

The Metals Industry Research and Development Center of the Department of Science and Technology is currently developing a microhydro turbine for power and irrigation use that is seen to help local farmers and communities located away from power grids.

“The dual function of microhydro turbine would make it a very helpful facility,” said Science Secretary Mario Montejo. “It helps increase crop yield by pumping water into the fields and provide power to remote communities.”

The microhydro turbine is a hydraulic system that integrates pump and turbine for pumping water, an action that generates electricity. The pump and turbine share one prime mover powered by water.

With the installed centrifugal pump in the turbine’s water power shaft, part of the power is used by the pump to deliver water at higher elevation for irrigation use. Meanwhile, the remaining power is utilized by converting mechanical energy into electricity, from DC 12 volts to AC 220 volts.

The generated electricity is low-cost and serves as a clean replacement for fuels, such as kerosene and diesel which are often expensive and a source of pollutants.

The MIRDC is currently field testing the prototype turbine to determine its full capacity. The turbine’s centrifugal pump has a capacity of 60 liters/minute. Its turbine is run-off-the-river propeller type, with a 1kw capacity, a 130 liters/second volume flow and 1.5 meters head. An automotive type, the turbine has both AC and DC alternator,. An input of 12 volts and output of 220 volts.

The turbine project of MIRDC helps meet the needs of the Filipino farmers and enables villages located in remote areas to light up their homes and engage in small business. (*Marlyn Ramones, S&T MediaService*)