TAJIKISTAN'S ENERGY PROJECTS: PAST, PRESENT, AND FUTURE

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The first state diesel station with a capacity of 78 kW went into operation in Dushanbe, the republic's capital, in 1926. And the first hydropower station, Varzobskaia-1, not far from Dushanbe, with a capacity of 7.15 MW was built in 1937. The building of power stations in Tajikistan continued even during the years of the Great Patriotic War (1941-1945), and after it was over, they were erected at an even faster rate. For example, in 1941 the first line of the Khorogskaia hydropower plant in Pamir, the republic's highest mountainous and most inaccessible region, went into operation, followed in 1945 by the second line.

What is more, in the 1930s, intensive study of the republic's energy resources began, while planning and surveying work was organized for building new facilities. It was carried out on a planned and systematic basis using world experience. In 1949-1950, the first energy program was developed, which took into account the agricultural proclivity of Tajikistan's economy,[1] thus giving it the name of "Electrification of Agriculture." It envisaged building 956 hydropower plants, with a unitary capacity of 50 to 3,000 kW, 555 of which were to be built in the republic's most economically developed north, 328 in the central regions, and 73 in sparsely populated and economically underdeveloped Pamir. Their total capacity amounted to 500 MW.

This was when specialists understood that only hydropower resources could form the foundation of the republic's energy development. Their supplies are several times higher than the republic's own needs, while the country has essentially no industrial deposits of oil and gas, and it is very unprofitable to develop the nation's coal fields.[2]

[1] Unfortunately, this proclivity continues today. More than 70% of the 6.5 million people in the republic are engaged in agriculture. In so doing, there are 0.11 hectares of land per capita in Tajikistan, 0.08 hectares of which are arable. As a result, according to different estimates, labor migration of the population beyond the country currently amounts to between 350,000 and 1,200,000 people.

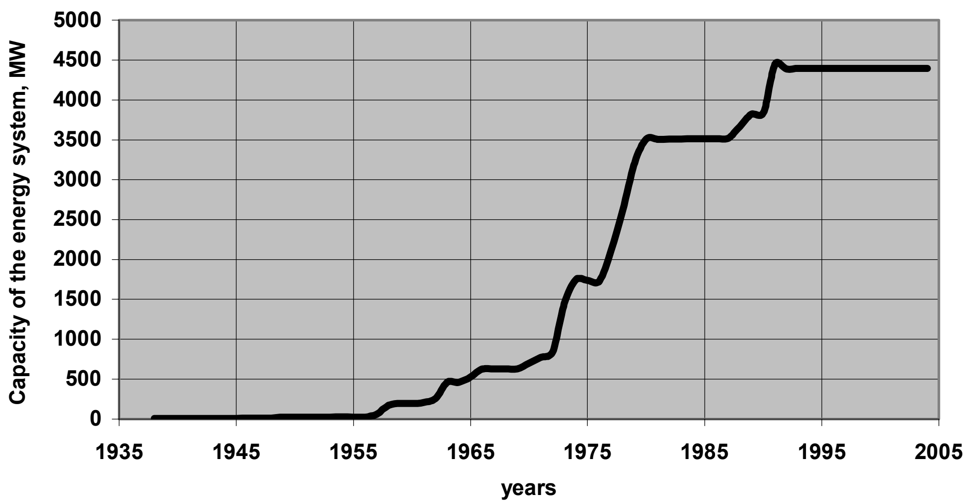
[2] See: G. Petrov, "Tajikistan's Hydropower Resources," *Central Asia and the Caucasus*, No. 3 (21), 2003.

