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EBRD project briefing

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Environmental standards in hydro power projects in Georgia

For more information

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In recent years Georgia's government has sought to position the country as a future regional renewable energy hub. Governmental plans include the construction of transmission lines and numerous hydropower plants (HPP), in order to ensure electricity exports to Turkey and subsequently to gain access to the south-east European market by 2015-2017.

The number and technical design of HPPs being planned do not comply with the principles of sustainable development, and they are bound to have serious negative impacts on the environment. They would drastically change the social and demographic situation in Georgia's mountainous regions, while also destroying cultural heritage.The government's plans were given a boost by the construction of the Black Sea Energy Transmission line, supported by the EBRD, EIB and KFW. Some positive impacts of the transmission project (stabilization of the grid, addressing the issue of excess water during summer[1]) are being cancelled out by the plans to build 25 HPPs of different capacities, including a number of medium and small derivation type HPPs. So far the EBRD has been involved only in financing the Paravani HPP project, however the practice that appeared to be established by the bank within the project has been replicated in all planned HPPs. Unfortunately, as the standards were not set clearly, this 'demonstration effect' has served to demonstrate standards that would have significant negative impacts on the environment and people.

The Paravani HPP project and the poor application of a rule-of-thumb method

In June 2011, the EBRD approved the Paravani HPP project[2] , which, according to the ESIA, involves diverting up to 90 percent of the annual average flow (AAF) of the Paravani river to the Mtkvari river. The EBRD has pointed out that most of the time more water will be left, stating that:

> *"As described on pg. 9 of the Non-Technical Summary (NTS), the minimum (sanitary) flow released will represent at least 10 percent of annual average flow in the Paravani River at the weir location (calculated as 16.5 m3/sec).*

1 Georgia's energy sector is dominated by hydro power; excess capacity in summer time would allow for some exports.
2 An 87 MW derivative HPP.

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"Thus the guaranteed release will be 1.65 m3/sec at all times. In the wet spring and summer months, considerably more water will be released. Detailed monthly flow data is available in the ESIA. It is important to note that, due to the flow characteristics of the Paravani River, the planned releases represent 15 – 25 % of natural flow ***for around 80 percent of the year.****"*

15–25 percent is in any case a massive drop in the water level, but it is important to note that even this is not guaranteed for the whole year and that at certain times only 10 percent of the water will be left in the river. This is even more serious considering that even the hydrological data is outdated (1937–1986),[3] and the real amount of water is likely to be less given the increasingly frequent dry spells in recent years. If there is competition between securing enough water for power generation and ensuring sufficient residual flow, the Georgian authorities are not likely to be able or willing to enforce any minimum residual flow.

According to the EBRD, *"the flow method actually applied (Tennant Method) is one of the most widely accepted globally, having been adopted by 25+ countries including the USA (in 16 States), Canada, Australia, Italy, and Turkey"*[4]. However it is notable that according to Tennant method the minimum level of residual water flow chosen in the project (10%) is 'fair or degrading' for fish species in the river, which is likely to be insufficient to guarantee the maintenance of the biodiversity of the river.
In addition to the question of whether the Tennant method has been correctly applied here, it should not be accepted as the final word on residual water flows. According to various scientific communities, the Tennant method is a simple "rule–of–thumb" method setting the correlation between minimum water discharge and fish habitats, wildlife and recreation, thus it is highly recommended that the *"Tennant method be used only for initial planning flow recommendations without serious validation within the region of use."*[5] Therefore, it is clear that using the Tennant method as the main tool for determining minimal stream flow in the Paravani River is insufficient to prevent drastic negative impacts on the ecosystem.

10 percent residual flow as the "EBRD's Standard" in other HPP projects

The majority of planned HPP projects in Georgia are of the derivation type and the determination of the residual water flow in these projects is the key issue for the downstream river ecosystem. After the 10 percent residual flow was published in the ESIA in the EBRD–financed Paravani project, it became widely considered as best practice in all other derivative HPPs (including small HPPs) in Georgia (Dariali, Nenskra, Bakhvi etc.). If these projects are implemented they will destroy the ecosystems of the rivers in Georgia and in some cases will also create problems with access to water for communities downstream.

According to the Environmental and Social Policy of the EBRD[6], *"in planning and implementing impact assessments where biodiversity issues are a key focus, clients should refer to best–practice guidelines on integrating biodiversity into impact assessment"*.

The most fundamental piece of water legislation today, aiming to preserve and restore the biodiversity and functioning of all surface freshwater bodies, the Water Framework Directive (European Commission, 2000)[7], is not even mentioned in the environmental and social impact assessment (ESIA) for the Paravani HPP. Nor does the ESIA for the Paravani HPP refer to any guidelines of the Convention on Biological Diversity. In 2001 the Convention's Subsidiary Body on Scientific, Technical and Technological Advice recommended that environmental flow assessments

3 Environmental and Social Impact Assessment report of the Paravani HPP project;

4 Response letter of the EBRD

5 Evaluation study of Tenant method for higher gradient streams in the national forest system lands in the western U.S. 6.1 Recommendations; page 88; See: http://warnercnr.colostate.edu/~srf/students/thesis/CSU_FRWS_MS_thesis_S2006–Jennifer_Mann.pdf

6 http://www.ebrd.com/downloads/research/policies/2008policy.pdf

7 http://eur–lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2000:327:0001:0072:EN:PDF

should be conducted for dams to ensure downstream releases for maintaining ecosystem integrity and community livelihoods[8]. Thus the failure to do this for Paravani and other HPPs contradicts the convention as well as the environmental and social policy of the EBRD itself.

Since the EBRD financing of the Paravani HPP, almost all EIAs developed for HPPs in Georgia, including Dariali, Nenskra, Bakhvi, Lukhuni etc. claim that they have been prepared in line with EBRD requirements and using the Tennant method as international best standard, but what they actually mean is 10 percent residual flow. The EBRD should now accept its responsibility for spreading the so–called "EBRD standard" in all other derivative HPP projects in Georgia.

Recommendations

The Bank's failure to clearly insist on good international practice[9] in case of the Paravani Hydro, as well as a number of other projects (like Tbilisi railway), leads to a widespread perception that the EBRD's standards result in drastic negative environmental and social consequences, but also encourages irresponsible project sponsors to replicate those supposed standards in their own project documentation and promote them as "in compliance with EBRD policies".

In order to avoid the aforementioned problems it is necessary, before financing any more hydropower projects, to disclose and publicly consult (also with the international community) the environmental sustainability criteria that the bank intends to insist on. The bank also needs to analyse the compliance of the proposed standards with Good International Practice, to ensure the implementation of its environmental and social policy.

8 International Rivers: "Protecting Rivers and Rights", The World Commission on Dams Recommendations in Action; Page 15; July, 2010;

9 Environmental and Social Policy of the EBRD, "EBRD's commitment"(3)