

“Decision-makers should be guided by the long-term goals in the favor of the republic’s sustainable development, and not solve short-term problems in the economy or energy sector with the help of coal. The entire heavy burden of the consequences of such decisions will be transferred to the new generation. Dependence on coal is extremely dangerous,” an independent expert from Tajikistan makes an analysis of the environmental consequences of coal mining, specifically for CABAR.asia.

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Coal mining continues to break records in Tajikistan. People who are supporting the development of the coal industry in republic call the full-fledged transition to this fossil fuel as “a spirit of the times” and say that without the use of coal in the fuel-power and industrial sectors, the republic has no development prospects. The authorities prefer to mention about new jobs, benefits for the economy, but are silent about the environmental and social consequences. Progressive representatives of the scientific community and environmental organizations call the return to coal as short-term solutions to pressing economic problems with far-reaching consequences and which remind of responsibility before the environment and future generations.

Geologists began a systematic study of coal deposits in Tajikistan in the late 1920s. In the 1970s, in the Soviet republic, coal production reached 0.9 million tons, while annual consumption in the national economy reached 1.5 million tons. The explored reserves of coal by the beginning of the 1990s seriously increased, while the dynamics of its production, on the contrary, decreased. So in 1988, the production of this fossil fuel amounted to 77.7% of the 1970 level. In 1990, about 0.5 million tons of coal was mined, in 1991 – just over 0.3 million tons.

According to official data, there are over 36 deposits and coal occurrences in Tajikistan, which represent all varieties of this type of solid fossil fuel: from brown coal to hard coal, including close burning coal and anthracite. The total coal reserves in the republic exceed 4 billion tons.

### **Independent coal**

The situation with coal industry was rapidly deteriorating in independent Tajikistan. The

collapse of the Soviet Union, the cessation of centralized supplies of equipment and state subsidies, as well as the civil war that began in 1992, negatively affected both the overall production of this fuel and the state of the sector in general. From 1991 to 2000 coal production decreased from 500 thousand tons to 20 thousand tons per year. In 1997, coal production amounted to only 17,000 tons. By 2001, the *Fan Yagnob* and *Shurob* mines operated in Tajikistan, with annual production of about 20.5 thousand tons of coal. At that time, this amounted to less than 5-10% of the country's total energy needs.

In the event of a crisis, the republic's authorities approved the Coal Industry Development Program (1997) for the period of 1998-2010, setting ambitious goals, according to which the planned coal production in the country for 2001 was 1.1 million tons. In fact, it reached 26,000 tons of coal. This coal was mainly used for heating purposes.[\[1\]](#)

It is worth noting that by the beginning of the new century, energy problems in Tajikistan became chronic and acquired the scale of a national disaster, which was especially acute during the cold period. This was due to the fact that the lion's share of electrical power in the republic was produced (and is being produced) through the use of hydropower. Tajikistan produces more electricity in the summer than it consumes, and in winter it experiences an acute shortage of electricity. The World Bank estimates that approximately 70% of the population suffered from countrywide winter electricity shortages.

In 2001, the Government of Tajikistan approved the Concept for the development of fuel and energy infrastructure for 2003-2015. Unlike the 1997 program, this Concept was more realistic and assumed that by 2005 the annual coal production would reach 300,000 tons of coal, however, the real figure reached only 90,000 tons. According to government authorities responsible for coal mining, such factors as the lack of financial resources, including foreign investment and low production and technical potential of the industry enterprises, impeded the implementation of the Concept.

To support the coal sector in the period 2003-2010, the authorities allocated financial support to coal mining companies in the amount of 5 million 133 thousand TJS and 1 million 220 thousand TJS for geological exploration. After 2005, coal production grew at a slow pace. In 2007, the coal production reached 164.7 thousand tons, and in 2011, coal enterprises reported 236.8 thousand tons of coal mined. Even then, it was obvious that the republic intended to mine coal on an industrial scale and that it was not just about solving the energy needs of the population.

