Pumped storage hydropower plants

Background

The project for the construction of the Kaniv Pumped Storage Plant (PSP) was developed in 1985 and approved by the 27th Session of the Communist Party of the Soviet Union. The justification for the project was the need for load-levelling capacity in relation to the construction of 22 nuclear reactors in the former USSR. Construction was planned next to the existing Kaniv Hydropower Plant on the high right bank of the Kaniv reservoir. Those initiating the construction failed to take into account the complex landscapes and high level of biodiversity that make this part of the Dnieper River valley unique. Some of the local geological and archaeological artefacts, including deposits in the so-called Kaniv dislocations and items from the Trypillian and Zarubyntsi cultures, are of international significance. There is therefore a network of natural, historical and cultural sites that are under the highest level of state protection, and the area is particularly attractive in terms of tourism and recreation.

The large village of Buchak was almost entirely eliminated when construction work began, and local residents were forced to move. After Ukraine became independent, construction was stopped following protests by members of the public and environmental experts, and also due to the government’s decision that this number of nuclear power plants was not feasible.

However, in the mid-2000s, the government found reasons to resume construction, referring to the new energy strategy that foresaw an increase in electricity production. The project was commissioned by PJSC Ukrhidroenerho, the company managing the country’s hydroelectric facilities. The new project provided for a decrease in capacity. However, project development was accompanied by multiple violations of the law. The commissioner concealed the environmental impact assessment for the PSP from the public. There were also violations in relation to the state environmental expert review, as neither the public nor the local authorities took part.

In response, several CSOs conducted an independent safety study for the energy facility. The outcome document listed the key risks and threats stemming from the construction of the PSP, including:

- the unsuitable soil and the risk of a technogenic disaster resulting from the destruction of hydro facilities;
- flooding and a deterioration in the quality of drinking water;
the secondary radioactive and organic contamination of the Kaniv and Kremenchuk reservoirs due to the dissolving of mud that had absorbed sediments after the Chernobyl nuclear disaster, and, consequently, a threat to the population along the Dnieper River;

- increased turbidity leading to a drastic change in the entire ecosystem, with unpredictable consequences;

- the erosion of the banks and islands of the Kaniv reservoir that form a part of the Kaniv Reserve; and

- the destruction of nearly 20 unique archaeological sites in the construction area.

In addition, energy experts regard PSPs as an out-dated and ineffective technology for load levelling in electricity grids.

During community hearings in villages in the construction zone, the representatives of the commissioning company did not provide villagers with the above information, but instead convinced them that there were no threats. Locals and representatives of the local administrations were also promised that the budget would include large sums for the social and economic development of the district, including repairs to roads, schools and hospitals, and the installation of gas pipes. This turned out to be a lie, as the money had not yet been included in the budget. However, the population was misled by this positive information and supported the idea of the construction.

In the meantime, the government indicated that such wide-scale construction was to be funded by investors. Having found out about the risks, potential investors refused to invest in a dangerous facility, unlike the EBRD, which invested in 2008. In 2015, the project was officially submitted to the European Investment Bank (EIB) and the World Bank with a request for loans with state guarantees of nearly EUR 400 and 500 million respectively. At this point, the preliminary assessment by the EIB estimates the total cost of constructing the Kaniv PSP at EUR 1.2 billion.

Funds have not yet been allocated, as the EIB is in the process of assessing the project. Ukrhidroenerho has to prove to the EIB experts that the environmental impact assessment for the Kaniv PSP project meets both the EIB’s standards and European requirements.

In addition, the developer is planning the construction on a territory designated as a protected historical and cultural site, which also contains areas belonging to the nature reserve fund. There are also people living in the area, as the village of Buchak continues to exist. However, the company is already running an advertising campaign in the construction area putting active pressure on the local population and authorities and convincing them that there are funds and that the construction is necessary and safe and will contribute to the development of the region. Due to lack of awareness, stereotypes about the positive impacts of large industrial facilities, and a lack of the fundamentals of environmental thinking, the local population is highly supportive of the construction.

