

40 KW Micro Hydro Turbine at Tansa Dam

Background/Objective:

Tansa Dam is a gravity dam on Tansa River in Mumbai. The dam is one of the seven sources of drinking water to the city. Stored water offers an avenue to generate electricity, given that the villages around the dam do face irregular supply, it makes it all the more important to be able to harness this potential. VEMC conducted a site survey and observed that there is a potential for generating power without compromising in the water supply and accordingly suggested MCGM to install a hydro turbine for generating electricity to meet their day to day need.

Approach:

Tansa Dam is one of the key dams to Mumbai, water being supplied through cross country pipelines having potential head can be used to generate electricity that can help the rural areas that do not receive regular power supply from the MSEB. The project was awarded to VEMC by the MCGM. The contract included designing, supplying, installing, testing and commissioning the project.

This hydro turbine project is the first installation by the MCGM. The project designed consists of the following features.

1. Water filtering mechanism
2. Penstock with Valves
3. Turbine
4. Power converting device

VEMC's Role as a solution provider

VEMC's role as a solution provider was to offer a solution that is cost effective and yet efficient system. The offered solution was to include the provision for PAT system (Pump as a turbine system), a M/S Kirloskar Brothers Limited make pump. The system was then tested at the Kirloskar plant for the duty parameters to then be supplied and installed on the existing pipeline. The potential energy stored by means of available head will be used to generate 40KW of energy.

The features of the Micro Hydro system

A Micro hydro system refers to a hydro power systems that has a power output between 10KW and 500KW. The systems are mostly designed to provide power for household and small communities. The systems works particularly well in comparison to other renewable energy technologies is that, if enough water is made available it can be a continuous and sustainable power supply.



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Advantages of the proposed system:

Output up to 100KW

The system can be installed in rural and remote areas

The electrical and mechanical systems are easy and economical to source

The system is easy to install, operate and maintain

The system has no adverse impact on the environment.