## **Coal renaissance**

2012 has become a milestone in the history of the modern coal industry of Tajikistan. The key factor that contributed to the further renaissance of coal in the republic was - the natural gas problem. Disruptions in the supply of natural gas, which was imported from Uzbekistan, arose in early 2012, when both the population and enterprises especially needed it. The supply of "blue fuel" completely stopped in spring. Officially, Uzbekistan stopped supplying gas for economic reasons - it became more profitable to sell it to China, but political scientists considered this a politically motivated decision (cold relations existed between neighboring republics for a long time, there was a visa regime, and there was no direct transport connection between the two capital cities).

The Tajik government faced the risk of shutting down (partially or fully) the largest enterprises, which functioned by using natural gas, including *Tajikcement* and *TALCO* aluminum smelter. Therefore, on April 4, 2012, the "Law on Coal" was adopted in Tajikistan, aimed at actively extracting this fuel and attracting investments in this sector. And on April 20, 2012, the head of state Emomali Rahmon in his Message to the Majlisi Oli made a statement in which he noted: "... meeting the country's needs for combustible materials is possible through the effective establishment of coal production, its widespread use in industry as an alternative energy source".[\[2\]](#)

In April, the mass media wrote that 130 enterprises in the republic (including 80 enterprises producing building materials, 20 metallurgical, 17 canneries, a cement and glass factories) that had previously worked on gas switched to coal.

From May 1, 2012, a ban on coal export was introduced in Tajikistan. However, in July 2013, the Minister of Economic Development and Trade, Sh. Rakhimzoda, stated that after Tajikistan joined the WTO, some normative acts were automatically repealed, in particular, the decree imposing a ban on coal export.

The government and relevant departments, including the later reformed Ministry of Energy and Industry of Tajikistan, urgently began negotiations with interested foreign investors on the development of coal mining. Representatives of Chinese companies appeared who were interested not only in coal, but also in other mineral resources in Tajikistan. By mid-2012, China promised to allocate about \$ 1 billion to the republic as grants, technical assistance and soft loans for the development of the industrial, energy and transport-communication sectors.[\[3\]](#)



