage – 10 million m3.		
16.	Evtachskaya HPS Obikhingou river (Khingob)	Estimated Capacity -800 Megawatt, units – 4, power generation – 2 billion kWt/hour, dam height – 40 m, reservoir capacity: total storage – 30 million m3, usable storage – 20 million m3	Government of RT is searching investors	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.
17.	Kaftaguzarskaya HPS Obikhingou river (Khingob)	Estimated Capacity -650 Megawatt, units – 4, power generation – 1,6 billion kWt/hour, dam height – 40 m, reservoir capacity: total storage – 20 million m3, usable storage – 10 million m3.	Government of RT is searching investors	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.
18.	Nijne-Kafirniganskaya HPS Kafirnigan river (tributary of Amudarya river)	Estimated Capacity -120 Megawatt, units – 4, power generation – 0,5 billion kWt/hour, dam height – 72 m, reservoir capacity: total storage – 908 million m3, usable storage – 620 million m3.	Government of RT is searching investors	Irrigation-Energy purposes. Seasonal regulation storage. Impact on hydrologic regime could negatively affect water availability downstream.
19.	Yavrozskaya HPS Kafirnigan river (tributary of Amudarya river)	Estimated Capacity -400 Megawatt, units – 4, power generation – 1,1 billion kWt/hour, dam height – 170 m, reservoir	In August 28, 2008 the Russian company "Inter RAO EES" and the Ministry of Energy and Industry of Tajikistan have signed a	Energy purpose. Daily-storage reservoir.

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		capacity: total storage – 645 million m ³ , usable storage – 479 million m ³ .	memorandum providing for the construction of the Yavrozskaya HPS . Parties established a working group, which has already held two meetings. Russian specialists received preliminary information from the RT and visited the construction place. It was expected that the feasibility study will be presented by the Russian side in the first quarter of 2009.	
20.	Ramitskaya HPS Kafirnigan river (tributary of Amudarya river)	Estimated Capacity -450 Megawatt, units – 4, power generation – 1,4 billion. kWt/hour, dam height – 205 m reservoir capacity: total storage – 2 km ³ , usable storage – 1,4 km ³ .	Government of RT is searching investors	Energy purpose. Seasonal regulation storage. Impact on hydrologic regime could negatively affect water availability downstream.
21.	Sarboskaya HPS Sarbo river (tributary of Kafirnigan river, Amudarya river basin)	Estimated Capacity -250 Megawatt, units – 4, power generation – 0,8 billion. kWt/hour, dam height – 270 m, reservoir capacity: total storage – 1,2 km ³ , usable storage – 0,7 km ³ .	Government of RT is searching investors.	Energy purpose. Seasonal regulation storage. Impact on hydrologic regime could negatively affect water availability downstream.
22.	Vistonskaya HPS Sarday-Miona river (tributary of Kafirnigan river, Amudarya river basin)	Estimated Capacity -200 Megawatt, units – 4, power generation – 0,6 billion. kWt/hour, dam height – 290 m, reservoir capacity: total storage – 800 million m ³ , usable storage – 600 million m ³	Government of RT is searching investors.	Energy purpose. Daily-storage reservoir.
23.	Siamskaya HPS	Estimated Capacity -250	Government of RT is	Energy purpose. Daily-storage reservoir.

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	Varzob river (tributary of Kafirnigan river, Amudarya river basin)	Megawatt, units – 4, power generation – 0,6 billion. kWt/hour, dam height – 140 m, reservoir capacity: total storage – 200 million m ³ , usable storage – 100 million m ³	searching investors.	
24.	Putusskaya HPS Varzob river (tributary of Kafirnigan river, Amudarya river basin)	Estimated Capacity -400 Megawatt, units – 4, power generation – 1 billion. kWt/hour, dam height – 84 m, reservoir capacity: total storage – 52 million m ³ , usable storage – 20 million m ³ .	Government of RT is searching investors.	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.
25.	Guskharskaya HPS Varzob river (tributary of Kafirnigan river, Amudarya river basin)	Estimated Capacity -220 Megawatt, units – 4, power generation – 0,5 billion. kWt/hour, dam height – 46 m, reservoir capacity: total storage – 29 million m ³ , usable storage – 9 million m ³ .	Government of RT is searching investors.	Energy purpose. No high-capacity reservoir. No considerable impact on river flow.
26.	Oburdonskaya HPS Matcha river (tributary of Zarafshan river)	Estimated Capacity -120 Megawatt, power generation – 0,35 billion. kWt/hour, reservoir capacity -720 million m ³	In August 28, 2008 the Russian company "Inter RAO EES" and the Ministry of Energy and Industry of Tajikistan have signed a memorandum providing for the construction of the Oburdonskaya HPS . Parties established a working group, which has already held two meetings. Russian specialists received preliminary information from the RT and visited the construction place. It	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.

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			was expected that the feasibility study will be presented by the Russian side in the first quarter of 2009.	
27.	Dargskaya HPS Matcha river (tributary of Zarafshan river)	Estimated Capacity -130 Megawatt, power generation – 0,75 billion. kWt/hour, reservoir capacity -50 million m3	Government of RT is searching investors.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.
28.	Sangistanskaya HPS Matcha river (tributary of Zarafshan river)	Estimated Capacity -140 Megawatt, power generation – 0,9 billion. kWt/hour, reservoir capacity -50 million m3	Government of RT is searching investors.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.
29.	Fandarinskaya HPS Fandarya river (tributary of Zarafshan river)	Estimated Capacity -300 Megawatt, power generation – 1,9 billion. kWt/hour.	Government of RT is searching investors.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.
30.	Aininskaya HPS Zarafshan river	Estimated Capacity -160 Megawatt, power generation – 0,95 billion. kWt/hour, reservoir capacity -50 million m3	Government of RT is searching investors.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.
31.	Yavanskaya HPS Zarafshan river	Estimated Capacity -120 Megawatt, power generation – 0,18 billion. kWt/hour, reservoir capacity -50 km3.	In 2006-2007 at the request of the Ministry of Energy and Industry of Tajikistan the Chinese company "Sinohidro" and the Export-Import Bank of China has launched the construction of the Javanskaya HPS. Taking into account the position of Uzbekistan, currently China has suspended its participation in this project.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.
32.	Dupulinskaya HPS Zarafshan river	Estimated Capacity -200 Megawatt, power generation – 1	Government of RT is searching investors.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could

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		billion. kWt/hour, reservoir capacity -2,6 km ³ .		negatively affect water availability downstream.
33.	Penjikent HPSs - 1,2,3 Zarafshan river	Estimated Capacity -50 Megawatt, power generation – 0,38 billion. kWt/hour.	Government of RT is searching investors.	Energy purpose. Daily-storage reservoir. Impact on hydrologic regime could negatively affect water availability downstream.