By the 1960s, construction of the Vakhsh chain of hydropower plants (Golovnaia, Perepadnaia, and Tsentralnye) was completed, with a total capacity of 258 MW, as well as 69 small hydropower plants with a total capacity of 32 MW. Then, in keeping with the change in the Soviet Union's general policy, the program for building small hydropower plants was curtailed and the building of large ones began. And by the 1980s, several of these hydropower plants went into operation in the republic: the Nurekskaia, with a capacity of 3,600 MW, a reservoir of 10.5 cubic km in volume, and the highest earthen embankment in the world of 300 m, the Baipazinskaia, with a capacity of 600 MW, and the Kairakkumskaia, with a capacity of 126 MW and a reservoir of 4.6 cubic km in volume. What is more, at the same time the construction of other hydroelectric power plants began, including the Rogunskaia, with a capacity of 3,600 MW and a reservoir of 13.3 cubic km in volume. During this period, yet another special feature of hydropower engineering in Tajikistan was manifested—its integral use related primarily to irrigation. What is more, irrigation demands, which were aimed at ensuring the Soviet Union's cotton and partial grain independence, became top priorities, but were detrimental to hydropower engineering.[3]

Hydroelectric power currently accounts for 98% of the total capacity of the republic's energy system (see Fig. 1).

Figure 1

Dynamics of the Country's Hydropower Development
(*increase in total capacity*)



This figure shows that during the second half of the last century, particularly between the 1950s and 1980s, electric power underwent very intensive development. By the end of this period, electric power production amounted on average to 16 billion kWh a year. With the size of Tajikistan's population at that time of 4 million people, this ensured a per capita intensity-of-use coefficient of 4,000 kWh per year, which was a very high index for that time and not only compared favorably with

[3] Taking into account that hydropower engineering was primarily developed in countries at the heads of rivers, in Tajikistan and Kyrgyzstan, and irrigation in the lower reaches of rivers, in Uzbekistan, Kazakhstan, and Turkmenistan, after the U.S.S.R. disintegrated and the Central Asian countries acquired their independence, this became the region's most serious inter-republic problem.

many European countries,[4] but also promoted significant economic growth in the republic. For example, between 1950 and 1985, its gross national product rose 13.5-fold, from 717.6 to 9,766.4 million rubles, its industrial product jumped 15.5-fold (from 346.3 million rubles to 9,766.4 million rubles), while the area of irrigable land increased 2.2-fold, from 299,500 to 648,700 hectares, whereby in the latter case, the entire increase was achieved by means of pump irrigation. What is more, when the Kairakkumsky (in 1957) and Nureksky (in 1978) reservoirs went into operation, an additional 1 million hectares of land could be incorporated into the irrigation zone in the neighboring union republics of Uzbekistan and Kazakhstan.

Unfortunately, all these indices were achieved with the help of highly qualified personnel, including workers from other more developed Soviet republics. In Tajikistan itself, their training had only just begun. And after the Soviet Union collapsed, these specialists and highly qualified workers, who had not yet put down roots in the republic, moved away from our now independent country, leaving it to struggle with very serious personnel problems it has still been unable to overcome.

The plans drawn up in the 1980s envisaged even more intensive development of hydropower engineering. With this in mind, more than 85 highly efficient projects were prepared at different stages: the unit cost of hydropower plants was equal to $500-$1,000 per kilowatt of installed power, and the cost of electric power was less than 0.1 cent/kWh. The main indices are presented in Table 1.

This program did not envisage the possibility of building small hydropower plants, which, as we have already noted, was related to the electric power development strategy aimed exclusively at erecting large plants. At the same time, we cannot ignore the potential of small hydropower plants. They have a capacity of 21,057.0 MW and produce 184.5 TWh of electric power a year, whereby almost 50% of them are technically fit for development.

The designated plans finally saw the light of day. Along with the Rogunskaia hydroelectric power plant, with a capacity of 3,600 MW, as we have already noted, in the 1970s and 1980s, construction of the Sangtudinskaia 1 and 2 hydropower plants, with a total capacity of 890 MW, and the Nizhne-Kafirniganskaia, with a capacity of 120 MW, began, as well as preparatory work on the Shurobskaia and Dashtijumskaia hydropower plants. By the beginning of the 1990s, the total investments in these facilities had topped one billion dollars.