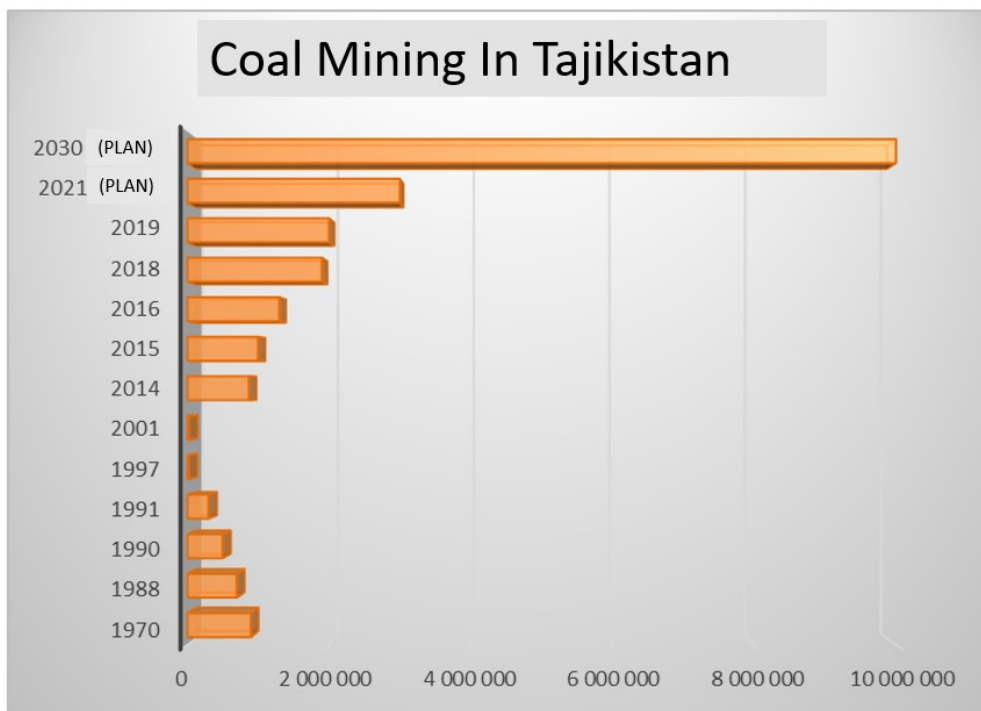
Photo by Natalya Idrisova

In November 2012, the construction of the first phase of the Dushanbe-2 Central Heating and Power Plant (CHPP) began. The launch ceremony of the first phase construction of the CHPP, which consisted of two energy boilers with a total capacity of 100 megawatts, was held in January 2014. In September of the same year, President Emomali Rahmon and Chinese President Xi Jinping laid the first brick for the construction of the second stage of the 300 MW CHPP. The total cost of the second stage of Dushanbe-2 CHPP amounted to about \$ 350 million, 80% of which was allocated as a soft loan by Chinese *Eximbank*. The second phase of the Dushanbe-2 CHPP was launched in December 2016. The main contractor for the construction was the Chinese company TBEA. The Dushanbe-2 CHPP has become the main consumer of coal in the country. In order to reimburse the funds spent on the construction of the CHPP, Tajikistan agreed to give the *Upper Kumarg* and *Duoba* gold deposits to China, where mining of precious metals started in 2019.

### **New (anti) records**

As a result of creating favorable conditions for the extraction and use of coal and the arrival of foreign companies that were interested in investing in dirty fuel, despite all environmental and social risks, production volumes began to grow actively.

In 2014, 870 thousand tons of coal was produced in Tajikistan, over 1 million tons in 2015 and more than 1.3 million tons in 2016. In 2018, the Ministry of Industry and New Technologies reported a new record - coal enterprises produced 1.9 million tons of this fuel. According to official figures, in 2018 industrial and energy enterprises and national economy facilities were provided with coal in the required amount, and about 45 thousand tons of coal was exported. At the end of December 2019, the *Angishti Tochik* (Tajik Coal) unitary enterprise announced that coal production in the republic amounted to more than 2 million tons - the highest figure in the history of Tajikistan. This is 100 times higher than it was mined in 2000. At the same time, despite record volumes of production, the price of coal at the end of 2019 doubled - from 50 dirhams to 1 somoni per kg. The authorities said that there were no objective reasons for the price hike and blamed speculators and intermediaries for the current situation.



The chart was compiled by CABAR.asia Intern, Kaniet Zhamilova based on the data in the article

According to the Ministry of Industry and New Technologies, at present, more than 200 enterprises in the republic use coal as fuel. The government of Tajikistan intended (until 2020) to increase the level of production capacity of the coal industry to such a level that it



would ensure not only domestic needs, but also export of coal and coal products abroad. The share of coal in the fuel balance of the republic by 2021 may increase to 3 million tons. And according to the existing concept of development of the coal industry by 2030, Tajikistan intends to produce more than 10 million tons of coal. The authorities are considering the possibility of building new large thermal power plants that will operate on coal. Thus, for the period until 2021, it was predicted to commission 700 MW of new capacity at power plants using the *Fan-Yagnob* coal reserves and 300 MW - the *Shurab* reserves.

## Chart

The rise of the coal mining industry served as an impetus for the development of another rather “polluting” industry - cement production. “For several years, Chinese investors have transformed the cement industry in Tajikistan. Between 2013 and 2015, cement production in the republic increased five-fold,” - Dirk van der Clay noted in his article “China shifts polluting cement to Tajikistan”.[\[1\]](#)

In 2019, enterprises produced 4.2 million tons of cement. More than 1.5 million tons of cement was exported to Uzbekistan, Afghanistan and Kyrgyzstan. The three main producers, which account for 90% of the total volume, are the Tajik Chinese joint ventures *Chungtsai Mohir Cement*, *Huaksin Gayur Cement* and *Huaksin Gayur Sughd Cement*. Cement enterprises use coal as fuel.

