RUN OF RIVER HYDROELECTRIC POWER

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INTRODUCTION

Run Of River, ROR hydro electric power is generated by the natural flow of water. In contrast to traditional hydroelectric facilities, which flood large areas of land, run of river projects do not require large capacities of dammed water. In this case, water is diverted from a river, or held for short periods of time, and sent through turbines that in turn generate electricity. The water leaves the generating station and is returned to the river without significantly altering the existing flow or water level.

RUN OF RIVER OPTIONS

There exist two different run of river structures, high head and low head. High head facilities use gravity in mountainous regions like the Rocky Mountains. Low head facilities use river flow backed up behind a small dam that generally stores 1-2 days of water, and are smaller in size with a reduced environmental footprint compared with traditional hydroelectric facilities that use large storage reservoirs.

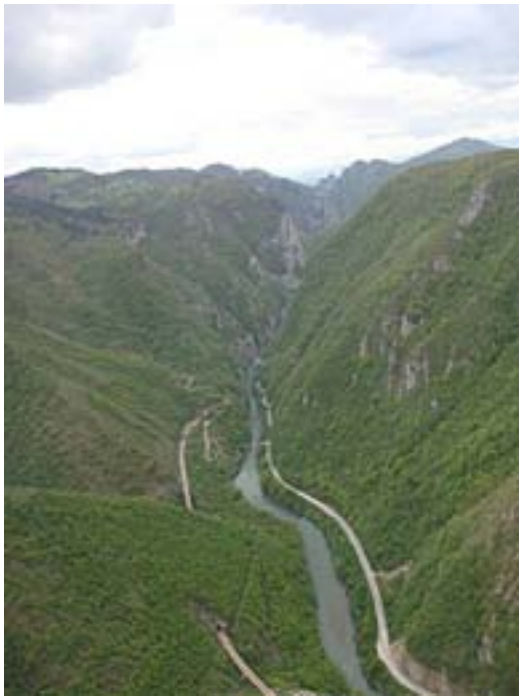

Figure 1. Brodarevo run of river project site, Serbia.

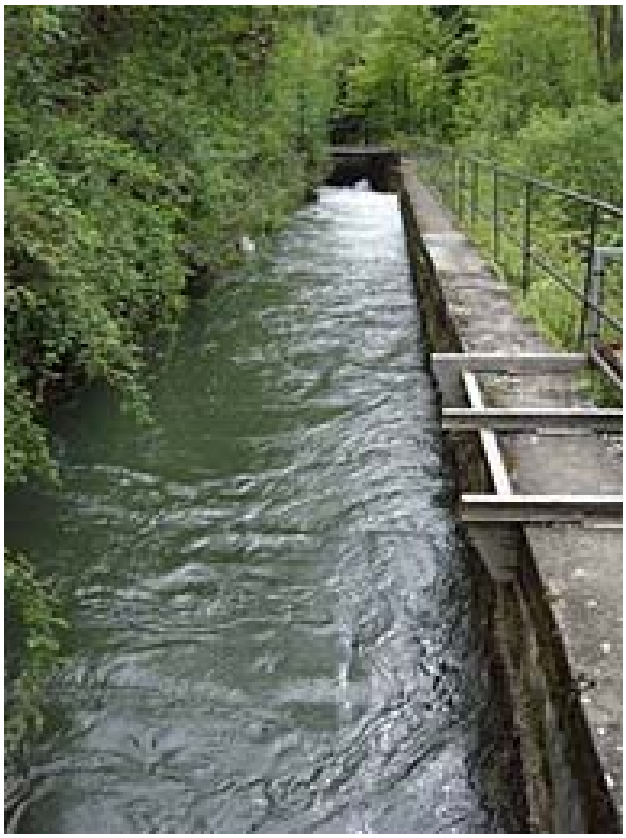

Figure 2. Small dam for run of river hydroelectric power generation.

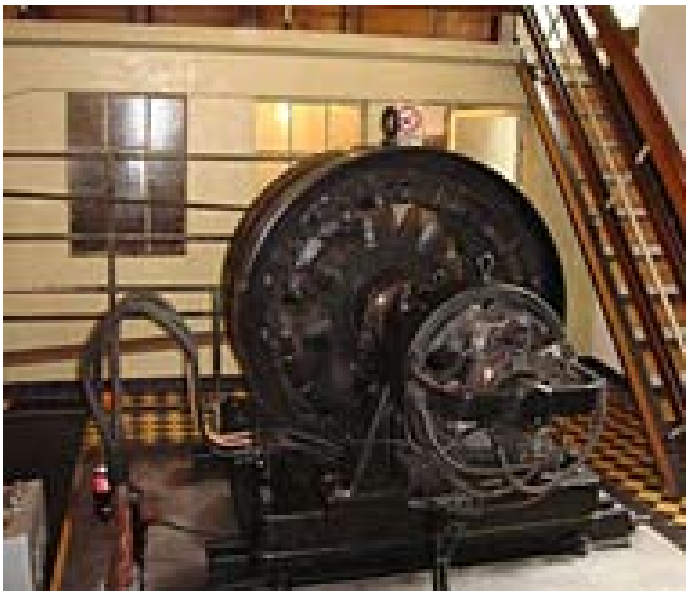

Figure 3. Small water turbine used in run of river hydroelectric power.

Figure 4. Electrical generators in run of river hydroelectric power.

ENVIRONMENTAL IMPACTS

Run of river electricity is considered as a renewable energy resource, with no carbon dioxide, pollutants or waste emissions.

It causes minimal disruption to the surrounding environments and habitats, as the water flow remains unchanged.

It results in a small environmental footprint with low visual impact.

SOCIO-ECONOMIC FACTORS

Run of river hydroelectric power fosters economic growth in developing countries resulting in long term stable job opportunities for the surrounding communities.

It is a secure and available energy source that is immune to market prices of fuel imports.

COST AND RELIABILITY

No dependency on a fuel source exists. It is associated with a low technology risk, in that the dam and turbine plant structures are based on well established engineering practices.

The cash flow generated by such projects is long-lived providing a reliable energy source.

The operating costs are low, however, the capital costs are high.