

Encouraging Private Sector Participation in Off-Grid RE for Rural Electrification in the Philippines

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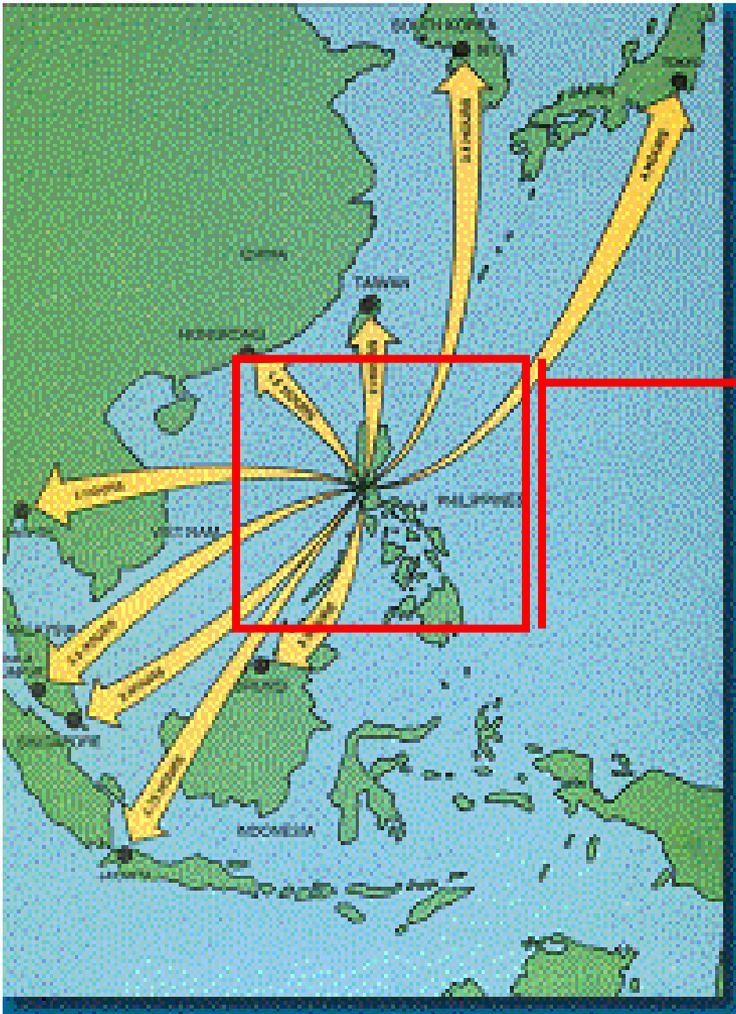
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Department of Energy



Outline of Presentation

- Background on the Philippines
- Overview on the Power Industry
- Existing Off-Grid Areas
- Legal, Policy and Regulatory Framework for Private Sector Participation (PSP)
- PSP Programs in Off-Grid Areas
- Household Electrification Development Plan

The Philippines at a Glance



| | |
|----------------|----------------------------------|
| Land area: | <i>300,000 sq. kms</i> |
| Population: | <i>~ 92 Million (2010)</i> |
| Literacy rate: | <i>93%</i> |
| Climate: | <i>Tropical (23-32 ° C)</i> |
| Language: | <i>Filipino</i> |
| Government: | <i>Democratic</i> |
| Religion: | <i>Dominantly Roman Catholic</i> |
| Currency: | <i>Peso</i> |

With more than 7,100 islands, providing electricity services remains to be the biggest challenge to the Government ...