Table 1

Priority Projects in Hydropower Development

No.	Name	Parameters			
		Capacity, MW	Production, TWh/year	Hydraulic drop, m	Active storage capacity, km^3
	Chain of hydropower stations on the Panj River				
1	Namangutskaia*	2.5	0.018	36	0
2	Barsharskaia	300	1.6	100	1.25
3	Anderobskaia	650	3.3	185	0.1
4	Pishskaia	320	1.7	90	0.03
5	Khorogskaia	250	1.3	70	0.01

[4] It was population growth, which was actively supported by Soviet state policy, which fell on favorable religious and national soil, and later became a very serious economic, social, and political problem for Tajikistan. Today 6.5 million people live in the country.

Table 1 (continued)

No.	Name	Parameters			
		Capacity, MW	Production, TWh/year	Hydraulic drop, m	Active storage capacity, km^3
6	Rushanskaia	3,000	14.8	395	4.1
7	Iazgulemskaia	850	4.2	95	0.02
8	Granitnye vorota	2,100	10.5	215	0.03
9	Shirgovatskaia	1,900	9.7	185	0.04
10	Khostavskaia	1,200	6.1	115	0.04
11	Dashtijumskaia	4,000	15.6	300	10.2
12	Jumarskaia	2,000	8.2	155	1.3
13	Moskovskaia	800	3.4	55	0.04
14	Kokchinskaia	350	1.5	20	0.2
15	Nizhne-Panjskaia	600	3.0		
Total		18,322.5	84.918		17.36
Chain of hydropower plants on the Vakhsh River					
1	Rogunskaia**	3,600	13.3	300	8.6
2	Shurobskaia	800	3.0	55	0.02
3	Nurekskaia*	3,000	11.2	250	4.5
4	Baipazinskaia*	600	2.5	54	0.08
5	Sangtudinskaia, 1**	670	2.7	58	0.02
6	Sangtudinskaia, 2	220	1.0	19	0.005
7	Golovnaia*	240	1.3	26	0.004
8	Perepadnaia*	30	0.25	39	0
9	Tsentralnaia*	8	0.11	22	0
Total		9,178	35.36		13.229
Hydropower plant on the Syrdaria River					
1	Kairakkumskaia*	126	0.6	15,4	2.5
Total		126	0.6		2.5
Chain of hydropower plants on the Obikhingou River					
1	Sangvorskaia	800	2.0	268	1.5
2	Urfatinskaia	850	2.1	280	0.01

Table 1 (continued)

No.	Name	Parameters			
		Capacity, MW	Production, TWh/year	Hydraulic drop, m	Active storage capacity, km^3
3	Shtienskaia	600	1.5	150	0.01
4	Evtachskaia	800	2.0	185	0.02
5	Kaftarguzarskaia	650	1.7	140	0.01
Total		3,700	9.3		1.55
Chain of hydropower plants on the Surkhob River					
1	Jadbulakskaia	600	2.0	200	1.4
2	Saironskaia	500	2.2	135	0.01
3	Gorgenskaia	600	2.7	138	0.02
4	Garmskaia	400	1.8	90	0.02
Total		2,100	8.7		1.45
Chain of hydropower plants on the Zaravshan River					
1	Vishkentskaia	160	0.95	40	0.02
2	Iavanskaia	120	0.18	80	0.02
3	Dupulinskaia	200	1.0	90	1.6
4	Penjikentskaia, 1	50	0.27	49	0
5	Penjikentskaia, 2	45	0.25	46	0
6	Penjikentskaia, 3	65	0.36	69	0
Total		640	3.01		1.64
Chain of hydropower stations on the Fandaria River					
1	Iskanderkulskaia	120	0.77	80	0.45
2	Iagnobskaia	150	0.97	150	0.3
3	Ravatskaia	50	0.3	40	0.02
4	Zakhmatabadskaia	190	1.14	25	0.01
Total		510	3.18		0.78
Chain of hydropower plants on the Matcha River					
1	Matchinskaia	90	0.56	180	0.8
2	Riamutskaia	75	0.46	110	0.35
3	Oburdonskaia	65	0.35	80	0.02

Table 1 (continued)

