

GARDABANI COAL-FIRED THERMAL POWER PLANT AND ASSOCIATED PROBLEMS



Striving for environmental and social justice in Georgia



For monitoring of activities of International Financial Institutions

Coal-fired thermal power plant in Georgia

On 16 October 2015 Dongfang Electric of China and Georgian Industry Group signed the protocol of intentions at 200 million US Dollars for the construction of 150 million kilowatt coal-fired thermal power plant¹.

The same day an agreement was signed between Georgian Government, Tkibuli-150 Ltd and SC "Commercial Operator of Power System" on the construction, owning and operating a coal-fired thermal power plant in Tkibuli municipality. Under the agreement, the construction of 150 million kilowatt thermal station should have started no later than 30 September 2016 and be finished before 1 January 2020.

On 30 June 2016 an amendment, providing for the construction of thermal power plant in Gardabani instead of Tkibuli, was introduced to the agreement.

The project history and sponsor

It is noteworthy that the attempts of building coal-fired thermal stations in Georgia started already in 1998. The guiding motivation behind the project is to find a reliable market for the coal mined at Tkibuli-Shari coalfield. Coal mines are the only job opportunity in Tkibuli, and hence each new government attempts to implement the thermal plant project there, which, according to them, would become a stable source of employment. In 2006 Georgian Industry Group (GIG) became the owner of the license for Tkibuli-Shaori coal mining, and established, for that purpose, "Saqnakhshiri" Ltd.

The above mentioned enterprise is the property of "GIG Holding", which, in its turn, is owned by "Chemexim International" company registered in the Marshall Islands. The same company owns "Kutaisi Automotive Plant" Ltd. founded in 1945, many small hydro power stations, Gardabani thermal plant, etc. GIG also owns 25% shares of "Heidelberg cement Georgia" Ltd, which is the largest consumer of coal.

In 2009-2015 sixteen workers were killed in Mindeli mines, and the number of those injured exceeded a few dozen people. None of these tragedies have been properly investigated. In most cases the victims were declared guilty². It would be also interesting to note, that already before the start of the investigation "Saqnakhshiri" estimated the incident as "an accident". Almost in all cases "presumably, the micro-mining strike took place, causing breakage of the rock mass, i.e. Phelan. This happened during the manufacturing process, so that there had been an accident"³. "Saqnakhshiri" company gave the same explanation for the death of deputy chief of the mines in 28 January 2014⁴.

¹ The initiative first time was announced during Dongfang Electric and Georgian Prime Minister I.Garibashvili meeting, in September 2016 during the World Economic Forum

² <http://www.transparency.ge/blog/pmagharoelta-daghupvas-saakashvili-politikuri-mokavshiris-kompaniashi-arsebul-koruptsias-abrale>

³ <http://www.amerikiskhma.com/a/georgia-in-tkibuli-the-14th-miner-was-lost/1768915.html>

⁴ http://www.newpress.ge/index.php/news_id/3141

39b, Paliashvili Street, IV floor,
0179, Tbilisi, Georgia
Tel: (032) 222 38 74
E-mail: greenalt@greenalt.org
Web: www.greenalt.org

Coal power plant in Gardabani

Legal issues

As the main reason for the change of the contract was named the fact that the presence of large landslide zones in the construction area was alleged during engineering and geological studies within Tkibuli project. As a result of more detailed studies, it became evident that "the suitability of the territory for the power plant is arguable. In view of the above, the company has found an alternative area to accommodate the thermal power plant in Gardabani on the basis of pre-existing power unit. The suitability of a given territory is not in doubt, what makes the project advantageous in terms of its technical and economic efficiency⁵."

It is also noteworthy that in the EIA report, presented for public discussion in 6 January 2016, no concern is expressed with regard to geological risks.

According to updated contract, "Tkibuli-150" Ltd. shall start the construction before 30 September 2016. However, the company has not developed and presented the EIA report, and, respectively, it has not received the Environment Impact Permit.

The Agreement contains a number of problematic provisions that could jeopardize the implementation of the commitments undertaken by Georgia under EU-Georgia Association Agreement and European Energy community Treaty⁶.

In particular, the project provides for 1 billion kilowatt-hour annual power generation, most of which will be purchased by "Electricity Market Operator" , provided the thermal plant operates at local coal during next 15 years.

The Agreement provides for the purchase cost of electricity for the next 15 years after commissioning the thermal plant.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Price in USD	7,9	8,06	8,22	8,38	8,55	8,72	8,9	9,07	9,26	9,44	9,63	9,82	9,82	9,82	9,82

According to European Energy Union Treaty a country cannot have state aid if it is not estimated and approved by the appropriate body. The "state aid" goes beyond the notion of direct subsidizing and includes grants, credits, tax exemptions, privileged access to infrastructure, rent or purchase land at below market price, more favorable terms on risk capital and etc. At the same time these articles are not consistent with exemptions allowed for state aid under articles 107.2 and 107.3. State aid having a social character granted directly to consumers or if it promotes economic development of areas with abnormally low standard of living or facilitates development of certain economic activities or areas, where such aid does not adversely affect trading conditions contrary to the common interest.