Power Sector Situationer

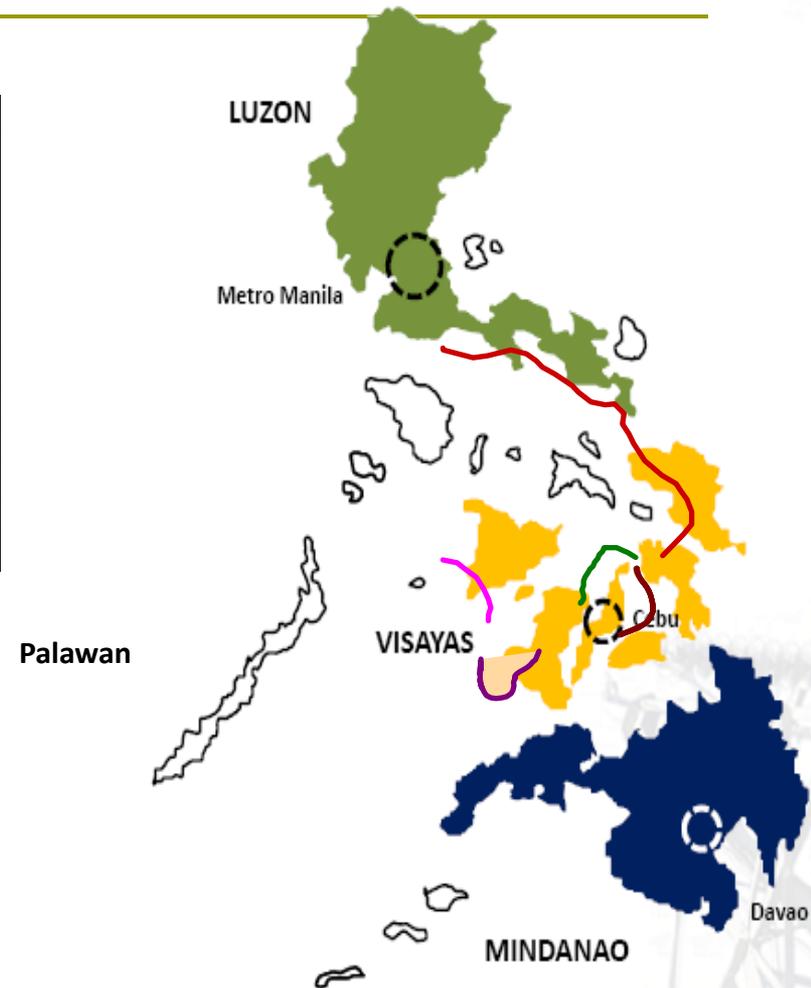
Capacity by Fuel Type

| FUEL TYPE | PHILIPPINES | | | |
|--------------|---------------|---------------|-------------------|------------|
| | Capacity (MW) | | Percent Share (%) | |
| | Installed | Dependable | Installed | Dependable |
| Coal | 4,917 | 4,651 | 30.42 | 32.13 |
| Oil Based | 2,994 | 2,579 | 18.53 | 17.81 |
| Natural Gas | 2,861 | 2,770 | 17.70 | 19.13 |
| Geothermal | 1,783 | 1,434 | 11.03 | 9.90 |
| Hydro | 3,491 | 2,963 | 21.60 | 20.47 |
| Wind | 33 | 33 | 0.20 | 0.23 |
| Solar | 1 | 1 | 0.01 | 0.01 |
| Biomass | 83 | 46 | 0.51 | 0.32 |
| TOTAL | 16,162 | 14,477 | | |

Note: Assuming all units of power plants are in operation.
Installed and Dependable Capacity as of April 2012

Interconnection Line Capacity

- Leyte-Luzon (440 MW)
- Leyte-Cebu (400 MW)
- Cebu-Negros (200 MW)
- Negros – Panay (100 MW)
- Leyte-Bohol (100 MW)



Note: Transparent islands in the above diagram are not covered by NGCP's network.

