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The CEE Bankwatch Networks Mission is to prevent environmentally and socially harmful impacts of international development finance, and to promote alternative solutions and public participation

Issue Paper

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KANIV PUMPED STORAGE PLANT PROJECT

The Kaniv Pumped Storage Plant (PSP) construction project was developed in 1985 in compliance with the "Plan of the placement of HPPs and PSPs on the territory of the European part of the USSR till 1990". The expediency of constructing PSPs in the central part of the United Energy System of the USSR was substantiated by the authors of the project. The construction works started in 1984 and were suspended in 1992 because of the economic crisis. The moratorium on the construction of the Kaniv PSP was cancelled in 1999. The project provides for the construction of four power units with a total capacity of 1000 megawatts. The planned construction period for the Kaniv PSP is nine years.

Officials do not reveal concrete figures regarding the cost of the Kaniv PSP construction project. According to a statement from the Deputy Minister of Power Engineering, roughly USD 500 million are required to carry out the project; but according to estimates from experts and the cost of similar projects, this figure will be about USD 1 billion. In 2006, the Ministry of Power Engineering approached the EBRD for a credit of EUR 250 million for the Kaniv PSP. In December 2006 the EBRD confirmed it had commenced a due diligence process on the Kaniv PSP project which was categorised as a high-risk project needing an Environmental Impact Assessment (EIA). "Ukrhydroenergo" joint stock company acts as the project investor.

Inefficient technology

A PSP is not an independent energy source; rather it is an accumulator, which stores the energy generated by other sources. When there is an excess of electric power in the network, a PSP pumps water to the upper reservoir located at a certain height creating a reserve of potential energy, which is converted into electric power by a water outlet through a turbine from the upper reservoir to the lower basin. In this way the PSP supplies electric power to the network at the time of high demand for electric power.

PSP technology envisages large losses of electric power. A PSP returns to the integrated power system about 70-75 percent of consumed electric power and 25-30 percent is used for its own needs. The overall power effectiveness of a PSP is even less if we take into account power transmission losses.

PSP construction is connected with enormous capital investments (USD 1–1.5 billion), the alienation of large territories, negative impacts on river ecosystems and irreplaceable losses of natural resources and cultural valuables, which is difficult to count.

PSPs part of a dubious strategy

In March 2006 the Cabinet of Ministers of Ukraine approved the "Energy Strategy through 2030". The Strategy foresees the growth of electric power generation mainly via the development of nuclear energy. As nuclear power plants do not have loads shifting ability there is a problem of inconsistency between power generation and its demand.

However, instead of reducing the share of nuclear energy to a reasonable level, the authors of the Strategy proposed the installation of loads shifting capacities (PSPs) inherited by Ukraine from the Soviet Union (Tashlik, Kaniv and Dniester PSP). The Strategy raises a number of concerns as it does not take waste management into account, overvalues the role of nuclear power engineering which completely depends on Russia and shows very low power effectiveness (by 2030 Ukraine has to reach the level at which neighbouring Poland is at now).

Negative impacts of the project

Analysis of the economic, environmental and social aspects of the Kaniv PSP project has revealed a number of its negative consequences.

In the first phase of the construction local residents were involuntary resettled in the 1980s from the adjacent territory without proper compensation and consent. Moreover, the remaining local people will have their traditional lifestyles changed as a result of the waterlogging of agricultural lands, changes in the water level in drinking water wells, and man-made risks related to the very complicated geological conditions in the construction area.

Radioactive impact through the drinking water for the population residing in the lower flows of the river (especially for the city of Kaniv and its 28,000 inhabitants) is expected due to the inlet-outlet of PSP water, which will provoke the migration of radioactive matters (namely strontium-90 and caesium-137) which accumulated at the bottom of the Kaniv reservoir after the Chernobyl disaster.

The shore of the Kaniv reservoir will be destroyed due to regular water outlets. This can lead to the wash-out of the banks up to the complete disappearance of the Zmeiny (Snakes) Islands, which represent a part of the Kaniv Natural Reserve where wash-out processes can be seen even today.

Man-made risks

The location of the PSP in the area of the most dangerous exogenous geological processes is the major risk of the Kaniv PSP project, including the construction of a reservoir of 46.5 million m3 and a dam from 20 to 90 metres high at 140-150 metres above the level of the Kaniv reservoir. The fact that the PSP will operate within the Kaniv HPP affected zone gives grounds to expect unpredictable consequences with possible large-scale, man-made catastrophe.

Violation of EIA procedures of Ukrainian and international legislation

The project violates the state Environmental Impact Assessment (OVOS) procedures because the OVOS for the project was approved on November 6, 2006 without meeting fully the requirements for public participation, particularly when it comes to public hearings. Ukrainian environmental organisations believe that the project sponsor has violated various articles of Ukrainian laws "On Information" and "On Citizens' Requests", the Aarhus Convention, as well as the procedures of Ukrainian legislation regarding public consultations.

The EBRD claims that the EIA/OVOS and public consultation have been undertaken by Ukrhydroenergo in line with national requirements. However, in order to be able to present the project credit for the approval of the board, the EBRD will need to review the EIA/OVOS study and undertake a full EIA process to be in line with its environmental standards. The EBRD is to commission a consultant to assist with the conducting of the EIA process which is to be launched in the second half of 2007.[1] However, recent experience (on February 22, 2007) with flawed public hearings for the 750kV Rivne NPP-Kyiv Substation Transmission Line, another energy project financed by the EBRD, has demonstrated that the presence of an international consultancy brings no guarantees for the quality of the public consultation process unless there is strong supervision from the EBRD.

Disregard of the recommendations of the World Commission on Dams

The authors of the project have violated almost all the recommendations of the World Commission on Dams including the required consent of local residents through consultations with the public and a comprehensive analysis of the various scenarios associated with the development of the energy sector of Ukraine.

Alternatives to the Kaniv PSP project

The project does have alternatives, which from the economic, energy, ecological and strategic points of view would be able to solve the problems of peak loads in the overall power networks of Ukraine in a more efficient way. The simplest way is to avoid problems. This can be achieved through the combination of demand regulation measures and the creation of a system of power generation with a sufficient number of loads shifting capacities. Such an approach will also save fuel, which is in short supply in the country, generating power only in the case of demand for it without additional electricity loss for the storage of electricity.

Thermal power plants make up 60 percent of existing generating capacities in Ukraine and they can be operated in loads shifting mode – yet 80 percent of them stand idle. There is no need to build thermal power plants, but existing ones need to be reconstructed on the basis of modern technologies, to operate with modern-day effectiveness.

The EBRD continues to assert the need to increase power efficiency and to develop renewable energy sources. This is why we are confused by the readiness of the EBRD to support a project which has so many weak points and is an integral part of the national strategy that includes all the measures which have been criticised by the EBRD's experts.

The EBRD should make efforts to help the Ukrainian government to develop a power strategy which is much more effective. It should also support projects that aim to increase energy efficiency and the independence of the Ukrainian economy.

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[1] Response from the EBRD to an information request on Kaniv Hydro PSP, December 22, 2006, http://bankwatch.org/documents/Letter_A_Marsh_22.12.2006.pdf