Coal is the most dangerous energy source for climate

According to a number of foreign and local experts, the republic runs the risk of facing serious environmental problems, since coal mining and cement production are some of the most polluting industries. The lack of effective environmental control, as well as the high level of corruption, the lack of transparency and a weak civil society in Tajikistan, together become fertile ground for the transfer of polluting technologies and enterprises to the country, ignoring modern environmental requirements and the barbaric use of the republic's resources (bowels).

## Mine impossible to leave

Umed Karimov, Doctor of Physical and Mathematical Sciences and former head of NGO *Energetik*, believes that coal needs to be mined in Tajikistan, but this must be done without destroying the environment. “If people in the villages are provided with coal, they will not cut down eurotia (*мерескен*) and other shrubs. We cannot provide urban heating, smelting scrap metal or producing bricks by means of renewable energy sources. At this stage of the

country's development, coal is necessary and there is nothing to replace it with," he mentions. "However, I am worried about the scale and pace of ecosystem destruction that accompany coal mining," Umed Karimov admits.



Photo by Nozim Kalandarov

Alikhon Latifi, chairman of the Tajikistan Hunters Association, agrees with his opinion. "After the collapse of the Soviet Union and centralized supply of resources, we were faced with active and uncontrolled deforestation of trees and shrubs by the population to meet our energy needs. Coal has become a kind of alternative to solving this problem. Its use can significantly reduce the burden on tree stands (especially if other renewable energy sources are introduced in parallel), "he says.

Alikhon offers to sell coal to the population at low prices and distribute coal for free to a certain extent. This, in his opinion, can free up a huge amount of time that children and women of mountain villages spend on collecting and transporting firewood.

"The extraction and use of coal create additional jobs, partially solves energy problems, and

reduces the pressure on wildlife. But we must admit that coal is not a panacea for all problems, "Alikhon Latifi believes.

Another point of view is shared by Anton Timoshenko, director of the environmental organization *Melenkaya Zemlya* (Small Earth). "Providing the rural population with coal and producing coal on an industrial scale are two different things. For example, the village's energy problems can be solved by insulating buildings, introducing economical furnaces and other energy-efficient equipment, and at the same time developing local renewable energy sources. This will provide an opportunity to simultaneously deal with issues of improving living conditions, reducing the risk of diseases, reducing costs, etc. By distributing coal for free, we will only postpone the solution to the problem for later," continues Anton Tymoshenko.

"Coal mining leads to the destruction of the vegetation and by giving work to one, takes it from others. The development of the coal industry in Tajikistan potentially threatens promising sectors of the economy, including, tourism sector and organic agriculture. Communities that live near coal mining areas receive minimal benefits but suffer from pollution and its effects."

Muazama Burkhanova, Candidate of economic sciences and director of the Public Foundation for the Support of Civil Initiatives (*Dastgiri Center*), recalls the health risks of using coal: "The negative effects of burning and using coal on health are well known. This is a serious risk for miners, local communities and ordinary citizens. Among the substances that enter the environment when burning coal at thermal power plants, the most dangerous are volatile compounds and toxic substances such as mercury, arsenic, lead, cadmium and others. When they enter the human body in relatively small amounts, they can accumulate there, causing destruction of organs, appearance of malignant tumors, mutagenic effects and a decrease in resistance to infections."

"It is important to note," says Muazama Burkhanova, "that coal is not only polluting, but also extremely risky in terms of economic losses. Throughout the world, coal plants operate at a loss and are subsidized by the state. More and more countries are announcing plans to completely abandon the use of coal for electricity production in the coming decades. In recent years, the largest international banks and funds began to turn away from coal. They cut back on investments or completely withdraw their funds from coal projects. However, in Tajikistan, the extraction and use of coal as fuel is supported by Chinese and domestic entrepreneurs, as well as Chinese development banks. China, is improving its environmental protection policy in its own country, while moving polluting raw materials production to other countries, including Tajikistan."



Coal is the most dangerous source of energy for the climate. In one of its statements, the Tajik NGO Climate Change Network noted: "It is in the interest of the republic not only to insist on more stringent goals to reduce global greenhouse gas emissions, but also to do everything possible to combat climate change at the national level. The large-scale development of the coal industry contradicts both the basic principles of the Paris Agreement on Climate Change, to which Tajikistan is a party, and the objectives of the existing national climate policy."