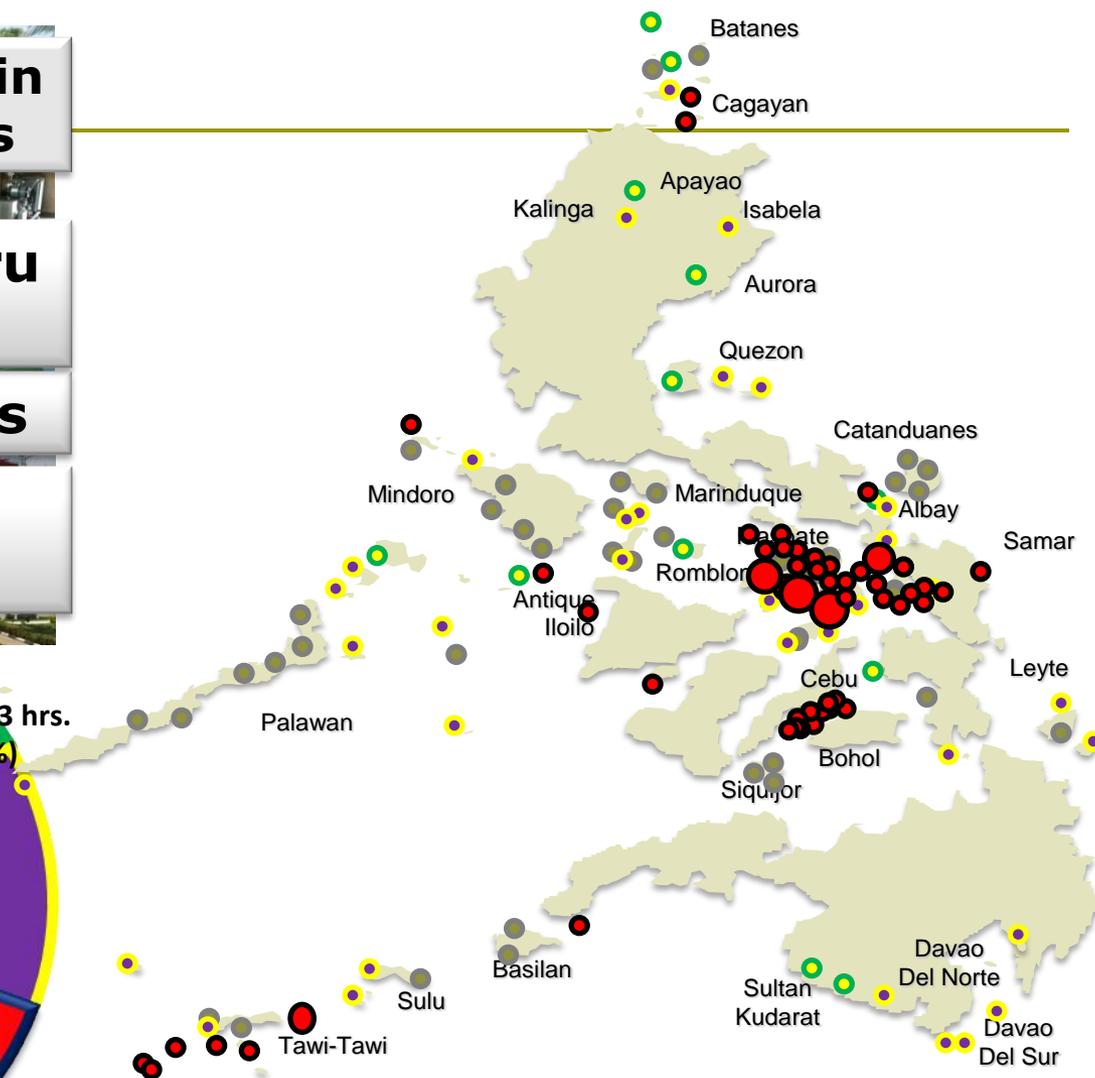
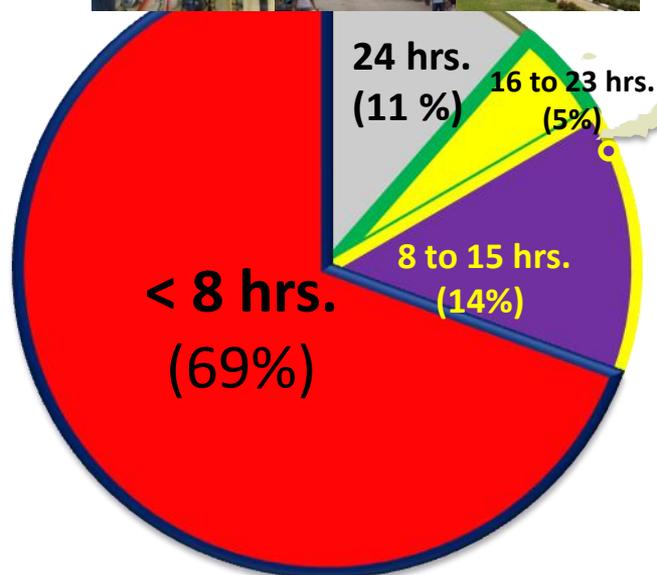
Off-grid/Missionary Areas managed by NPC-SPUG