No.	Name	Parameters			
		Capacity, MW	Production, TWh/year	Hydraulic drop, m	Active storage capacity, km^3
4	Pakhutskaia	130	0.75	85	0.02
5	Sangistanskaia	140	0.90	80	0.02
Total		500	3.02		1.21
Chain of hydropower plants on the Kafirningan River					
1	Vagjigdinskaia	150	0.6		0.85
2	Iavrozskaia	400	1.1		0.045
3	Romitskaia	450	1.4		1.2
4	Sarvozskaia	250	0.8		0
5	Vistonskaia	200	0.6		0
6	Nizhne-Kafirniganskaia**	120	0.48		0.6
Total		1,570	4.98		2.695
Chain of hydropower plants on the Bartang River					
1	Sarezskaia	150	1.3		3.1
2	Bartangskaia, 1	113	1.04		0.6
3	Bardarinskaia	135	1.1		0
4	Bartangskaia, 2	94	0.8		0
5	Bartangskaia, 3	89	0.8		0.15
Total		581	5.04		3.85
Chain of hydropower plants on the Varzob River					
1	Guskharskaia	220	0.55		0.002
2	Puguzskaia	400	1.9		0.002
3	Siamskaia	250	0.6		0.08
Total		870	3.05		0.084
Chain of hydropower plants on the Gunt River					
1	11 operating hydropower plants*	29.4	0.198		
2	Chain of 11 new hydropower plants	255	1.56		0.212
Total		284,4	1.758		0.212

Table 1 (continued)

No.	Name	Parameters			
		Capacity, MW	Production, TWh/year	Hydraulic drop, m	Active storage capacity, km³
	TOTAL	38,366.5	162.916		46.56
	of them:				
	Operating	4,043.4	16.158		7.084
	Under construction	4,390	16.48		9.22

* operating, ** under construction.

As for thermal power, due to the rich hydropower resources and the country's shortage of its own mineral fuel, it was developed at a minimum level. In the 1980s, only the Iavanskaia thermal power station, operating on gas, with a capacity of 120 MW, and more than 40 diesel stations in Pamir, using residual oil, with a total capacity of about 12 MW, were put into operation.[5]

The republic finally stopped developing thermal power stations in the 1990s, after a project for the Fan-Iagnobskaia state regional hydroelectric power plant was drawn up with a capacity of 2,000 MW and producing 9.2 TWh per year of electric power. Even despite the fact that there were plans to build it directly on an operating coal field and use this coal as fuel, it could not compete with the hydropower plants. The cost of electric power at the station itself would have amounted to 2.03 cents per kWh and, taking into account the costs of equipping the coal field, 6.97 cents per kWh (the cost at hydropower plants was no higher than 0.1 cents/kWh).

What is more, even before this, at the end of the 1980s, a state program to further develop hydropower engineering was drawn up in the Soviet Union for 1990-2005, whereby, in particular, the construction of eight large hydropower plants was planned in Tajikistan, three of them in Pamir. (The main indices of this program are presented in Table 2.)

In this program, Tajikistan, which occupied 0.64% of Soviet territory and had a population of 2% of the total union population, accounted for 17% of the total input hydropower potential, followed by Kirghizia with 10%, while the other Union republics (apart from the RSFSR) accounted for less than 5%. Of course, such increased attention toward Tajikistan was mainly explained by its large supplies of hydropower resources, as well as the efficiency of their use. However, all the construction was not carried using the republic's own resources, but on funds from the U.S.S.R budget, which had a very negative impact after the Soviet Union collapsed. After 1992, all hydropower plant construction completely stopped in Tajikistan, including those facilities already underway.[6]

This required definition of the further development of power engineering. The problem became particularly acute after centralized deliveries of mineral fuel from neighboring republics stopped, and the previous exchange of electric power for it (in keeping with the winter-summer scheme) was eliminated. This led to a shortage of electric power in the republic in the winter (3-4 billion kWh) and no demand for the surplus electric power in the summer (1.5 billion kWh).