Conflicts of interest

Local community vs. local community

This is the most surprising conflict: most members of the local population not only did not realise the danger of the PSP, but also did not want to process the information, which they consider false. During the public hearings in the villages, the locals did not give environmental activists an opportunity to present their arguments, accusing them of a bias in favour of someone’s private interests.
Local community vs. public activists
Members of the local population often have a negative perception of environmental protection activi-
ties in general, seeing them as a threat to their interests. In particular, the villagers think that because
of protection regimes they will lose access to the forests and will not be able to collect firewood, harvest
mushrooms and berries, or hunt. The idea of creating a national nature park therefore finds no support
among them.

Local authorities vs. public activists
Local authorities support the state developer’s interests in many ways, which means both elements of
corruption and also administrative pressure. The local authorities therefore have no interest in support-
ing the initiatives of environmental activists aimed at disseminating objective data about the PSP con-
struction. The authorities also ignore demands for broad public hearings.

State developer vs. public activists
The Ministry of Energy and Ukrhidroenerho are the initiators of the construction. A number of officials,
including successive prime ministers and presidents at different times, have therefore supported the
construction at the level of political statements. At the same time, the construction and operations of
the PSP are a lengthy, costly and environmentally hazardous project. The statements made by officials
contain no requirements about compliance with the law during the construction of technological facili-
ties, or about the preservation of the natural reserve fund and historical sites. As a result, the demands
of CSOs regarding compliance with the legislation, assessments of the construction risks, as well as ad-
herence to the Aarhus Convention, are ignored at the executive level. In fact, there have been many in-
stances of concealing information, providing formal responses to requests, and avoiding open dialogue.

Local authorities vs. local community
This conflict is at the very least obvious. In theory, the position of the district and oblast administrations
is identical to that of the majority of the local population. The authorities support the construction due
to the prospects of economic development in the region (this is less applicable to representative bodies
that have members with an opposing stance). However, in reality the local authorities should be the
first to warn populations about the hazards of PSP construction and should demand that the developer
act strictly to uphold the public’s interests. However, the local authorities are putting their fellow
citizens in danger.

State interest vs. state developer, local authorities
This is the principal conflict. The introduction of energy efficiency solutions in the economy; strict com-
pliance with the law, not just environmental regulations; the development of the energy sector without
technological risks; support to the development of local communities based on sustainable develop-
ment principles; the preservation of the nature reserve fund and historical and cultural sites; the devel-
opment of the recreational potential of the regions on the basis of such sites; and support for small
businesses in the tourism sector — all these are instruments of the state interest. However, the initia-
tive of officials at all levels to build an out-dated and dangerous PSP is a step in the opposite direction.
This leads to the principal regional conflict — namely, the choice between preservation, development
and the effective use of vast tourism and recreational resources; or an increase in industrial and energy
potential through the exploitation of natural resources.
Positions of the different stakeholders

**Local authorities**
At district and oblast level, the authorities are interested in the construction of the PSP due to their expectations of receiving additional budget funding from the developer, since construction requires broad investments in the region and results in the development of economic and social infrastructure and a reduction in unemployment. However, in this context it is important to consider existing corruption in the implementation of a project budget, whereby some people will hope for personal gain. Instead, local authorities should be concerned with the significant environmental risks related to the construction and operation of the PSP, as well as the loss of tourism and recreation potential in the region due to the expanded network of massive energy industrial facilities. However, these issues are mainly interesting to individual officials and members of local councils that constitute a majority.

