

# **MINISTRY OF ENERGY**

## **SOLAR PHOTO-VOLTAIC PROJECTS IN GHANA**

### **Reaching Off-Grid Communities with Solar Power**

#### **RENEWABLE ENERGY SERVICES PROJECT (RESPRO)**

In order to further develop the solar and renewable energy programmes, the Ministry established on the RENEWABLE ENERGY SERVICES PROJECT (RESPRO) with funding support from the Global Environment Fund through the United Nations Development Programme.

The project which, was started in February 1999, originally had a project phase of three (3) years after which it was expected to spin off into a public sector company providing rural energy services using fee-for-service and other strategies. Although the Project phase formally ended on 31<sup>st</sup> March 2003, the Ministry has continued the programme.

Plans are now advanced to create a non-profit trust to manage and extend solar PV services to needy communities as an integral part of the Ministry's renewable energy programme. This would be effected by the end of January 2004.

RESPRO has installed and is operating solar PV systems in over one hundred (100) communities in thirteen districts of the three (3) Northern regions and Brong-Ahafo region.

The following installations have been done so far:

Solar home systems	2,200
School systems	42
Clinics Systems	6
Water pumping system	1
Street lighting	24

#### **IDENTIFICATION OF OFF-GRID COMMUNITIES**

A database has been developed for the compilation of remote off-grid rural communities in Ghana. The Ministry is in communication with District Assemblies and MPs to enable a comprehensive compilation of the profiles of eligible remote communities to be considered for Solar PV Electrification.

A total of 1,073 Communities have so far been identified spanning 29 Districts from 7 regions namely the Ashanti, Volta, Eastern, Central, Upper East, Upper West and Northern Regions

Data from the Brong-Ahafo, Western and the Greater Accra Regions is now being compiled.

## **SOLAR RURAL ELECTRIFICATION PROJECT PHASE I:**

Under this project, which was implemented from July 1998 to December 2000, many systems were installed in several communities in the Volta, Eastern, Upper West, Greater Accra and Northern Regions. The beneficiary communities are as follows:

<b>Communities</b>	<b>District</b>	<b>Region</b>	<b>Total No of Systems</b>
Kpasa	Nkwanta	Volta	414
Dormabin	Krachi	Volta	150
Adumadum	Krachi	Volta	18
Kparekpare	Krachi	Volta	200
Dominase Quarters	Fanteakwa	Eastern	141
Dedeso Wereko	Fanteakwa	Eastern	168
Mpaemu Amanfrom	Kwahu-South	Eastern	191
Amate	Kwaku-South	Eastern	201
Wechiau	Wa	Upper West	57
Apolonia	Tema	Greater Accra	14
Ministry of Energy Bldg	Accra	Greater Accra	
RESPRO locations	East Mamprusi	Northern	485
Academic Institutions	Various		23

The types and capacities of systems installed in the communities are as per the table below:

<b>Solar System</b>	<b>Unit Capacity</b>	<b>Quantity Installed</b>	<b>Total Installed Cap (watt)</b>
Household (A)	50Wp	760	38,000
Household (B)	100Wp	1,163	116,300
Hospital/Clinic	600Wp	14	8,400
Streetlight	150Wp	200	30,000
School/Community	250Wp	48	12,000
Water pump (drinking)	600Wp	1	600
Battery Charging Station			
Grid-Connected Solar system	500Wp	6	3,000
	50,00Wp	1	50,000
<b>TOTAL</b>		<b>2,193</b>	<b>258,300</b>

## **RELOCATION OF SOLAR PV SYSTEMS TO NEEDY COMMUNITIES**

Following the extension of the national grid to Kparekpare, Dormabin, Adumadum in the Krachi District, Dedeso, Dominase, in the Fanteakwa District, and Mpaemu Amanfrom and Amate in the Kwahu South District, a

total of about 1,069 solar systems made up of the following have been earmarked for relocation and reinstallation:

Solar Home Systems 50Wp	429
Solar Home Systems 100Wp	535
Solar Streetlight	99
Solar Hospital Systems	1
Solar school systems	5

A number of communities have been recommended to be beneficiaries of the reinstallation programme of these systems. Following confirmation by the affected District Assemblies, the process of dismantling, relocation and reinstallation would commence. The process of recommendation also involves participation by the Members of Parliament for the affected areas.

The Ministry's Renewable Energy Services Programme will take over the assets, do the dismantling, reinstallation and manage of all the solar systems. It is noted that some of the solar systems in communities that would be affected by the dismantling programme are communities that have now been or are being connected under the national electrification programme.

#### **Register of Solar PV Installations in Ghana (2003)**

To date, the Ministry is aware of a considerable number of solar PV installations providing service to a wide variety of applications throughout the country as is illustrated in the table below.

<b>Application</b>	<b>No of Installations</b>
Solar Home Systems	4,500
Water Pumping	80
Vaccine Refrigeration	210
Telecommunications (Repeater Stations)	63
Radio Transceivers	34
Rural Telephony	3
Grid-Connected (50 KW)	1
Battery Charging Stations	20
<b>Total number of installed systems</b>	<b>4,911</b>
<b>Total Installed Power</b>	<b>1.0 MWp</b>

This information is being constantly updated as part of the national database on solar PV systems discussed above. The Ministry would thus welcome information that would facilitate the update of this information.

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