

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM



A Project Report On
“ENERGY PARK”

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IN

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ABSTRACT

Load shedding is the present problem faced by us in day to day life. The rural and remote areas have a routine power failure for around 10 hours/day. But there are many a remote areas without the power supply from the government. Our objective is to generate power through a Pico-hydro power plant at Elyara Kanda, Belthangady(tq), Dakshina Kannada(dt), Karnataka.

Pico hydro is a term used for hydro electric power installation that typically produces up to 5kW of electricity. These installations can provide power to a small rural community. There are many of these installations around the world, particularly in developing countries. Pico-hydro systems complement photovoltaic solar energy systems because in many areas, water flow, and thus available hydro power is highest at the winter when solar energy is at minimum. Pico-hydro power is frequently accomplished with a pelton wheel for high head, low water supply. The installation is often just a small dammed pool, at the top of a waterfall, with several hundred feet of pipe leading to small generator housing.

This project aims in constructing a Pico-hydro hydro power plant. Here supply of water is available because of mountain stream year-round. Hence, no need of construction of a dam and reservoir, relying on a minimal flow of water to be. An intake structure is required to screen out floating debris and fish, using a screen or array of bars to keep out large objects.

What are withdrawn from the source must move along a power canal or a pipe (penstock) to the turbine. The water and turbine are far apart, the construction of penstock may be the largest part of the costs of our constructions. This is a mountainous area; hence access to the route of the penstock will provide considerable challenges to us.

At the turbine, a controlling valve is installed to regulate the flow and the speed of the turbine. The turbine converts the flow and pressure of the water to mechanical energy, the water emerging from the turbine returns to the natural water course along a tail race channel.

The turbine turns a generator, which is then connected to electrical loads; this might be directly connected to the community distribution system for several homes.

This project provides uninterrupted power for 24*7, through out the year. This aims to light up two florescent bulbs for each house for 12 houses nearby. Pico-hydro power plant provides power where there is no power supply from government; this is low cost and needed to the people of rural area in our country.