According to some of the analysts the coal project, if successful, will replace the electricity generated by gas thermal plants by much cheaper energy. However, given the Agreement provisions, obliging the system operator to buy electricity at a predetermined price until 2035, the prospect of cheap electricity seems vague.

Gardabani Environmental Issues

Gardabani is located in 38 kilometers from Tbilisi, in Kvemo Kartli region, which is one of the most industrially polluted regions of Georgia.

Thermal power plant with a capacity of 150 megawatts (Tbilisresi) was commissioned in 1963 to supply Tbilisi with electricity. In 1972 its capacity reached 1250 megawatts. After the collapse of the USSR different units of the power plant were privatized. Currently several gas units owned by GIG and belonging to "G-Power" are operating there.

2 June 2016 an international company affiliated with GIG, acquired from Russian Inter RAO two power units with the capacity of 300 megawatts. According to the company "It is planned to use the acquired assets both, to preserve the existing capacities, and to implement future strategic projects together with GIG Chinese partners⁷."

Currently another energy unit is under construction in Gardabani. In 2015 SC "Partnership Foundation" (49%) and SC "Georgian Oil and Gas Corporation" (51%) built thermal power plant "Gardabani 1" with the capacity of 220 megawatt.

⁵ Georgian Government decree 1241, 30 June 2016

⁶ Georgia signed the European Energy Community treaty at 14th October 2016

⁷ <http://www.gig.ge/?newsid=17>

And on 26 October 2016 foundation was laid for building "Gardabani 2", the owner of the shares of which is SC "Georgian Oil and Gas Corporation", and the construction is carried out by "China Tianchen Engineering Corporation (TCC)".

Gardabani gas power plants are basic sources of pollution in Georgian energy sector, and Gardabani share in the atmospheric pollution is 9,6%.⁸ Basic emissions are CO, NOx and dust. There are some other small enterprises in the region; besides, Gardabani territory is crossed by several pipelines, including Baku-Tbilisi- Ceyhan oil pipeline. Generally speaking, Kvemo Kartli ranks second among Georgian regions in terms of pollution (28.1%). This is due to energy and construction enterprises in Rustavi, Gardabani and Kaspi.

In August 2016 Birliki village population of Gardabani region started protest action. According to them "the village is located close to industrial zone and air is being polluted through the years", and the dust generated by enterprises harms not only their health, but also their harvest⁹.

Impact of Gardabani coal-fired thermal plant on the environment

The construction of a new coal-fired power plant will further deteriorate the situation in terms of pollution. GIG company has not received the Environment Impact Permit, however, according to the information on the Company web-site "the 300 megawatt coal-fired thermal plant equipped with modern CFB technology is under reconstruction now". According to the law on Environment Impact Permit the ecological expertise is required for thermal power plants of over 10 megawatt capacity¹⁰.

Using Tkibuli coal for electricity generation creates two problems: emissions of coal-burning and waste disposal. Both of these problems are closely linked with Tkibuli coal quality, characterized with low calorie, high ash-forming and fine-factiousness which complicates its use in energy equipments. Besides, Tkibuli coal calorific effect is about 3000-5000 kcal/kg; average ash-forming - 27-30%, moisture content - 1-10%, the outcome of volatile substances - 30-50%, sulphur content - 1,5%. The coal from this mine is piceous and belongs, mainly, to gas containing coals¹¹.

The coal burning under any technology produces hazardous pollutants, including sulphur dioxide, Nitrogen oxides, polycyclic hydrocarbons, suspended particles (PM2.5 and PM10), etc. Coal-fired thermal plants produce great amount of suspended particles which can spread hundreds of kilometers from the source.

PM2.5 suspended particles are able to penetrate into the lymph nodes, linger in the alveoli of the lungs, and clog mucosa, causing the diseases like bronchitis, emphysema, lung cancer, atherosclerosis, and heart diseases. Smoke resulting from coal combustion is classified as a carcinogen by the World Health Organization.

Besides, coal contains small amount of different elements, like mercury, cadmium, lead, arsenic and radioisotopes. Coal-fired thermal plants are considered to be the second major source of mercury emissions in the world. Mercury can cause irreversible changes in the child's brain and prevents the development.

Air pollution in Georgia, especially in urban areas, is generally a big issue. According to WHO country estimates on air pollution exposure and health impact, annual mean of PM2,5 in urban areas is 23 µg/m³, and for the country - 19 µg/m³, which is twice the WHO recommendations. According to the same report ambient air pollution contributes to 90 deaths per 100,000 people in Georgia¹².

