

**Power Industry of Mongolia: New
development strategies;
expanding and developing
cooperation with North
East Asian countries**

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I would like to start by presenting some figures.

- Two giant neighbors of our country- China and Russian Federation are the second and the third biggest power consumers in the world.
- Another giant in the region, not by the size of its territory, but by the level of its development- Japan, is the fourth major power consumer.
- Fourth country in the region- South Korea, one of the newly industrialized countries, is in the top 10 list of countries with most electricity consumption.

The consumption of energy of the NEA countries

NEA countries	Total consumption of energy	Of which									
		Coal		Oil		Natural gas		Nuclear energy		Hydro-energy	
		Mtoe	%	Mtoe	%	Mtoe	%	Mtoe	%	Mtoe	%
China	1,554.0	1,082.0	69.6	327.0	21.0	-	-	-	-	90.8	5.8
Russian Federa tion	679.6	111.6	16.4	130.0	19.0	364.6	54.0	33.9	5.0	39.6	5.6
Japan	524.6	121.3	23.1	244.0	46.5	73.0	13.9	66.3	13.0	19.8	3.7
South Korea	224.6	54.8	24.4	105.5	46.9	30.4	13.5	33.2	14.8	-	-

- **China** fully provides its coal needs. But annual consumption of huge amounts of coal does not only endanger the country's ecology, moreover, it has become subject of concern for the entire world. China is quickly increasing imports of oil. Accelerated growth of oil imports in China and India is amongst reasons of unprecedented growth of oil prices on the commodity markets. As you might have noticed, consumption of gas, which is a source of a comparatively cleaner energy, in China's energy mix is almost negligible.

- **Japan** with over 80% of its energy mix coming from organic fuel, and **South Korea** with about 80% of its energy mix coming from organic fuel too, are fully dependent on imports of these resources.
- **Russian Federation** is fully self-sufficient in terms of providing its energy needs.

- I am sure that mentioned facts and figures are not big news for you. Because they were the main topics discussed during this conference for more than 10 years. Much was said about current resources and potential increase of oil and natural gas production in Russia, as well as current levels of and mix of consumed fuel and energy resources, and trends of intensifying organic fuel consumption in China, Japan and South Korea, especially that of liquid and gas fuel. All kinds of routes were proposed for transmission and transportation of liquid and gas fuel and electrical energy from Russia to China, Japan and South Korea. Usually those routes went around the territory of Mongolia. Here at the conference, we spoke almost nothing about needs, routes for transmission and transportation for fuel and energy resources to two countries in this region- North Korea (DPRK) and Mongolia. The reasons for this are: absence of North Korean scientists and specialists on this conference, while in case of Mongolia, the country's fuel and power consumption is very little.

- During one of the last conferences I presented about potential intensification of co-operation of Mongolia with other countries of the North East Asia (NEA) region in areas of mineral resources and Power industry. Today I would like to introduce you with the New Power Industry Strategy of Mongolia aimed at developing cooperation with our two neighbors, as well as with other interested countries in the region.
- Whereas earlier strategies focused primarily at providing domestic needs in electrical energy and production capacities, the main distinctive feature of this New Strategy is focus on development and expansion of cooperation in this area. Latest developments on the electrical energy markets of NEA countries suggest that we can hope for successful implementation of the new strategies.

- Let's briefly look at major events happening on the electrical energy markets in our region. China is the region's and the world's fastest growing electrical energy market.
- Last year total installed capacity of Chinese power plants rose to 713 GW. Chinese officials inform [1] that by the end of 2010 total installed capacity of country's power plants will reach 1000 GW. This year China is planning to add 90 GW of new capacity and by 2009 aggregate installed capacity of power plants will further increase to 900GW. This figure is 3 times more than total installed capacity of power plants of the region's giants, such as Russia and Japan. In 2007 electric energy production in China increased by 14.4% and reached 3.26 trillion kWh. This accounts for almost 1/5 (one fifth) of the overall electricity production in the world.

- Until now, only the USA produced and consumed more than 20% of the world's electrical energy. If these high rates of increase of electrical energy production and consumption in China shall remain the same, then in 5 years time, or by the year of 2013, China will “successfully” catch up with the USA in terms of volume electrical energy production and consumption. International Energy Agency informs [2], that China plans to increase electricity production in average by about 4.7% per annum in order to triple current level of production by 2030. Annual level of production increase shall reach 7.8% in 2005-2015, and 3.1% in 2015-2030.

- Until 2030 China plans to construct 1312 GW of new power plants, more than current total installed capacity of power plants in the USA. In 2030 total installed capacity of power plants and electricity produced in China will reach 1775 GW and 8478 trillion kWh, respectively. This is brief description of current situation and nearest perspectives of electricity production and consumption in China.
- I mentioned about electrical energy in China not only because of its huge amounts. The main reason is that, while established markets of electricity of other major countries in the regions, such as Russia, Japan and South Korea, can be considered to be relatively self-sufficient and closed up, China's electricity market can not be closed up due to various reasons, including those related with resources, ecology, transportation and many others.

- Now, regarding possibilities and to some extent requirement for Mongolia's integration within the electricity markets of NEA countries. Mongolia's integration in the quickly growing market of electrical energy in the NEA region is backed up by the country's abundant mineral resources, especially of coal. Mongolia's resources remain almost unexplored; therefore we can only talk about geological resources of coal. According to prognosis by Mongolian geologists, the country has about 150 billion tons of coal, which places Mongolia amongst top 12 coal rich nations of the world.
- The second strong argument is its favorable political situation. Mongolia enjoys good political relation with its two big neighbors, these relations being categorized as strategic partnership. Our neighbors and the whole region don't need a poor, politically unstable, puppet country controlled from overseas. Unfortunately, sad events that happened in Mongolia's capital of Ulaanbaatar in the begging of July this year demonstrated that such threats do exist.

