

## **EXECUTIVE SUMMARY**

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GENIVAR was selected by the Burritts Rapids Renewable Energy Association (BRREA), a non for profit organization, to determine if the project to build a small hydropower generating station along the Rideau River, more precisely at the site of the existing Burritts Rapids dam, is technically and economically feasible. An initial feasibility study was conducted to assess the existing hydrological and hydraulic conditions at the site, elaborate concepts and establish preliminary energy estimates and costs for the project.

The existing Burritts Rapids Dam is located on the Rideau River, approximately 2 km west of the Burritts Rapids Hamlet, in the southwest corner of the City of Ottawa and at the northern limit of North Greenville Township, Ontario. This dam and associated lock (Lock 17) are actually owned and operated by Parks Canada Agency (PCA). The Hydrometric station 02LA011, operated by WSC, as well as daily flow data obtained from PCA and the Rideau Valley Conservation Authority (RVCA), have provided hydrological data from 1979 to 2012. Hydraulic (water levels) data was also obtained via PCA and RVCA for the same period. This data represents an excellent spectrum of the hydrological and hydraulic conditions that are to be expected at this site.

Using the hydrological and hydraulics characteristics of the site, a technology assessment was performed to select suitable technologies (suppliers) for this project. From the ten firms originally contacted, two were selected to pursue the study. The engineering studies at the Burritts Rapids Dam site indicate that the flow and low head will produce approximately 1.8 to 1.9 GWh of electricity per year using the most appropriate generating technology currently available for this site. As an example, this would be equivalent to the energy required to power 100-150 average sized homes. Conceptual design was done for each layout and construction and project costs were established.

In conclusion, using the data collected for this study and based on the estimated construction and operation costs and the usual commercial terms considered for such hydro projects, it seems the project (Burritts Rapids Community Hydro Project at the Burritts Rapids dam) cannot be considered economically viable under current conditions.

Given that the Burritts Rapids Renewable Energy Association is a not-for-profit community organization, it may have the ability to address the financial challenges by partnering with public sector organizations to find alternative financial and funding options.