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[5] Unfortunately, many of them installed at the end of the 1980s did not even start operating, and after 1992 Pamir's diesel power stations ceased to function at all due to a lack of fuel.

[6] For the sake of objectivity, it should be noted that one of the reasons for the collapse of the Soviet Union was that too much attention was focused on development of the energy complex: oil and gas, coal, hydropower, to the detriment both of the environment and efficient energy use. As a result, the Soviet Union's entire economy could not compete with developed countries and went bankrupt.

Table 2

Program for the Construction of Hydropower Plants (without pumped-storage stations) in the Soviet Union for 1991-2005 (*input capacity, MW*)

No.	Republic	Periods			
		1991-1995	1995-2000	2001-2005	1991-2005
1	RSFSR	3,725	7,217	9,070	20,012
2	Ukrainian SSR	438	0	0	438
3	Kazakh SSR	117	240	300	657
4	Georgian SSR	233	917	176	1,326
5	Azerbaijanian SSR	112.5	520	67,5	700
6	Kirghiz SSR	600	950	1,810	3,360
7	Tajik SSR	1,448	3,094	948	5,490
8	Armenian SSR	19	22	0	41
Total in U.S.S.R		6,692.5	5,743	12,435,5	32,024

Due to the republic's own extremely limited funds and low investment rating, the country's priorities and entire development strategy had to be reconsidered. But all the power facilities already started and planned did not lose their significance. What is more, as the cost of electric power on the world markets rose, they became even more attractive. But despite all the efforts, including by the government, the foreign investments needed for their implementation were not forthcoming. Nor was an attempt to generate funds by creating the Sangtuda Joint-Stock Company (for completing construction of a hydropower plant of the same name) crowned with success. This meant finding 350 million dollars, but after two issues of shares for a total of 200 million dollars, this joint-stock company barely managed (and with the government's help at that) to collect $300,000, that is, less than 0.1% of the required sum. The only successful example in this respect was the creation of a private energy company in Pamir, with license to use all the property of the former regional electric power networks for 25 years. There are plans to attract 25 million dollars in investments to this company.

During the post-Soviet period, several new large facilities were developed in the republic. One of them envisages diverting some of the Panj River drainage into the Vakhsh River to be used at the chain of Vakhsh hydropower plants already operating there. The project is distinguished by its simplicity and high efficiency—only a dam needs to be built on the Panj River and a tunnel. At a total construction cost of 340 million dollars, the production of electric power in the republic will increase by 11.3 billion kWh a year, whereby in the winter, that is, during the high deficit time, by 5.1 billion kWh. This project is much more efficient that building the Rogunskaia hydroelectric power plant, the cost of which is more than 2 billion dollars and will produce approximately the same amount of electricity.

The plan developed for the first stage of the first line of the Rogunskaia hydroelectric power plant is somewhat affiliated with this project, in which instead of building the entire complex, there are plans to erect (at the first stage) only one low dam necessary for water storage. In so doing, energy will be produced in the same way as at the existing chain of Vakhsh hydropower plants. The cost of the work is 227 million dollars, and annual electric power production (in the winter only) amounts to 800 million kWh.

There is also a project for diverting some of the Zaravshan River drainage to the Istravshanskaia valley for its integral (irrigation and energy) use. In particular, there are plans to build a dam and hydropower station on the Zaravshan River with a capacity of 90 MW, a tunnel, and a chain of derivation hydropower stations with a capacity of 300 MW (at the exit from the tunnel), as well as irrigate 80,000 hectares of land. The total work cost is 660 million dollars, the remuneration time, taking into account only the energy component, is nine years, whereas taking into account the irrigation component it is reduced to 18 months.

Among the smaller projects, it is worth mentioning the one to generate hydrogen as automobile fuel (using the surplus summer electricity from the Nurekskaia hydropower plant, the volume of which, as already noted, is equal to 1.5 billion kWh per year). Another alternative for using this surplus is considered in a project which envisages building an experimental industrial installation for synthesizing liquid fuel from the oil and coal produced in the republic.