### **"Clean" coal is a dirty lie**

Coal mining and its use is usually accompanied by a multilateral negative impact on the environment. The larger the scale and volume of coal production, the more environmental problems can occur. Currently, over 90% of the total coal is mined in open-pit mining technique. This means that the terrain itself, surface and underground waters, soil and vegetation cover and the animal world are seriously affected. In addition, the atmosphere is polluted as well.

There is no open data and information on the real impact of coal mining enterprises on the environment and public health in Tajikistan. Authorities prefer not to talk and share information about it. Many doubt that all the necessary modern environmental requirements are fully implemented when considering, approving and executing coal projects. There are reasons for this - the history of the coal industry itself shows that companies and governments often put income above health or environmental issues.

It is interesting that the official state body responsible for environmental protection - the Committee for Environmental Protection under the Government of the Republic of Tajikistan for all these years has never made official statements and did not indicate its clear positions related to the active extraction and use of coal in the republic. Representatives of this institution only limited themselves to small comments or standard replies as - "it does not exceed the maximum permissible concentrations", "it meets the norms", "the cleaning equipment is available" when public outrage was splashed on social networks or on the pages of newspapers.

According to *End Coal*, at present, the efficiency factor of the most advanced coal-fired power plants is about 44%. Emission control systems (if installed) help prevent sulfur dioxide, fine particulate matter and mercury from entering the atmosphere. Equipping coal-steam plants with such equipment increases their total cost by hundreds of millions of US dollars. Such equipment requires constant care and periodic replacement. All this together makes coal-fired power plants much more expensive and economically disadvantageous

than using renewable energy sources. If we look at the whole chain – from the extraction, processing and transportation of coal to its burning and disposal of waste from coal-fired power plants, it becomes obvious that coal is not a “clean” fuel.

The coal industry poses a serious danger to clean and available water. A huge amount of fresh water is consumed and polluted during the extraction, transportation and burning of coal at thermal power plants. The review of “The State of the Coal Sector of the Republic of Tajikistan”, prepared several years ago by the environmental organization Malenkaya Zemlya (*Small Earth*), states that: “pollution of water resources remains the main problem of coal enterprises. Unresolved are the issues of reducing the degree of pollution of wastewater of all categories.” Moreover, according to End Coal, a typical 500 MW coal-fired power plant draws a volume of water equivalent to filling the Olympic pool (2,500 cubic meters) from the source every 3.5 minutes. The pollution of water sources by the coal industry makes it unsuitable for drinking and causes serious damage to the biodiversity of aquatic ecosystems.

Today, coal seems to be a cheap option to solve pressing energy issues in Tajikistan. However, this does not take into account the entire social and environmental value. Large international investors supporting the coal industry offer preferential long-term loans and shift all risk and external costs from the private sector and government to ordinary taxpayers. The reorientation of the economy to coal creates problems for decades to come. Even mothballed mining areas and waste storage sites for coal-fired power plants have long been a serious threat and danger to the environment and human health.

Environmental organizations in Tajikistan have repeatedly stated that support for the broad development of the coal sector will hinder the formation of a green economy in the republic.

This will hook on the republic to polluted fuel for the next 30-40 years. Coal will attract financial resources that could be mobilized and directed to projects and programs on energy conservation, development of alternative energy sources and other “green” initiatives, which could create at least jobs and reorient the economy to increase the efficiency of using renewable natural resources and technological re-equipment.

Decision-makers should be guided by the long-term goals in the favor of the republic's sustainable development, and not solve short-term problems in the economy or energy sector with the help of coal. The entire heavy burden of the consequences of such decisions will be transferred to the new generation. Dependence on coal is extremely dangerous. It makes us destroy the environment, ruin our own health and push us on a path, deviation from which will not be easy.

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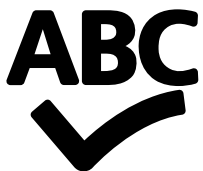
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[1] <https://www.chinadialogue.net/article/show/single/en/9174-China-shifts-polluting-cement-to-Tajikistan>

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