Svarychiv small hydropower plant project non-technical summary

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1 Introduction

This document provides a non-technical overview of the proposed development plans of private company Hydropower LLC to construct a small hydropower plant on Chechva River in Ivano-Frankivsk Oblast of Ukraine.

It also presents a summary of potential environmental and social impacts and other environmental and social issues associated with the project activities. Appropriate measures to mitigate key adverse environmental and social effects that may arise during project construction and operation are provided in *Table 1* at the end of this document.

The project developer Hydropower LLC has approached the European Bank for Reconstruction and Development (EBRD) for financing this development. The project is thus subject to EBRD's 2014 Environmental and Social Policy and has been determined as a Category B project.

This Non-Technical Summary (NTS) document and other project materials will be placed in the locations shown below for public disclosure. Environmental and social documents will be available for review and comments during normal business hours at the following locations:

- Hydropower LLC company
  Registered address: 78735, Goloshyno village, Verkhovynskiy District, Ivano-Frankivska Oblast
  Postal address: 01054, Gogolivska 14 Str., office 5, Kyiv
  Phone: +38 044 359 0334
  Phone: +38 067 657 5302
  Web-site: www.hydropowerllc.com.ua

- Svarychiv Village Council
  Address: 77665, Dovga 134 Str., Svarychiv, Rozhnyativ District, Ivano-Frankivsk Oblast
  Phone: +380 3474 2 09 40

For further information on this project, or to provide comments on the project or the environmental and social documentation, please contact:

Name	**Contact information**
Anton Senyuk, Project Director	Company: Hydropower LLC Address: 78735, Goloshyno, Verkhovynskiy District, Ivano-Frankivska Oblast Phone: +38 044 359 0334 E-mail: smallhp@ukr.net, info@hydropowerllc.com.ua

2 Description of the Proposed Development

The project will construct a small hydropower plant on Chechva River with total installed capacity of 990 kilowatt. The expected annual electricity generation of the project will be approximately 4.9 Million kilowatt-hours, which will be sold to the grid at the "green tariff".

The project will be located near Svarychiv village of Rozhnyativ District in Ivano-Frankivsk Oblast in the western part of Ukraine. Svarychiv has a population of approximately 5,000 people. *Figure 1.1* further below shows the location of the project site.

The hydropower plant will consist of a water intake, water diversion pipeline ('penstock'), and a power house. The water intake will collect water from the existing reservoir formed by the existing upper dam of Chechvynske water reservoir, while the powerhouse will be located downstream the existing lower dam of the reservoir. Thus, the proposed scheme will simply turbine water that is presently being spilled by the existing dam. The penstock will connect the water intake with the power plant by means of an underground pipeline, thus creating a water head. All these project facilities will occupy 0.87 hectares of land, which will be leased from Svarychiv village council or Carpatnaftokhim (which operated the reservoir).

A 52km-long River Chechva is a tributary of Limnytsa, which in turn is a part of Dnister river basin. Construction of a new dam on the river is not envisaged under this project, as the existing Chechvynske water reservoir will be used. It was built in 1960s for the purposes of accumulation and supply of water to Carpatnaftokhim, a large chemical enterprise located in Kalush.

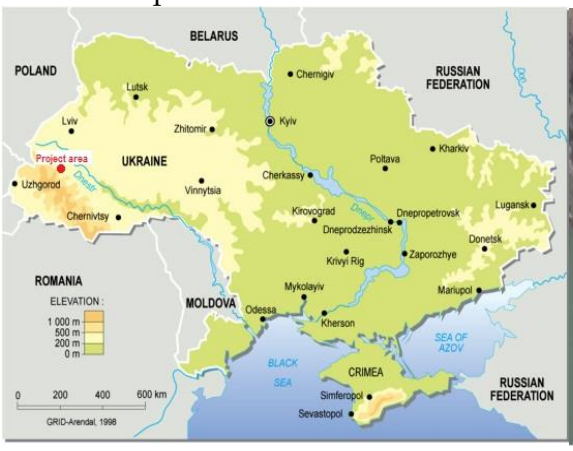
A new access road to approach the power house will be less than 100m long. The plant will be connected to the grid of Prykarpattyaoblenergo at approximately 300 meters from the site; therefore the 10 kV transmission line will also be short.

By using the renewable hydropower, the project will have environmental benefits over other types of energy generation, such as those utilising fossils fuels (gas, coal) or nuclear. It will contribute to the reduction of emissions of greenhouse gases, as well as create new jobs and improve security of energy supply in the area. Furthermore, the project will provide financial contributions to the local budgets in the form of taxes and other payments.

