



Winrock International

Accelerated Commercialization of Photovoltaic Water Pumping Project (AC-PVWP)

Rationale

The majority of Nepalese farmers are dependent on monsoon rains. Available irrigation alternatives are limited to pumps operating on fossil fuel or grid electricity. On one hand rain and electricity are both highly unpredictable in Nepal and on the other the operating cost of the diesel pumps makes it unaffordable except in emergencies. Solar photovoltaic water pumps (PVWP) can be a solution to farmers seeking alternatives to expensive diesel pumps and unreliable electricity.

Solar water pumps in Nepal have been highly subsidized in the past and used mostly for community water supply. Several hundred solar pumps installed to date have been funded either by GoN's subsidy or grants provided by various other development partners. Winrock believes that if a range of high quality solar pumps can be made available, farmers will be able to purchase them from the additional income they earn from having reliable irrigation. The market for PVWP in Nepal is likely in the tens of thousands.

Our Solution

With the support from USAID, Winrock International (WI) is implementing the "Accelerated Commercialization Solar Photovoltaic Water Pumping" (AC-PVWP) project in Nepal. This project is designed to support the USAID-funded KISAN project, and to expand commercialization and adoption of PVWP systems for irrigation, livestock watering, and community water supply in the rest of the country. The AC-PVWP project

will build private sector markets for sale of PV water pumping systems to agricultural producers, while also assisting key USAID development programs such as KISAN to make the technology available to their farmers. These market and supply chain development activities will ensure that high quality PVWP systems are readily available at reasonable cost for use in agriculture and community water supply.

Project Objective

- Support USAID Development Programs.
- Grow Markets: *Assist solar energy and pumping system vendors to expand the PVWP market.*
- Validate Market Demand and Solutions: *Identify market for PVWP systems and assist vendors in selling in those markets.*
- Assure quality of systems and installation: *Work with qualified PV vendors to establish PVWP technical specifications, product lines, quality assurance tests and protocols*
- Educate farmers on benefits of PVWP: *Improve farmers' understanding of the economic benefits of commercial farming using PVWP based irrigation.*
- Create Financing Access: *Increase availability of financing for PVWP systems from banks and financial institutions (FIs).*
- Support Scale-Up of PVWP System Sales: *Support other International Initiatives for commercialization of bigger scale PVWP system.*



Targets

Create a commercial market for PVWP for irrigation and facilitate installation of 250 PVWP systems.

Project Activities

- Orientation to PV vendors.
- Train and prepare Financing Institutions (FIs) for PVWP financing.
- Identify target areas in KISAN districts and explore other potential sites.
- Develop system specification and Quality assurance procedures.
- Conduct PVWP promotional demonstration and marketing.
- Facilitate 250 PVWP installation and Monitoring and Evaluation (M&E).
- Scale-up strategy and replication.

Working Areas

Primarily, the project will focus on the working districts of KISAN project. The project will support initiatives in other parts of Nepal as partnership opportunities arise.

Roles and Responsibilities

USAID: Financial support.

Winrock International (WI): Winrock International is implementing the project in collaboration with KISAN and other agricultural value-chain pro-

jects, private sector solar companies, and financing institutions.

Knowledge-based Integrated Sustainable Agriculture and Nutrition (KISAN) Project: USAID's KISAN project will identify farmer groups in need of irrigation. KISAN will recommend and sites for solar pump demonstration and strategies large-scale market expansion.

Private Sector/ Companies: System design, installation, repair and maintenance. Companies will develop new financing and lease packages to reduce upfront costs to farmers.

Financing institutions: Banks, micro-finance institutions and cooperatives will provide financing to farmers to purchase pumps.

Project Status & Achievements

- Orientation to PV vendors regarding the project.
- Training to PV vendors companies regarding proper design and installation of PVWP systems.
- Training to RETS and AEPC regarding necessary tests to assure and certify quality of PVWP systems supplied by vendors.
- Orientation to KISAN and field-based staff.
- Educate farmer groups.
- 4 demonstration units installed in Banke, Kapilbastu and Surkhet.
- Supply side study completed.

Winrock International is a nonprofit organization that works with people in the United States and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources.



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