


Technology data sheet : Rental village solar pumping systems

Type of project: (tick off the type)	PV	Solar Thermal	Biomass	to Energy
	✓ (solar pumping system)			
Project name:	Operation of rental village solar pumping systems			
Location of the plant	Lao PDR Ban Sor Village, Sangthong district. Vientiane capital. Lao PDR			
Year of Implementation:	April 2005			
Operator (Name and Address)	Sunlabob's franchisees: Khamsao and Mr. Boualay Keomangkone, under supervision of village committee of Ban Sor Village, Sangthong district. Vientiane capital. Lao PDR			
Planner: (Name and address)	Sunlabob Co. Watnak. Lao-Thai friendship road. Vientiane Lao PDR Tel.: +856-21 313874			
Detailed description of the installation: (technology, function, benefit for users, etc. max 150 words)	<p>Sunlabob has provided community solar pumping systems for rent to it's franchisees. System pumping capacity: 16,000 m³ of water per day, storage tank-14,000 m³. The system is powered by solar panel array of 400 Wp (4x100Wp), connected in 48 V scheme. Lorentz Pump is used in this system. Water is pumped from a river Sang, with pumping head of 35 m to a tank, which is located 3.5 m high above ground of highest hill within the village. Water Distribution network connects water tank with 12 local distributing points (tapes) within the village. In average, each distributing point consists of 9 households</p> <p>In general, water systems is serving day round, for exception in cloudy period, system maybe operated with several beak times so that the system can be able accumulate enough water.</p> <p>Users pay monthly fee of 5,000 LAK (around 0.52 US\$) for water use.</p>			
Generated Energy service: (tick off the energy type)	Electricity	heat	gas	Light
	✓ (48 V DC)			
Power output of installation: (kWel, m ³ biogas, kW th, etc.)	<ul style="list-style-type: none"> PV: 4x100Wp=400 Wp for water pump (48V DC) 			
Financing (tick off the financing type)	Private investment	loan	donation	grant
	✓			
Investment costs in US\$	Total investment: 11,000 US\$			
Maintanance costs in US\$	60-80 US\$]year			
Savings:	<ul style="list-style-type: none"> Times and labour of women in carrying water from the deep river. They would have more times for doing household cares, like: children care; a rest after hard field work; vegetable growing; or handicraft making, etc. Households are more comfortable and have more times to do other income generating activities, such as handicraft, weaving, etc. 			
Energy sale income in US\$:	<p>Average income 400 US\$ per year from water sales (source: sunlabob co.)</p> <p>As Sunlabob staff informed, right now only 1/3 of households use this service. Now people have understood its benefits and more and more people willing to use the community water supply. If all households have been used the community water, income would be tripled. Besides, water charge is subject to change after pilot</p>			

	<p>phase verification. Another point, if demand will be significantly increased, the company would install another system. The company also looks forward to using water for vegetable and animal livestock production, which would have another tariff. Franchisees compensation is about 20% of total income. The franchisees (two of them) are responsible for several rented systems in this cluster of villages: solar home system, water supply system, biogas production (now piloting), rural clinic systems, battery charging station, and they get commissions from all these services</p>
<p>Comments:</p>	<p>Demand now has raised due to both reasons, as growing number of households (110 households in moment of installation and 200 households now) and willingness of people (not all villagers used to use water from the beginning). Sunlabob has planned to install new two units more</p>
<p>Pictures and grafics</p>	
<div style="text-align: center;">  <p>Panel array and water tank (Courtesy by Sunlabob Co.)</p> </div>	



At distributing point
(Courtesy by Sunlabob Co.)