

**Third Party Evaluator's Opinion on
Severnaya Gas Combined Cycle Power Plant Project (I)(II)**

Zeynalov Fakhraddin Gadir ogli
Chief of power energy substation of Govlar urban settlement of Tovuz district
Azerbaijan Republic

Relevance:

The population of Azerbaijan is about 8,532.4 thousands. 51.5% of them is urban population, 48.5% rural. The population of Baku is more than 53% from the general urban population of Azerbaijan. The most part of the industrial enterprises of Azerbaijan settles down in Baku. However, more than 70 % electric energy are developed on significant distance from Baku. Accordingly, this entails expenditure for transportation electric energy. Azerbaijan's total installed capacity for power generation is about 5,100 MW.

Main indicators of the section on electricity, gas supply and distribution *

Production	2000	2001	2002	2003	2004	2005	2006
Electric energy, bill. kWh	18.7	19	18.7	21.3	21.7	22.9	24
of which:							
thermoelectric station	17.2	17.7	16.7	18.8	19	19.9	21.4
hydroelectric station	1.5	1.3	2	2.5	2.7	3	2.5
Renewable generator installations	0.013	0.015	0.019	0.03	0.034	0.088	0.142
Thermal energy, thsd. kcal	3,487	2,412	2,262	2,726	4,904	4,723	5,304

Source: State Statistical Committee. Azerbaijan Statistical Yearbook. Baku.

The **production** facilities consist of eight **thermal** plants supplying 85% of generating capacity, and 6 **hydroelectric** plants. Two of thirds of the country's thermal capacity is powered by Mazut (residual fuel oil), with natural gas as the secondary fuel (2,400MW). The second largest thermal plant is in Ali-Bairamly (1,050MW), which needs reconstruction also. But the actual generating capacity now is only 4,200 MW, because 1) main of facilities are obsolete and lack of proper maintenance. Although domestic production surpasses consumption, because of the country's inefficient distribution network, energy losses amounted to around 20% of the electricity that was generated. Over half the country's turbo-generators and boilers and large sections of the distribution network have been in use for more than 40 years. Now, the efficiency and profitability of the state's power utility, Azerenergy, are to be improved. The concern is to be partly privatised after its improvement, along with Azerigas. This is under a plan adopted earlier in 2000, (president H. Aliyev) which called for three basic changes: (1) new incentives and a special campaign to attract foreign investment into this sector, (2) creation of an independent power regulator, and (3) privatising the regional power networks. After the BTC (Baku-Tbilisi-Ceykhan) pipeline comes online in 2005 (*in 1994 –Commence of New Oil Era - Azerbaijan signed a “Contract of a Century” with international Consortium of Oil Companies, and in 1999 – Agreement signed between Azerbaijan, Georgia and Turkey on construction of Main Export Pipeline Baku-Tbilisi-Ceyhan, president H. Aliyev*), oil export revenues are predicted to drive economic growth and consequently electricity demand.

Impact:

In the power sector, wear and tear of equipment (most equipment is several decades old) and decreased use of natural gas in relation to heating oil in the thermal sector have been the most telling factors. Elsewhere, outdated equipment; poor maintenance; and, until recently, little energy efficiency awareness have been among the contributing factors. Air pollution incidence is closely correlated with the distribution of industrial input, Baku and Smgayit have traditionally dominated the outcome.

Table: Pattern of Air Emissions in Azerbaijan, 1990–2003 ('000 tons)

	1990	1995	2002	2003
Total	2,108	879	217	426
Baku		624	110	331
ParticulateMatter	148	23	29	34
Gaseous Matter	1,960	856	188	392
Sulfur Dioxide	90	50	14	15
Nitrogen Dioxide	59	32	26	24
Carbon Monoxide	71	22	18	25

Source: State Statistical Committee. 2005. Azerbaijan Statistical Yearbook 2004. Baku.

In general, most thermal-electric power plants in Azerbaijan are old and in need of modernization. In 2002, a decree was adopted for the energy sector, setting the goal of eventually switching all thermal power plants to natural gas fuel. Severnaya (North) State Regional Power Plant (also known as the Shimal Power Plant) and is now in operation. This has reduced the emissions of NO_x and SO₂. New gas-turbine blocks that are working only on natural gas have been constructed on thermoelectric power stations of Baku city. That was to take out of production old power-generating unit and thus, reduce emissions of sulphuric compounds.

Currently, below-cost tariff levels, low payment collections, and inadequate private sector funding have made rehabilitating the power sector difficult. Recent reform plans have been announced that will help upgrade Azerbaijan for the expected strain economic growth will have on its electricity infrastructure. The international donor community has undertaken several projects to restore and add new capacity to Azerbaijan's power sector. One of this, in early 2003, Azerbaijan's newly completed Severnaya power plant began operation with the help of Japanese companies Mitsui and Mitsubishi. The 400-MW, gas-fired unit provides power mainly to the Absheron peninsula, and raised 2003 electricity capacity by **6 percent** over 2002 levels. Apart from hydroelectric power, renewable energies have no tradition in Azerbaijan but recently and agreement between Azerenergy and Sumitomo has been signed for a project for wind energy.