

# West Hawaii Today

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## County taps its resource to recover energy costs

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Hawaii County Department of Water Supply is using its resource to lower expenses, reclaiming kinetic energy through a hydroelectric generator, tapping the potential of its water that flows from mauka wells to low-elevation users.

The hydroelectric generator harvests this kinetic energy through a turbine, intercepting the gravity-fed flow of mauka water. As the turbine spins, the flowing water releases energy to the shaft of an electric generator, creating power in the system, said Mike Maloney, of SOAR Technologies Inc., who designed and patented the generator.

The energy produced is based upon the amount of water passing through the turbine and the amount of water pressure loss. The higher the water flow and pressure drop, the more energy produced. About 70 percent of the energy is recovered from the water flowing down Hualalai through the supply pipelines, Maloney said.

Starting next week, the unit is expected to consistently generate a maximum of 40 kilowatts of power -- enough electricity to power roughly 50 households daily. It recovers the energy normally lost when filling the water tank, Maloney said.

Earlier this week, Water Supply Manager Milton Pavao said Hawaii Electric Light Co. will pay 22 cents

per kilowatt hour for energy generated; HELCO bills the county 34 cents per kilowatt hour for energy used.

The North Kona water system has the highest metered water consumption of any Water Supply system and ranks second in the number of connections and volume of water production. All water supply customers benefit over the long term as energy costs will be reduced and credited back to Water Supply by HELCO, said Julie Myhre, Water Supply energy management analyst.

Exactly how much savings the hydroelectric unit will bring is yet to be determined. When the system is up and running over a long period of time, officials said Water Supply will have a better idea of energy output.

A blessing was held Friday for this \$500,000 project, which creates a renewable energy source for North Kona.

Officials repeatedly applauded Water Supply for its vision and leadership toward energy independence, as well as sustainability. Along with dedicating the project, the county agency touted its new motto, "Water, Our Most Precious Resource," promising a commitment of stewardship of water sources and resources.

"We would like to thank those that have contributed to making this cooperative energy efficiency project between the federal, state and county governments, consultants, contractors and department personnel a success," said Tom Goya, Water Board chairman. "Together we can make a difference. Together we can map a better future for generations to come."



Mike Maloney, of SOAR-Technologies Inc., explains how the hydro generator at the Kaloko sight works. - Brad Ballesteros | Special To West Hawaii Today