But not one of these projects has been implemented despite their high efficiency. This is due not only to the difficulties in attracting funds, but also to the fact they have not been elaborated to the necessary extent. For example, surveys and working studies of the river diversion projects have not even begun. In the projects on utilization of surplus electric power from the Nurekskaia hydropower plant production technology has not been developed to the proper level. Nor has the project for the first stage of the first line of the Rogunskaia hydropower plant been approved by neighboring countries, which today is mandatory for any undertaking on a transborder river (which the Vakhsh is). In order to implement these plans, rather large investments are required, which it is impossible to attract these days without any guarantee of their return. In this respect, we can say that all the mentioned projects have missed the boat—during Soviet times they would have undoubtedly received support and funding.

After the republic acquired its independence, small hydropower stations, which make it possible to supply the remote inaccessible regions with electricity at low costs and in a short time, again began to arouse increased interest. For example, in 1992, a scheme was prepared for accommodating small hydropower plants in the republic's mountainous regions—Garm, Jirgatal, and Staro-Matchinskiy—where there were plans to build 160 plants with a capacity of between 100 and 5,000 kW. In 1995, a schedule was drawn up for setting up small hydropower plants in Pamir and the Gorno-Badakhshan Autonomous Region, which presupposed building 50 stations with a capacity of up to 1,000 MW. In 1993-1997, the republic's government adopted special resolutions, in compliance with which privileges were granted for building and operating small hydropower stations. And in contrast to the other projects, the construction of small hydropower stations is actually underway.[7] Using budget funds, seven power plants with a capacity of 100-500 kW have been put into operation, and 17 small hydropower plants with a capacity of 30-100 kW have been built in Pamir using funds allotted by the Aga Khan Foundation.

What is more, programs are being introduced for using alternative sources of energy, solar and biogas. Solar energy is particularly promising in this respect: Tajikistan belongs to the so-called "world sun belt," the number of hours of sunshine in the republic amounts to 2,500-3,500 a year, so with the aid of solar collectors, a large part of the population can be supplied with hot water. Unfortunately, as paradoxical as it may sound, the use of this technology is curbed by the low cost of electricity and its poor metering. Biogas installations are already being built in the republic, but they will apparently be used sparingly, primarily due to the absence of a sufficient resource base—today the country has only 1,200,000 head of large horned cattle—the main supplier of fuel for these installations. Wind energy is not at all promising for Tajikistan, since it cannot compete with hydropower.

All the projects reviewed above are aimed at further developing power engineering by building new facilities. All the program documents adopted by the republic's government envisage a two-fold increase in production capacity and electric power production by 2015. In so doing, the currently operating facilities are being neglected, which has resulted in very serious problems that grow with each passing year.

[7] The creation of the private energy company in Pamir mentioned above is also affiliated with implementation of the small hydropower plant development program, since the total capacity of this energy system (30 MW) is equal to the maximum capacity of one small hydropower plant.

Without the necessary repair, not to mention modernization of equipment, wear and tear of the industry's capital stock has exceeded all permissible norms. Even an initial (very superficial) study revealed the need for immense funds to ensure the normal operation of this system. As Table 3 shows, they amount to 606.42 million dollars, whereby they are needed urgently. Unfortunately, energy companies do not have such funds today, which is not only resulting in a reduction in reliable energy supply to all consumers, but is also posing a threat to the safety of the system's facilities.

Insufficient attention to the safety of hydrotechnical structures is already taking its toll: since 1992, several accidents have been recorded, which were essentially initial warnings. A problem has also arisen in interstate relations, since the republic's energy system is not closed—there is no direct connection between the northern, most developed Sogd Region of the country where only the Kairakkumskaia hydropower plant with a capacity of 126 MW operates, and the rest of the republic, where all the country's main power plants are located. As a result, the Sogd Region is getting 85% of the electric power it needs from Uzbekistan. And Tajikistan, in turn, gives Uzbekistan the same amount of electric power to the Surkhandaria Region. This system was created in Soviet times and under the conditions of a united country it worked normally. Today, however, Uzbekistan may reject it at any moment, in particular after the Talimarjanskaia hydropower plant goes into operation in the Surkhandaria Region, which will place our republic in a very difficult position. It will be forced to buy electric power for the Sogd Region at a price

