

Consultancy Services - Implementation of the Energy Efficiency Credit line in Croatia (EEFF 2007)

Financed by

**European Community
and the
European Investment Bank**



Responsible Bank



Document title

ENGLISH SUMMARY OF THE NON-TECHNICAL SUMMARY OF THE ENVIRONMENTAL IMPACT ASSESSMENT (NTS) PREPARED BY ELEKTROPROJEKT D.D.

Ilovac SHPP

23/10/2013



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EN ISO 9001

1. SUMMARY

Ilovac SHPP is a typical run-of-the-river hydro power plant scheme with installed power of 1,4 MW and design discharge of 59 m³/s. The plant is planned to be built on Kupa river in a relative narrow valley. The SHPP is located a bit upstream of the settlement Ilovac, near the city of Ozalj in Karlovačka County. The planned location is settled near County road No. 3098 and the railway Kamanje – Karlovac. The plant will not have a significant influence on the flood situation due to possibility of regulation with an inflatable rubber dam.

The planned location is within the continental part of Croatia with rich vegetation specific for the continental part. The area of Kupa river is home to numerous species, both flora and fauna. The planned SHPP is located within a NATURA 2000 zone, HR2000642 which represents the area of Kupa river habitat and near river areas containing specific flora. The ecological zone was included in NATURA 2000 due to numerous animal species which pass through or have permanent habitat in the zone.

The start of construction, as well as plant operation will have minor influence on the space purpose and space usage.

During construction works of the intake, the impact on river flow will manifest only shortly and locally as a consequence of the development of the construction works or as a consequence of unpredictable events (natural disasters or accidents). During exploitation, there will be no impacts on the river flow. The power plant gives an opportunity to control the upstream flow.

Temporary negative impacts on air quality are possible due to use of mobile machinery in a narrow limited space on the works location and due to disposal, i.e. transport of the excavated and unused materials. During exploitation, there will be no negative impacts on air quality.

In the area of the SHPP Ilovac location a permanent loss of soil will occur due to preparation of the location for construction works. This is related to an area of 0,3 ha on the location which is completely in the ownership of the investor. A layer of 25 cm of soil will be removed prior to construction works and will be used for landscaping on the location after the construction works. The impact is unfavourable due to conversion of the areas but according to significance (small area of 0,3 ha) the impact will be small. During exploitation, there will be no negative impacts on soil quality.

Possible impacts on flora and fauna during construction of the SHPP are short-term and local, except on the area of the buildings where the loss of habitat for some species will occur due to removing vegetation and works. This impact is permanent. The influence on the wildlife will depend on whether the works are performed during the reproductive period of each wildlife group. Other impacts are related to species disturbance. All these influences are unfavourable, but in significance quite small. During exploitation, there will be no negative impacts on flora and fauna.

The biggest influence during the construction of the plant will be permanent (continuous) loss of 0,3ha of land on the location of the construction works on the right bank of Kupa river. The area is not used for agricultural production so the impact on agriculture is non-existing. During construction works, a short-term and local influence on very few

nearby agricultural lots is expected due to dust and particles. These influences are unfavourable but in significance quite small.

Since the chosen location is not a forest area, construction works can cause a short-term and local influence on the forests in close vicinity.

During construction there will be no significant impact on objects apart from the old mill building which will be removed. Short-term and localized impacts on the traffic are expected due to construction of access paths and material disposal. The impacts are small in significance.

The construction works will have no impact on the nearby Ilovac settlement since the distance is around 400 m and the construction site is located below the level of the settlement so there will be no noise disturbance in the settlement. The impacts on population are temporary and localized.

During exploitation no impacts are expected on climate conditions, hunting, objects and infrastructure, landscape and protected cultural and historical natural values. Migration of fish species during normal life cycles and reproductive life cycles is ensured with a fish pass whose construction meets the requirements of the Environmental licence related to flow conditions (flow around 0,2 m³/s). The main migratory fish species on the location, according to the investigations, is *Chondrostoma masus* and the fish pass must fulfil the requirement of allowing the species upstream or downstream migration during their reproductive cycles. Other present species (around 17 different wildlife species) don't have a strong migratory urge and therefore are not affected by the SHPP. The chosen turbine type allows fish passing through the turbine; fish friendliness was proven in several tests. All presented facts indicate that SHPP Ilovac will have a very small impact on river fauna. Nonetheless, monitoring of the fish population and species should be done. Exploitation of SHPP Ilovac will have a positive impact on energy situation since it will be able to provide more than 6 GWh of electricity annually.

The planned SHPP is in accordance with international obligations of Republic of Croatia related to reduction of cross-border environmental impact.

In general, the planned SHPP can be assessed as a project with very low to low environmental impact. Taking into account the long-term benefits, the project can be assessed as favourable for local community.

The investor will be obliged to perform environmental protection activities according to the Environmental Licence. The unfavourable influences should be eliminated or reduced as much as possible. Environmental protection measures are envisaged before and during construction, operation and in case of an ecological accident.

The investor will be obliged also to perform environment monitoring as well as plant monitoring in order to prevent any harmful influences on the environment.

Since the planned SHPP is located within the NATURA 2000 zone, an environmental investigation was performed in 2009. The SHPP will not have any special influence on the ecological network because the planned SHPP does not occupy wildlife habitats outside Kupa river apart from the 0,3ha of land on the right river bank.

The construction works should be planned and adapted to wildlife reproductive cycles with special care on water levels oscillations during fish reproductive cycles. River habitats should be preserved. Water quality levels should be kept at ecologically acceptable

levels defined by legal framework. Fish population should be monitored as well as population of other sensitive flora and fauna species.

The general conclusion is that the SHPP will not have a significant influence on animal habitats in comparison to the current situation. Since the dam is rather low, the chosen type of fish pass is suitable and the turbines are proven to be fish friendly. Thus the SHPP is expected not to have significant influence on the fish species in comparison to the current situation.