**290 Power plants in
221 Service areas**

**32 Provinces thru
49 ECs & DUs**

3,934 Barangays

**Over 650,000
Households**



Legal Framework Governing PSP in Off-Grid Areas

1. Electric Power Industry Reform Act of 2001 (EPIRA) or Republic Act 9136

■ Section 2a Declaration of Policy

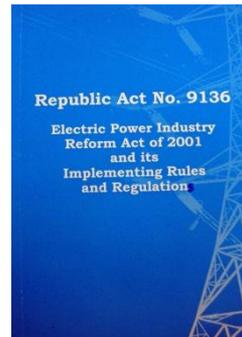
- *To ensure and accelerate the total electrification of the country*

■ Section 70 & Rule 13 (EPIRA-IRR) - New Power Provider (NPP)

- *Missionary Electrification -NPC through the Small Power Utilities Group (SPUG) shall be responsible for providing power generation and its associated power delivery systems in areas that are not connected to the transmission system.*
- *The missionary electrification function shall be funded from the revenues from sales in missionary areas and from the universal charge to be collected from all electricity end-users as determined by the ERC.*
- *SPUG shall periodically assess the requirements and prospects for bringing its functions to commercial viability on an area-by-area basis at the earliest possible time, including a program*
- *Whenever feasible, SPUG shall utilize Renewable Energy Resources.*

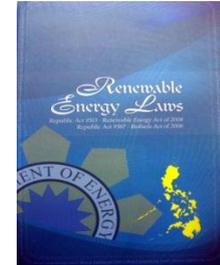
■ Sec 59 & Rule 14 (EPIRA-IRR) - Qualified Third Party (QTP)

- *The provision of electric service in remote and unviable villages that the franchised utility is unable to service for any reason shall be opened to other qualified third parties*



Legal Framework Governing PSP in Off-Grid Areas

2. Renewable Energy Law of 2004 or Republic Act 9153



■ Off-Grid RE Development

- *Chap 4, Sec 12 NPC-SPUG or its successors-in interest and/or qualified third parties in off-grid areas shall source a minimum percentage of its total annual generation from available RE resources in the area*

Policy & Regulatory Framework to enable PSP in Off-Grid Areas

□ **New Power Provider (NPP)**

- DOE Circular No. DC 2004-01-001
 - *Prescribes the Rules and Procedures for Private Sector Participation in Existing NPC-SPUG Areas Pursuant to Rule 13 of the Implementing Rules and Regulations of the Electric Power Industry Reform Act of 2001*
 - *Competitive Selection Process for New Power Providers (NPPs)*
 - *Area with an NPP retains its missionary nature, i.e. the generation tariff charged remains subsidized*
- ERC Resolution No. 11 Series of 2005
- ERC Resolution 21, Series of 2011 (Amended Res. 11, s. 2005)
 - *Difference between the NPPs true cost and the subsidized generation tariff is recovered from the Universal Charge for Missionary Electrification (UCME)*
 - *NPPs get priority draw from the UCME*

Policy & Regulatory Frameworks to enable PSP in Off-Grid Areas

□ **Qualified Third Party (QTP)**

- *A QTP is an alternate electric service provider for remote or unviable villages that the franchised utility is unable to service for any reason*

- **DOE DC No. 2004-06-006**
 - *Prescribes the Qualification Criteria for QTPs*

- **DOE Circular No. DC 2005-12-011**
 - *Prescribes the Guidelines for Participation of Qualified Third Parties for Provision of Electric Service in Remote and Unviable Areas*

- **ERC Resolution No. 22 Series of 2006**
 - *ERC Rules for the Regulation of Qualified Third Parties Performing Missionary Electrification in Areas Declared Unviable by the Department of Energy*

Missionary Programs in Off-grid Areas

- ❑ Rural Power Project
- ❑ Alliance for Mindanao Off-Grid Rural Electrification (AMORE)
- ❑ HEART & SOUL (Team Energy Foundation)
- ❑ PRES Masbate
- ❑ SHS Distribution Project of PNOC
- ❑ DOE Barangay Electrification Program
- ❑ New Power Provider
- ❑ Qualified Third Party

Large-Scale PV for Electrification Projects

Rural Power Project (DOE/WB-GEF)

- 20,000 SHS in 5 years

Alliance for Mindanao Offgrid Rural Electrification

- (AMORE)
(USAID/DOE/Winrock/
Sunpower)
- 5,245 HH (SHS and BCS)

HEART & SOUL (Polilio Island)

- 5,551 HH energized in 17 barangays

PRES Masbate (French Protocol)