**The developer**
The developer has a clear aim to receive significant investments guaranteed by the state and become their sole administrator with no transparent system of responsibility for expenditures. Practice shows that the estimated cost of these facilities increases in the process of construction, and that part of the sum is purloined. In the meantime, the debt burden on the state and taxpayers increases. As a result, these projects have a powerful lobby at both national and local level. However, the developer is ready to adhere to EU requirements, since the procedure for receiving the investments includes strict compliance with such requirements. At the same time, in view of negative responses from potential investors due to the discrepancy between the Kaniv PSP project and European standards, Ukrhidroenerho understands that increased public attention to the risks of project implementation can also deter investors. The developer is therefore not interested in public hearings. Instead, the company is expediting the start of construction work, in particular so as not to lose the huge plot of land allocated by the state for the project (even if funding is denied).

**Local community**
The construction site includes the territory of several village councils, and the district centre will be affected by the construction. Due to the shortage of jobs in the villages, and the low salary levels, this is a so-called depressed region with no prospects for development. Young people go to work in the big cities, or leave permanently, thus elderly residents make up the majority of the population. They typically have paternalistic expectations of the state, which is not able to offer anything. The prospect of the construction of the PSP provides a glimmer of hope in terms of new jobs and improved living standards. They do not realise that a complex engineering feat such as the construction of the PSP will require the involvement of highly qualified external technicians rather than cheap labour force from nearby villages. Unfortunately, they are unaware of other ways of escaping the poverty of their existence, including private initiatives, small businesses or green tourism. As a result, the local community has divided into three groups in terms of their stance with respect to the PSP:

- **Supporters of the construction, who preach the “here and now” principle.** This group also includes citizens who own plots of land and who hope to get a good deal when selling them.
Those opposing the construction, including intellectuals, small and medium-sized businesses, as well as a few villagers from Buchak, which is due for demolition. They see only the risks related to the construction of the PSP.

An inactive group of people who do not care about their own or the region’s future, and who consider that everything has to happen as the government says.

Environmentalists, public activists

Although its membership is small, there is a movement against the construction of the PSP. These activists argue that it is not acceptable to allocate land that has a unique natural, historical and cultural landscape, and that has significance for the development of the Ukrainian ethnos and statehood. However, only one environmental organisation in the capital has expressed this view of the situation. The organisation does not have enough partner support in this regard, thus its efforts are sufficient only for public oversight of project development at the level of expert assessments and the preparation of documents for the EIB by the developer. There is a lack of capacity and funding for an active public information campaign. Moreover, it is impossible to count on support from the local population.

Possible solution

The situation is a casebook example of violations of fundamental environmental laws. The state authorities at all levels have neglected the right to a safe environment by exploiting lack of awareness. The deliberate destruction of historical and cultural heritage of national significance by the same authorities should also be noted. An obvious remedy is a broad information and advocacy campaign conducted by a coalition of strong and well-funded CSOs. Its aim would be to raise awareness of the issue among the media, human rights organisations, opinion leaders and the public both in Ukraine and abroad, in order to force the authorities to take a decision on the construction of the Kaniv PSP that takes into account the public interest and adheres to the principles of sustainable development and the requirements set out in European legislation.

The key campaign messages should include:

- The presentation of alternatives to the costly and ineffective levelling method represented by the use of the PSP — namely, introducing “night” tariffs for electricity and systematically installing special electricity meters that lead to a reduction in peak load in the grid; popularising energy-saving devices and technologies; and introducing the active use of renewable energy sources (solar and wind power) in rural households.

- The revocation of the decision on PSP construction. Instead, it is necessary to include the territory designated for construction to the project for a national protected area (NPA). This would allow for the comprehensive preservation of a diverse network of natural as well as historical and cultural sites as a basis for promoting tourism and recreation potential.

- The involvement of stable state investments in the region through the NPA. This would guarantee the creation of many jobs for the protection of the site and in relation to tourism services.

- Instead of a large monopoly in the energy business, the direction of regional development towards investments in small and medium-sized businesses based on recreational resources and sustainable development principles. This approach would secure the preservation of natural and cultural sites and local traditions, and would serve as a prerequisite for regional development.