- A possible solution to speed up Mongolia's economic development is the country's entrance in, or integration within the system of economic cooperation of the region's major nations, as a rightful partner. This would strengthen overall collective security in the region and facilitate the region's overall prosperity. This is clear for leaders of both our neighbors and other countries of NEA region.
- An interesting scientific conference took place in Ulaanbaatar last June. The conference was organized under patronage of the Mongolian Prime Minister S. Bayar and focused on the subjects very close to those of this conference. The conference was called "Mongolia, Russia and China: Together towards Development in the 21st Century". Its main participants included scientists of social disciplines- historians, political scientists and economists of academic institutions from the above mentioned three countries.

- Unfortunately I did not take part in this interesting conference, but after studying informative press releases about the conference, I understood that we “the engineers” are lagging behind social scientists. Although power industry cooperation was not precisely discussed during the conference, but there were a lot of talks about need for and ways to include small developing countries within the big nations cooperation and new approaches towards economic cooperation of small and big nations.

Integration of Mongolia within large scale economic projects of our region is not under discussion today at this conference. However, a number of businesses from countries present here are highly enthusiastic to invest substantial capital in Mongolia's fuel and energy and mining sectors, while top rank leaders are heading talks and signing memorandums regarding joint realization of large scale projects. For example, Mongolia and China are initiating talks of first big projects in the Power sector. Thus, during the official visit of Mongolian President N.Enhbayar to China in 2005, leaders of two countries reached an agreement to construct three big coal fired power plants with direct investment from China. These power plants consisting of 6 blocks, each with capacity of 600MW shall be based on the Gobi coal deposits in the south of Mongolia. Negotiations on construction of the first of three power plants are not going smoothly. Perhaps, talks on this kind of big scale projects with billions of USD value can not go so quick and easy. Nevertheless, negotiators from both sides should learn from best practices of developed nations, with special focus on suitable forms of ownership and price setting practices. Besides, Chinese businesses and power industry specialists must have accumulated rich experience in negotiating and making deals for similar projects during more than 20 years of cooperation with Western investors, who had invested many hundreds of billions of USD in the Chinese Power industry by building a number of big capacity coal- fired power plants.

- Until 1990's Russia was Mongolia's almost sole partner in Power sector. Even today, almost entire Mongolian electricity is produced at power plants built with technical and economic cooperation from former USSR and today's Russian Federation. Unfortunately, currently our two countries have almost no active cooperation in this field. Judging from establishment of representative offices of companies like Bazovy Element, Renova and Severstaly in Ulaanbaatar, Mongolia, Russian businesses are willing to restore cooperation not only in the Power industry, but in the other sectors such as the fuel and the mining industries. Mongolia needs such cooperation as well. Regrettably, old methods and forms of cooperation are outdated, whereas new and better approaches to cooperation still need to be sought out. I hope that this can be resolved in the coming one or two years, that we together with our Russian colleagues shall find ways to re-establish collaboration in the Fuel and Energy sectors.

Mongolia would like to have close cooperation with Japan and South Korea in the field of Energy sector. One of the possible methods may be construction of a big coal-fuelled power plant on the territory of Mongolia with further export of the produced electricity to China. Of course, this issue needs to be settled with Chinese counterparts.

- It's a simple rule that a country willing to make a big investment in another country, first of all, extensively studies the market engaging own and local experts. Japanese are usually known for their attention to detail. But I am surprised observing first intentions of Japanese companies to enter into Electric energy sector of Mongolia. There is a rich deposit of coked coal called the Tavan Tolgoi deposit in the south of Mongolia. Exploration of the Tavan Tolgoi deposit was under discussion for already 20 years with some breaks in between. Initially there were talks to extract 15-20 million tons of coal, of which about 40% was coking coal, and the remaining part- energy coal. Coking coal is used to produce coked concentrate for further export, as for energy coal, an energy coal- fired power plant can be constructed for further export of electricity it produces. At most pessimistic estimates of annual extraction of up to 15 million tons of coal, there is a need to build a Power plant with installed capacity of not less than 1800 MW. Plans have emerged in recent years to build a coal coking chemical plant, with energy coal to be utilized in the originally designed way, in other words by construction a Power plant and exporting the electricity. However, a Japanese company recently presented a proposal to build a Power plant attached to this deposit with initial capacity of 250 MW and further expansion of its capacity up to 500 MW. Apparently this company neither ignored need to gather and study information on size of the deposit, nor found out about potential volumes and various approaches to exploit this deposit proposed in the last 10 years by diverse Mongolian and foreign companies interested in the deposit.

Conclusions

- Mongolia is interested in participating in the large scale investment projects in the electrical energy of the NEA countries. Furthermore, Mongolia has good potential in the form of enormous resources of coal and other minerals.
- Mongolia's economic cooperation, including cooperation in the Power industry, with its two neighbors, as well as other countries of the NEA region, is lagging behind political cooperation of our countries.
- Since Mongolia's integration within economic cooperation of the big player countries of the region to promote the country's further development is in the interest of all countries in the region, we should all facilitate quick proceeding of this integration process.