The project developer Hydropower Limited Liability Company is based in the village of Goloshyna, Verkhovyna District, Ivano-Frankivsk Region of Ukraine. The Company was established in 2010 for construction and operation of small hydropower plants.

Figure 1.1: Location of the project site

General map view



Close-in image

3 Environmental, Health, Safety and Social Review

3.1 Project studies and documents

Several documents collectively make up the environmental and social documentation for the project. In addition to this Non-Technical Summary, the other materials include the following documents.
Local Environmental Impact Assessment (EIA/OVNS)

An Environmental Impact Assessment (OVNS in Ukrainian) of the project has been prepared by appropriately licensed Kyiv-based Hydroenergetica LLC in 2015. The project has received positive conclusion of comprehensive state expertise (Ukrderzhbudekspertyza), which includes ecological considerations, on 17 Aug 2015.

As the project is implemented at a developed site ('brownfield site'), with already present water reservoir, hydraulic structures, and changed environment, no other specialized environmental studies in addition to the OVNS was deemed necessary.

Environmental and Social Action Plan (ESAP)

As part of the environmental and social due diligence evaluation, a review of environmental, health, safety and social management issues was conducted. From the overall review, an Environmental and Social Action Plan (ESAP) has been developed. This document identifies mitigation measures to avoid, reduce or control potential adverse impacts of the project on the environment and the people. Key mitigation measures proposed in the ESAP are summarised in *Table 1* at the end of this document.

Stakeholder Engagement Plan (SEP)

The Stakeholder Engagement Plant (SEP) has been developed to describe how Hydropower LLC will communicate with people and institutions who may be affected by, or interested in the project, at various stages of project preparation and implementation.

The developer will assign a social liaison officer, who will be responsible for keeping open dialogue with stakeholder groups and local residents. At any time before and during construction and operation, any stakeholder will be able to raise concerns, provide comments and feedback about the project. All such comments and grievances from people will be accepted, processed and answered by the developer in a timely manner.

3.2 Sensitive locations

The project area is considered to have medium environmental sensitivity due to its proximity to the Carpathian Mountains, but absence of protected areas or species in the immediate vicinity. There are no known sites of cultural heritage or archeological significance on the land allocated to the project or nearby. The nearest residential houses are located at 167 meters from the site boundary, which is far enough to ensure that noise and vibration levels from the generators can be managed within the sanitary norms.

3.3 Project impacts and their mitigation

An evaluation of potential environmental and social impacts determined that, in addition to its benefits, the project could have potential negative impacts on the environment and people, if not

managed carefully. Therefore, the project developer will be required to implement certain actions (called 'mitigation measures') to prevent, reduce, or mitigate negative impacts of this project. A summary of key impacts and mitigation measures that have been identified is provided in *Table 1* below.

Table 1 Overview of Key Potential Project Impacts and Their Mitigation

No	Issue	Potential impact	Mitigation measures
1	General construction activities	Impacts during construction of the main (water intake, diversion pipeline, powerhouse) and associated (access road, transmission line) project facilities, such as land excavation, dust, noise, air emissions from vehicles involved, increased road traffic, etc.	- Prepare and implement construction management plan to reduce and mitigate general construction impacts, including noise, air emissions, waste generation and disposal, increased road traffic; - Continuously monitor impacts to comply with appropriate national environmental standards and EBRD requirements; - Apply requirements to all construction contractors.
2	Water quality	Impacts on water quality	- Implement erosion, sediment and water quality control measures for all areas where the ground and riverbed will be disturbed as a result of the construction of the derivation channel and the powerhouse, and their operation; - Land reinstatement, reinforcement of steep surfaces, topsoil remediation, and reseeding for the areas disturbed during construction.
3	Fauna and flora	Impacts on fish and flora	- Install appropriate and effective repellent system to prevent fish ingress into the water intake at Chechvynske reservoir to avoid the mortality of the existing fish population; - Replant in the vicinity of the Project area the same number of trees as those planned to be cut along the diversion pipeline route.
4	Noise	Noise and vibration from power house operation	Reduce and mitigate the noise and vibration by: - Selecting appropriate modern technology turbines and other equipment; - Correctly installing and regularly maintaining the equipment; - Monitoring of noise levels onsite, and at the boundary of the nearest residential properties located at 167m from the site to stay within the regulatory norm of 45 dB in residential area between 8pm and 8am.