

RENEWABLE ENERGY DEVELOPMENT for REMOTE AREAS: THE PNOC RC PERSPECTIVE

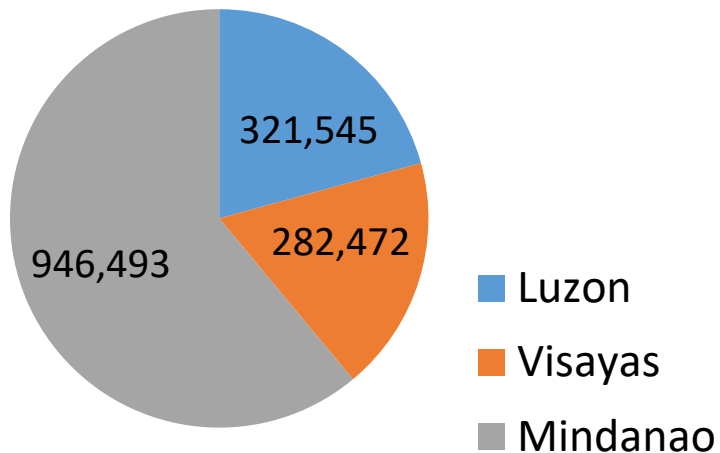


Presentation Outline

1. Power Situation in the Philippines
2. Government Solutions on Electrification of Unserved/Underserved Areas
3. Mini/Micro Grid RE Electrification
4. Renewable Energy Technology Solutions
5. How Can PNOC RC Help You?

Power Situation in the Philippines

Unserved Household



- Based on the 2020 NEA report, a total of 1,550,510 of unserved households are still not connected to the power grid.
- Majority of this number is in Mindanao (946,493 households), while Luzon and the Visayas share the remaining (321,545 and 282,472 households, respectively).

Government Solutions to Electrify Unserved and Underserved Areas

Government intends to electrify these areas with the following strategies:



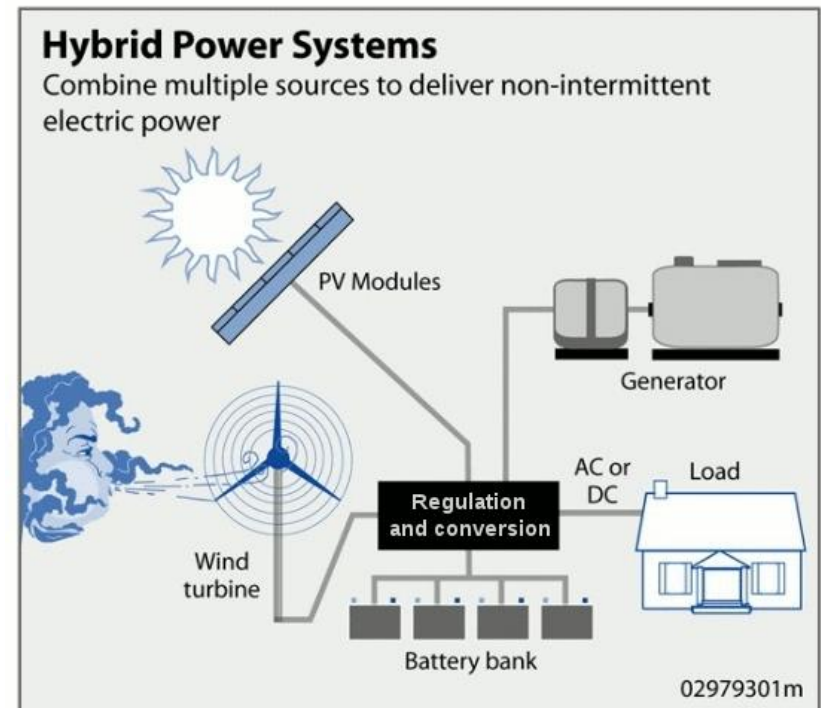
Mini/Micro Grid RE Electrification



- Mini/Micro grids provide decentralized, efficient electricity connecting remote communities that lacks access to the grid

Renewable Energy Technology Solutions

1. Hybrid (Energy Storage) Solar PV/Wind System
2. Hybrid systems using bio-diesel generators



How Can PNOC RC Help You?

