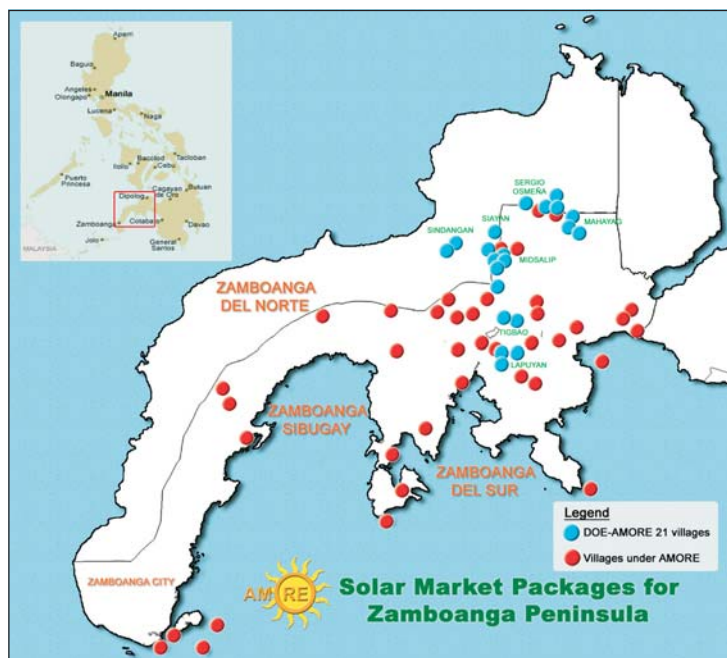


Commercial PV Electrification of Off-grid Barangays in Mindanao

Raising the Stakes

Last July, the Alliance for Mindanao Off-grid Renewable Energy (AMORE) Program was awarded a Php21 million fund by the Government of the Philippines for the purpose of introducing a number of comprehensive and innovative measures aimed at achieving the goal of 100% barangay electrification by 2008 and 90% household electrification by 2017. These measures are market-based approaches to the implementation of electrification projects designed to enhance sustainability and greater private-sector participation and investments.

The Department of Energy (DOE) is the partner agency of AMORE for this project. Under the World Bank and Global Environment Facility (GEF)-supported Rural Power Project, the DOE decided to apply part of its grant to this initiative for the development of sustainable solar market packages in 21 barangays in the Zamboanga Peninsula. In this first round, the project is expected to install a number of community facilities and energize at least 1,000 households in 21 communities contiguously situated in Zamboanga del Norte and Zamboanga del Sur.



In more specific terms, the solar market-based approach invites eligible companies to supply, install and maintain solar PV systems for community facilities. It also offers clusters of villages as potential markets for the commercial selling and installation of a minimum number of solar home systems.

Cutting the Risks

For the solar market-based approach to work in a commercially viable way, the scale of the business operation must be sufficiently large to overcome the higher transaction costs of doing business in distant areas. To reduce the risks and entice companies to serve remote communities, the project utilizes a combination of innovative instruments to achieve the electrification targets:

- Clustering of barangays into commercially viable packages that are bid out on a competitive basis;
- Composition of each SSMP package of a base load from community facilities (e.g., barangay halls, health facilities, schools, public/streetlights);
- Performance-based subsidies and financial incentives to improve affordability and to assist firms to address market barriers.

Availability of Subsidies

An important consideration in achieving actual sales of solar home systems is the affordability of the units to the buying households. Accordingly, the SSMP contractor may tap the subsidies being provided under the RPP, which combines the Global Environment Facility (GEF) and Philippine government subsidies through the DOE. The subsidies are presented below.

Table 1. Subsidies Available for PV Systems

	DOE Subsidy		GEF Subsidy	
Eligibility	Household/end-user, excluding public facilities		Any user, including public facilities	
Subsidy level	20 to 30 Wp	Php 8,000/system	10 to 50 Wp	\$2.50/Wp
	30 to 50 Wp	Php 4,000/system	50 to 100 Wp	\$1.50/Wp
			Community applications*	\$1.50/Wp up to \$450 per system

Supporting the Private Sector

Output-based subsidies and financial incentives shall be made available to eligible companies. A government subsidy of Php4,000 or Php8,000 (about \$80 or \$160) per PV system, depending on the size, and GEF financial incentives of \$1.50-2.50/Wp, depending on the size of the PV system, will be provided to successful companies.

Subsidies should be passed on by the contractors to the end-users in the form of discounts and incentives. However, the end-user is only eligible to one government subsidy.

For the participating/eligible companies, the contractor can access the Market Development Support Facility, which can provide cost-shared grants of a maximum of 50 percent, to support specific activities such as training and technical assistance for product development and quality control, development of sales and after-sales networks, and other activities considered as enhancing the solar market.

Availability of Credit

Access to credit will be made available to provide greater opportunity for successful companies to market the system. In this package, a microfinance institution (MFI) will be available to provide credit to households who are willing to buy the system. The partner MFI will provide loan at an affordable interest rate, payable in 5 years.

Another option is for the microfinance institution (MFI) to provide a credit facility to the PV supplier engaged in this project. This is to provide enough capital for the PV supplier to cater to the demand of the households. In this case, the MFI and the PV supplier may form a partnership or joint venture depending on the terms agreed upon by both parties.

Promoting Quality Service

Each successful SSMP contractor will have an obligation to install the PV systems for community facilities within six months and warrant their operation for a period of five years. The contractor is also obliged to market and sell, on a commercial basis, solar PV systems to benefit at least 25 percent of total potential households in each SSMP cluster within 18 months from contract signing.

Community Facilities and Size of PV Packages

The aggregate PV power requirements for the community facilities in the first round of tendering contracts range from 21 kWp to 27 kWp. On the other hand, the PV solar home system hardware that will be commercially offered to households may vary from 20 Wp to 75 Wp.

The following baseloads of community facilities are considered for the market package:



System A (Barangay Hall Energy Services)

Outdoor and indoor lighting, public address systems, TV/DVD appliances, cellphone battery charging station



System B (School Energy Services)

outdoor and indoor lighting, TV/DVD appliances, cellphone battery charging station



System C (Public Street Lighting Services)

Public streetlights, path lighting, public area lighting



System D (Social Center Energy Services)

Solar-powered water pumps, reservoir, level 2 distributed potable water system



System E (Productive Use Energy Services)

Village-level grains drying/milling using solar power

Each barangay selects the package of systems based on the community's preference and cost consideration.



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