- 5,126 SHS units in 5 years

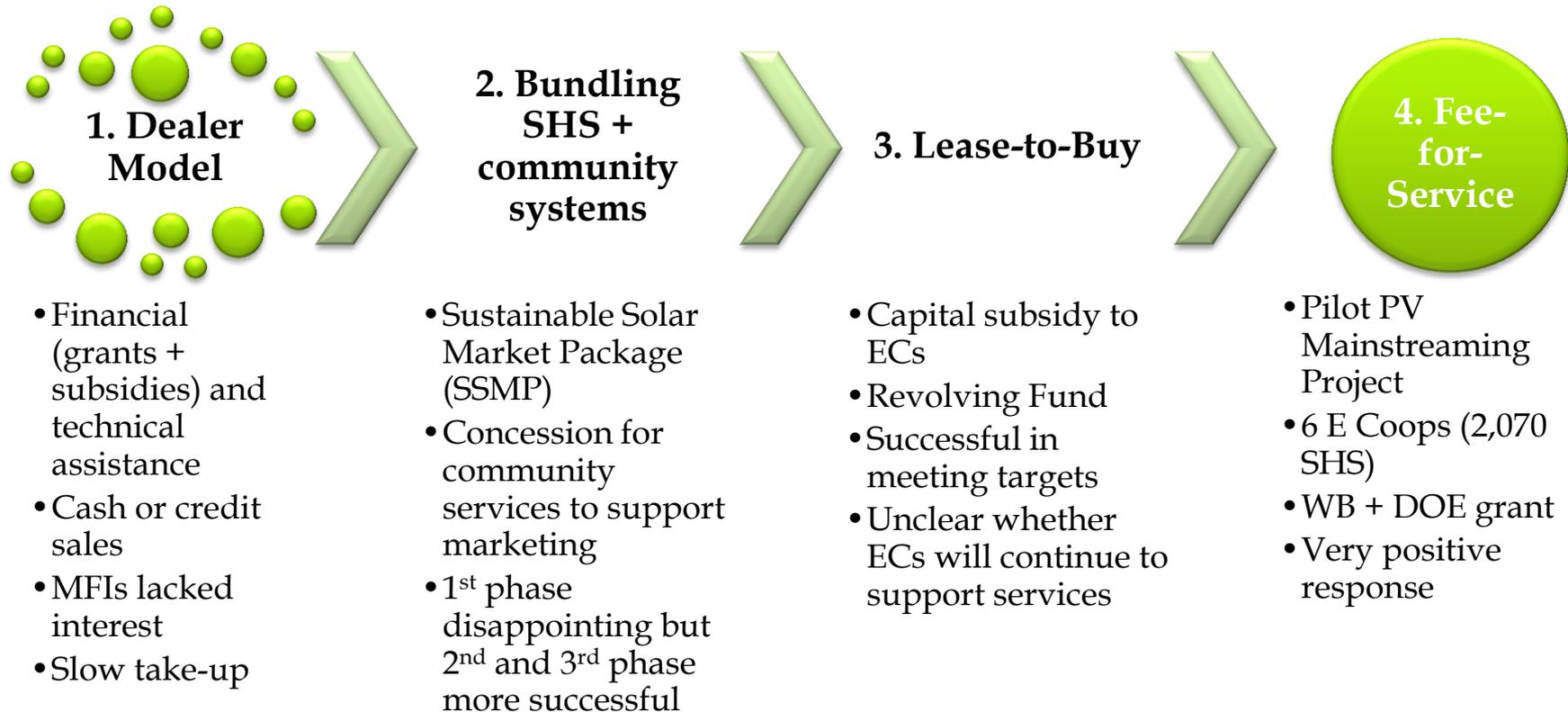
SHS Distribution Project (PNOC /Dutch-Miliev)

- 15,100 SHS in 5 years

DOE-BEP

- 2,750 systems completed and 9,660 ongoing procurement

Summary of RPP's Experiences on the PV Delivery Models



New Power Provider (NPP)

