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H.A.P.P.Y., Inc.

# Progress Report

H.A.P.P.Y. Inc. Evaluates Photovoltaic Powered Groundwater Well Pumping System in Southern California.

In preparation of the future 15 Groundwater Recovery / Drinking Water Systems to be installed in the Tembien Village of Ethiopia, H.A.P.P.Y. Inc. evaluates a successful local system.

Orange, CA November 9, 2008: Michael E. Slaby, Director of H.A.P.P.Y., has completed the evaluation of a Southern California based groundwater recovery system that is 100% powered by photovoltaic solar energy. "This facility recovers groundwater from a single well for agriculture irrigation and livestock watering. The owners have made the investment, which has about a 7 year payback, to deliver clean water for their farm and livestock operations. This system is an excellent model for the 15 planned photovoltaic drinking water systems to be installed in Tembien, Ethiopia in the near future" said Slaby.

The solar radiation that is available in Poway is not as plentiful as in Tembien Ethiopia where there are about 320 days a year of clear days and sunshine. "Tembien is an ideal location for photovoltaic energy usage, especially for groundwater recovery. Almost all of their current electrical generation is from hydro electric plants and is undependable and expensive; the use of photovoltaic energy for these drinking water systems will make them 100% independent of the electrical grid for dependable, sustainable drinking water" according to Slaby.

Following are some visuals of the facility:



H.A.P.P.Y. Evaluated local photovoltaic groundwater system



This system contains 90 PV panels, a submerged groundwater well pump system, 3,000 gallon holding tank, plumbing, wiring and automatic controls; very similar in most respects to the 15 systems planned for Tembien Ethiopia.

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“Many of the lessons learned from this installation will assist in the installation of the 15 systems planned for Tembien” said Slaby. In general, the most challenging elements for the installation of these systems in Ethiopia will be the availability to “modern” utilities and materials. “The closest city from Tembien is over 90 miles and has limited resources. With proper planning we will succeed in smooth installation and operation of these systems; we are fortunate to have very dedicated people in Tembien that will ensure that these systems will be well maintained for the future of this community”.

Hands Across The Planet To Poor Youth, Inc. is a non-profit group that focuses on drinking water, sanitation, renewable energy and sustainability projects in Tigray Ethiopia. For further information contact:

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