Besides, high ash-forming capacity requires the development of high quality waste management plan. Waste from coal combustion contains hazardous substances like aluminum, chloride, iron, manganese, sulphates and toxic substances: selenium, lead, cadmium, nickel, copper, chromium, boron, molybdenum, zinc and arsenic. And placement of waste on landfills often leads to air, and water pollution.

Conformity of the project with the country's liabilities and its energy policy

It is outrageous that the government began construction of coal-fired thermal plant without any environmental or social study, and without the rationale for the project.

Besides, the project does not conform with the energy policy main directions approved by Georgian Government on 24

⁸ http://www.unece.org/fileadmin/DAM/env/eia/documents/EaP_GREEN/Georgia_30.09_Consultation_meeting_on_the_draft_SEA_report/SEA_Scoping_Report_GEO.pdf

⁹ <http://1tv.ge/ge/news/view/134343.html>

¹⁰ Law on environmental impact permit, <https://matsne.gov.ge/ka/document/view/20206>

¹¹ <http://www.nplg.gov.ge/dlibrary/collect/0002/000097/Disertacia.pdf>

¹² <http://www.who.int/mediacentre/factsheets/fs292/en/>

June 2015¹³. In addition, "Ten year Network Development Plan of Georgia 2015-2020", underlines "A Georgia has some fossil deposits (natural gas, oil, peat, coal), however they are available in insufficient quantities to allow economical use"¹⁴. Also the project has not been included in the draft version of the electric power strategy published by the Ministry of Energy in September 2016¹⁵.

Besides, it is impossible to discuss the planned projects/activities without consideration of climate change related local or global processes.

Though Georgia acceded to the Paris Agreement in 2015, its ratification has been postponed until 2017.¹⁶ It is also noteworthy that Georgia keeps expressing its political will to become a renewable energy development hub, which was declared by Georgian President, in his presentation to the sixteenth session of the Conference of the Parties to the UNFCCC stated that "Georgia shall become a carbon-neutral State", and in 2015 Georgian Prime-Minister stated in Paris that "Georgia is a real leader in combating climate change, especially in view of renewable energy consumption and export"¹⁷.

Chinese investment in the sector and related matters

It is also interesting that under the agreement with GIG, the project investor is Chinese Dongfang Electric Invests. The agreement was signed during the Prime Minister's visit to China and, supposedly, Dongfang Electric, which is one of the largest manufacturers in China, will appeal to one of Chinese National banks.

Respectively, Georgian community expects from Chinese company to comply with Green Credit Guidelines¹⁸. Besides, Chinese President Xi Jinping, in the Us-China Joint Presidential Statement on Climate Change stressed that "... China will strengthen green and low-carbon policies and regulations with a view to strictly controlling public investment flowing into projects with high pollution and carbon emissions both domestically and internationally"¹⁹.

In the case of financing Gardabani thermal plant project China will have problems to comply with its commitments to strictly control the projects with high pollution and carbon emissions.

First of all, under the Green Credit Guidelines, projects without environment impact assessment shall not be implemented.

Recommendations to Georgian Government and Potential Investors

Georgian Government prior taking the decision on project implementation should ensure that:

- All the requirements under Georgian law are met;
- The project's environmental and social impact assessment is carried out (E&S aspects) in accordance with International standards; The cumulative impact of Kvemo Kartli Energy sector and the project cost-effectiveness, including external expenses (air pollution, diseases etc.) should be examined;
- The results of environmental and social impact assessment are widely discussed with public participation in Gardabani and Tbilisi.

Potential investors should ensure that:

- They not finance the projects contradicting to Georgian and the EU legislation;
- Finance the projects unless compliant, effective and complete document on environmental impact assessment is submitted.

Carry out economic, environmental and social risks assessment of Gardabani coal-fired thermal plant, and consider the coal alternatives in order to ensure green energy development (energy efficiency, renewable energies).

¹³ <https://matsne.gov.ge/ka/document/view/2894951>

¹⁴ http://www.gse.com.ge/new/wp-content/uploads/2015/05/TYNDP_GE_2015-2025_ENG.pdf

¹⁵ <http://www.energy.gov.ge/show%20news%20mediacenter.php?id=600&lang=geo>

¹⁶ <http://sputnik-georgia.com/society/20161006/233410827/saqarTvelo-klimatTan-dakavSirebuli-SeTanxmebis-ratificirebas-2017-welsmoaxdens.html>

¹⁷ <http://news.ge/ge/news/story/161453-irakli-gharibashvili-am-shetankhmebis-mightsevas-udidesi-mnishvneloba-eqneba.-utankhmoebatsarumateblobis-tolfasi-iqneba>

¹⁸ Issued by the China Banking Regulatory Commission on 24 February 2012, <http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>

¹⁹ <https://www.whitehouse.gov/the-press-office/2015/09/25/us-china-joint-presidential-statement-climate-change>