

Hydro Powered Pump

Water pumping without fuel, electricity or emissions

What is a hydro-powered pump?

Water that is in motion, for example in rivers, streams or canals, contains energy that can be transformed for other usages. The water wheel pump is a hydro-powered pump. It incorporates a pipe wrapped around a horizontal axle, generating a spiral tube that is fastened to a water wheel. Flowing water causes the wheel to spin, forcing water into the inlet of the tube with each rotation. This results in a pressure required for pushing the water to the outlet. The water is delivered directly to the field, or first into a storage tank, from where it is distributed.

What are the main features?

The hydro powered pump does not need any fuel or electricity, presenting a climate-friendly way of pumping water. In comparison to solar powered pumps, the hydro powered pump can work all through the day. The system installed by WE4F pumps 20 to 40 m³ per day to an elevation of up to 20 m or a distance of 1 km. The performance of the pump depends on the characteristics of the water source, the higher the flow rate, the higher is the amount of pumped water.

What are common uses?

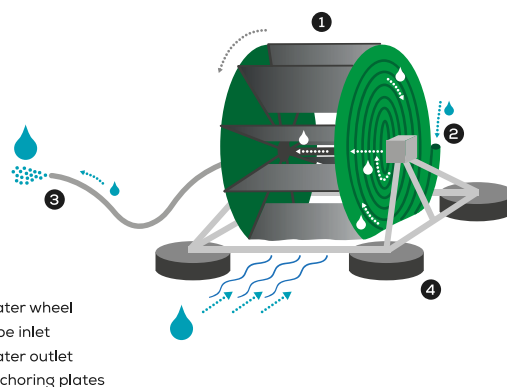
Hydro powered pumps are used for the irrigation of crops. Under irrigation crops can get the ideal amount of water for higher yields and increased income for the farmers. The effects of climate change and unpredictable rainfalls can be mitigated by the hydro powered pump, as long as a water source with sufficient flowrate and volume is accessible.

Market Development

Hydro-powered pumps, such as water wheel pumps or hydraulic ram pumps are based on long-known mechanic principles, but are mostly produced in an artisanal way. Only a few manufacturers provide their their systems for a larger market. The technology is very sturdy and only consists of mechanical components that are easy to maintain, giving it a high potential for users in rural regions with access to streams or rivers.

Project overview

Partner:	Farmer Group
Type:	Agreement on usage, monitoring and evaluation of the system
Focus:	Piloting of alternative climate friendly pumps
Duration:	02.2020-06.2023
Country:	Kenya



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