- ❑ 14 SPUG Areas with the largest demand were included in the First Wave for PSP
- ❑ 7 NPPs in 9 NPC-SPUG Areas with 3 partial takeover and 2 fully privatized;
- ❑ Memorandum of Agreement has been signed among DOE, NPC & NEA to Enhance PSP in the SPUG Areas
 - *Formulate policies to accelerate the PSP in NPC-SPUG areas*
 - *Ultimately reduce UCME allocation requirements in missionary areas*
 - *Full privatization of Mainland Palawan and Mindoro*
 - *Determination of subsequent privatization priorities of missionary areas*
 - *Determination of the technology and network configuration to bring about subsidy reduction*
 - *Preparation of TOR and pre-procurement documents for the first batch of missionary areas for bidding*
 - *Privatization of NPC-SPUG Plants and facilities*

Qualified Third Party (QTP)

Existing

1. PowerSource in Rio Tuba, Bataraza, Palawan
2. Philippine Rural Electrification Service Project (PRES) NPC-SPUG in Masbate

On-Going

- PowerSource's Malapascua Project
- Semirara/DMCI's Semirara Island Project



RE Projects in Off-Grid Areas

| | PROJECT NAME | RESOURCE | COMPANY NAME | POTENTIAL CAPACITY | INSTALLED CAPACITY |
|----|--|----------|--|--------------------|--------------------|
| 1 | Solong Hydroelectric Power Plant | Hydro | Sunwest Water & Electric Co. | | 2.10 |
| 2 | Hitoma-1 Hydroelectric Power Plant | Hydro | Sunwest Water & Electric Co. | | 1.50 |
| 3 | Liniao-Cawayan (Lower Cascade) Hydroelectric Power Plant | Hydro | Oriental Mindoro Electric Cooperative | | 2.10 |
| 4 | Liniao-Cawayan (Upper Cascade) Hydroelectric Power Plant | Hydro | Oriental Mindoro Electric Cooperative | 2.10 | |
| 5 | Inabasan Hydroelectric Power Plant | Hydro | Ormin Power, Inc. | 10.00 | |
| 6 | Catuiran Hydroelectric Power Plant | Hydro | Sta. Clara Power Corporation | 8.00 | |
| 7 | Langogan Hydroelectric Power Plant | Hydro | Langogan Power Corporation | 6.80 | |
| 8 | Dulangan Hydroelectric Power Plant | Hydro | PNOC - Renewables Corp. | 18.00 | |
| 9 | Alag Hydroelectric Power Plant | Hydro | Constellation Energy Corporation | 18.00 | |
| 10 | Kapipian Hydroelectric Power Plant | Hydro | Sunwest Water & Electric Co. | 2.40 | |
| 11 | Batang-batang Hydroelectric Power Plant | Hydro | Langogan Power Corporation | 3.50 | |
| 12 | Bongabong Hydroelectric Power Plant | Hydro | Constellation Energy Corporation | 20.00 | |
| 13 | Catuiran (Upper Cascade) Hydroelectric Power Plant | Hydro | Sta. Clara Power Corporation | 8.00 | |
| 14 | Puerto Galera wind Power Project | Wind | Philippine Hybrid Energy Systems, Inc. | 15.00 | |
| 15 | Abra de Ilog Wind Power Project | Wind | Alternergy Philippine Holdings Corporation | 40.00 | |
| 16 | Bulalacao Wind Power Project | Wind | PhilCarbon, Inc. | TBD | |
| 17 | Casiguran Solar Power Project | Solar | Aurora Special Economic Authority | 1.00 | |

Status of Household Electrification in the Philippines

(31 December 2010)