Table 3

Program of Primary Work on the Repair, Reconstruction, and Modernization of the Energy System

No.	Facility	Expenses, mill. dollars
1	Nurekskaia hydropower plant	83.82
2	Baipazinskaia hydropower plant	2.45
3	Kairakkumskaia hydropower plant	24.1
4	Golovnaia hydropower plant	126.05
5	Perepadnaia hydropower plant	15.4
6	Tsentralnaia hydropower plant	8.10
7	Chain of Varzob hydropower	2.3
8	Dushanbinskaia thermal power station	257.5
9	Iavanskaia thermal power station	26.7
Total for power plants		546.42
10	Enterprises of the energy system	52.26
11	Relay protection	0.08
12	Communication	3.65
13	Metering of electric power	0.64
14	Automated control system	1.22
15	Safety regulations	1.15
TOTAL for the energy system		606.42

three times higher than its cost on the domestic market, but at the same time will be unable to sell the ensuing surplus of its own electricity. This problem can only be resolved if a power transmission line of 350 km in length is laid, whereby this will have to be done in very difficult conditions. The cost of the project is 142.1 million dollars, whereby it is absolutely unprofitable, and only needed for ensuring the republic's energy independence.

In this way, more than 750 million dollars will have to be found only to resolve the primary problems of supplying the country with energy. Whereas to develop the industry, in particular the construction of new hydropower plants, billions of dollars are needed. This indicates the need for a change in priorities and a reassessment of values. It primarily requires an understanding that energy is not an end it itself, as was frequently believed in Soviet times, but only a means for ensuring people a dignified life, as well as maintaining the country's sustainable development in the interests of the current and future generations. Based on this, the main priority of the republic's energy sector is its rejuvenation, rehabilitation, and modernization.

The funds necessary for this can only be generated by the country's own activity. This requires changing the way the energy system is financed,[8] in particular, raising the cost of electricity. Today it is very low—0.8 cents per kWh, and what is more no more than 60% is paid for.[9] The system can also be rejuvenated by raising the efficiency of electricity use, which is currently at the extremely low level, as well as drawing up an energy saving policy (reserves here are no less than 40% of the total consumption). What is more, the development and strengthening of interstate cooperation is very important, which will help in particular to resolve the already mentioned problem of the exchange and transportation of electricity between countries, as well as the interrelationship between irrigation and hydropower, and in the final analysis to create a common energy, water, and services market in Central Asia. Several projects are already underway in this area. For example, in 2003 a power transmission line of 100 kW was restored to Afghanistan (the town of Kunduz), and construction of a line of the same capacity has begun, Batken (Kyrgyzstan)-Kanibadam (Tajikistan), which will make it possible to organize alternative energy supply to the Sogd Region. Immense efforts are being exerted to create an Interstate Hydropower Consortium of the Central Asian countries.

As for the construction of new facilities, under current conditions they can only be carried out with the help of foreign investments. Of course, facilities built in this way will be owned by the investors, which is nothing to fear, since this is standard world practice. These power plants will nonetheless be operating for the benefit of the economy and people of Tajikistan.

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[8] The fact that the country's own funds should become the foundation for a revival in power engineering is confirmed by the practice of recent years. Despite all efforts, including by the republic's government, only 45 million dollars in foreign investments granted by the Asian Bank of Development (to be allotted over the span of five years) were generated for rehabilitation of the energy system. This is only 5% of the funds needed for this purpose.

[9] Today raising the cost of electricity is a bugbear for the population. But if we look at world practice, it turns out that the most developed countries (with the highest standard of living) have the highest electricity costs. Their increase is the "end point" in the chain of reforms to improve the economy and state's financial and credit sphere. This is why they can be an indicator of the country's economic development, the basis of which is power engineering.