LUZON

8.48 M HHs
----- = 84.1%
10.09M HHs

1.60 Million
Unelectrified HHs

VISAYAS

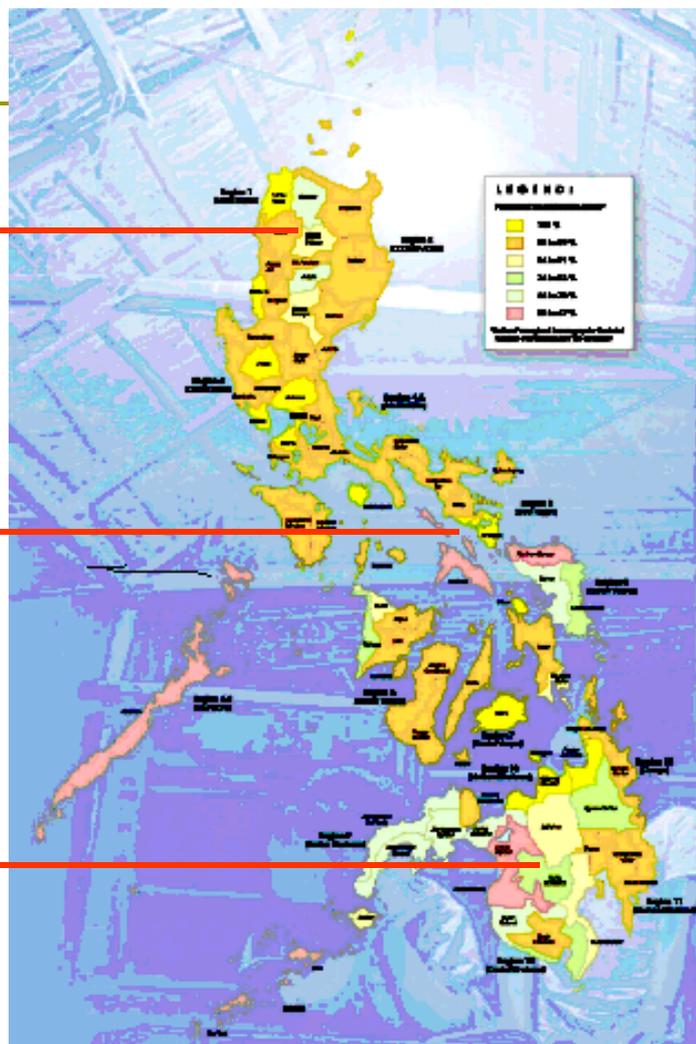
2.28M HHs
----- = 66.4%
3.43M HHs

1.15 Million
Unelectrified HHs

MINDANAO

2.08M HHs
----- = 55.8%
3.73M HHs

1.65 Million
Unelectrified HHs



PHILIPPINES

12.84M HHs
----- = 74.5%
17.25M HHs

17.25 Million
Total Potential HHs
Based on DDP 2010

4.40 Million
Unelectrified HHs

**Commitment under
Philippine
Development Plan
2011-2016**

- **90% household electrification by 2017**

▣ *Estimates based on DDP 2010-2019*

Household Electrification Development Plan (HEDP)

- The HH Electrification Development Plan (HEDP) aims to provide a holistic national plan and program for the attainment of the total electrification of all households in the country in a least-cost, equitable, and efficient manner

Objectives of HEDP

- ❑ To define specific policies and strategies in attaining the goal of 90% HH electrification by 2017 in fulfilling the Government's Policy Objective of total electrification in the countryside as enshrined in EPIRA;
- ❑ To delineate the roles of the different stakeholders in the implementation of the plan;
- ❑ To identify and consolidate programs, projects and activities of different stakeholders that will contribute to the attainment of the HH electrification targets;
- ❑ To develop a robust database and information management system for the accurate estimation and reporting of the HH electrification levels in the country and for planning and monitoring purposes, among others; and,
- ❑ To determine and allocate financial resources necessary for carrying out the plans and projects as identified above.

Summary of Major Strategies

- ❑ Establish “electrified household” as performance measure
- ❑ Establish the National Household Electrification Information System (NHEIS)
- ❑ Set the pace for the intensification of household electrification of all DUs
- ❑ Streamline procedures for household connection
- ❑ Ensure the most suitable technology options for all electrification projects
- ❑ Design and implement incentives and support mechanisms to promote greater utilization renewable energy systems in household electrification program
- ❑ Ensure sufficient funding and other support for the overall household electrification program
- ❑ Establish a well-targeted and efficient administration of grants and subsidies
- ❑ Ensure greater accountability in program and project management
- ❑ Undertake capacity building activities to key stakeholders on a need-based approach

Summary of Major Strategies

- ❑ Implement incentives under Renewable Energy Act to promote the greater utilization of commercially-viable renewable energy systems for decentralized electrification in remote and areas
- ❑ Develop and/or revise existing policies and regulations to encourage DUs to undertake scaled-up decentralized PV electrification in off-grid areas and various innovative schemes for public-private partnerships in their franchise areas.
- ❑ Link the provision of electricity service into the major development and social service programs of the Government such as rural development, education, health care, and even urban resettlement, among others.
- ❑ Secure funding commitment from the Government and other financial institutions to finance and implement all sub-programs and activities towards the attainment of 90% HH electrification.

THANK YOU!!!

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