1. Implementation of mini or micro-grid RE systems for electrification.

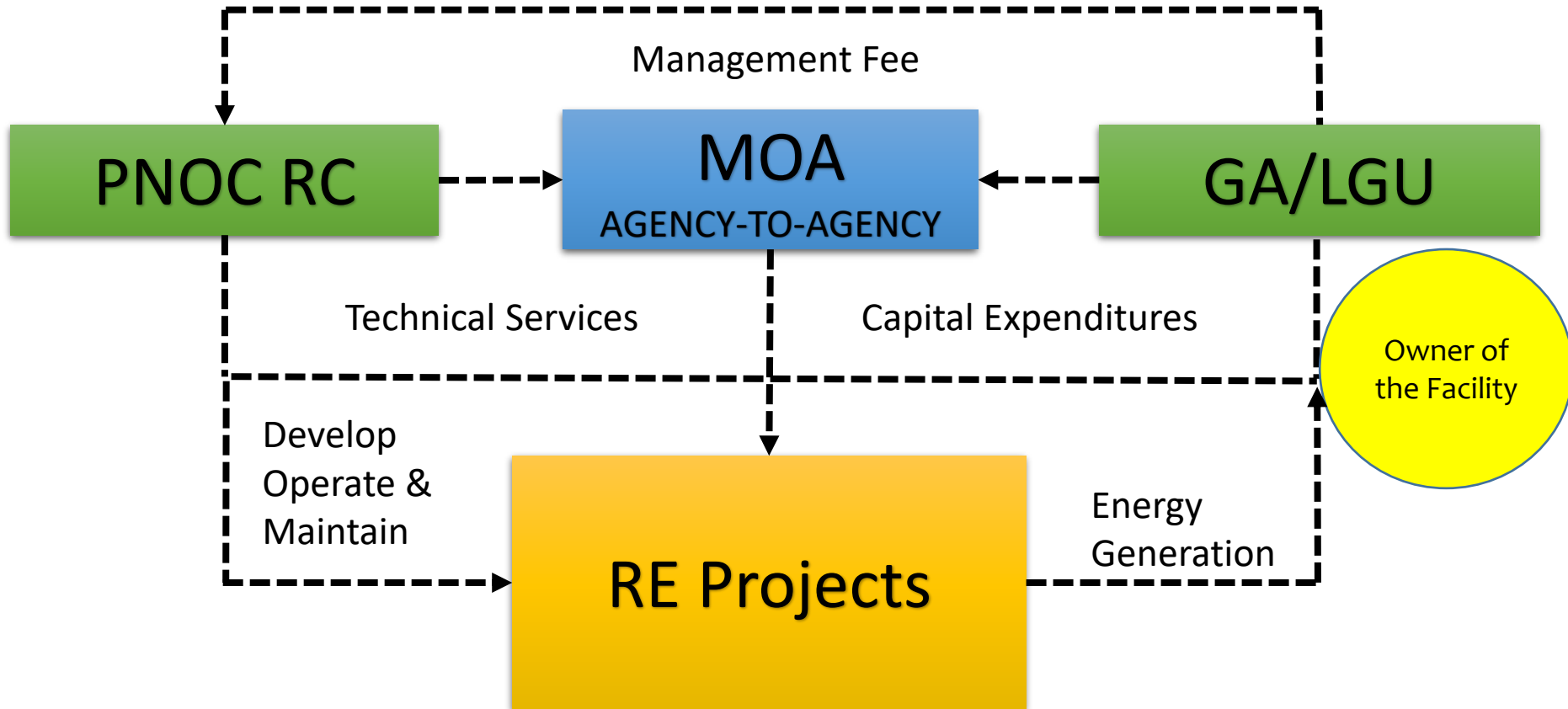
These are small-scale decentralized RE generation systems with the capacity to integrate different energy sources, hybrid RE systems (i.e. solar with ES, wind, bio-diesel, etc.) and energy storage technologies on a modular basis.



How Can PNOC RC Help You?

- 2. *Technical Consultancy Services on Renewable Energy and Energy Efficiency Projects for LGUs and GAs***
 - a. Solar Rooftop Projects
 - b. Solar-powered Streetlighting Projects
 - c. Modular WTE Projects
 - d. Renewable Energy Projects

Our Technical Services Scheme



Our Existing Projects & Partners



PROJECT:	32 MW Maibarara Geothermal Plant in Sto. Tomas, Batangas
PARTNER:	PetroGreen Energy Corp. and TransAsia Oil & Energy Development Corp.

Our Existing Projects & Partners



PROJECT:	1 MW Rizal Hydro Power Plant in Rizal, Nueva Ecija
PARTNER:	National Irrigation Authority (NIA) and National Development Company (NDC)

Our Existing Projects & Partners



PROJECT:	3,725 Energy Efficient Lighting
PARTNER:	Philippine Public Safety College (PPSC)

Our Existing Projects & Partners

- ✓ In 2014, the DOE launched the project called “Installation of Solar PV Facilities for Own-Use by Private Academic Institutions”.
- ✓ In 2015, adopting the above concept, PNOC RC initiated its rooftop solar PV installations for government institutions in 2015.
- ✓ To date, PNOC RC has already installed a total of 2,570-kWp capacity of rooftop solar photovoltaic systems in 10 Government Agencies and 1 Local Government Unit.



List of Projects & Partners



ESTABLISHMENT	CAPACITY
PHC - Quezon City	100 kWp
DOST PCIEERD – Taguig City	100 kWp
DENR EMB – Quezon City	100 kWp
PCA – Quezon City	80 kWp
UP Diliman – Quezon City	240 kWp
COA – Quezon City	200 kWp
BSP EDPC – Manila City	200 kWp
BSP SPC – Quezon City	400 kWp
LGU Naga City, Cebu	100 kWp
PICC – Pasay City	1,050 kWp

Benefits from the Projects

As of 2021, the benefits obtained from the PNOC RC's rooftop solar PV installations are as follows:

**12.02GWh Energy
Displaced**

**Php6,425,757
Government Savings**

**6,821Mtons of Carbon
Emission Reduction**

**Php63.21 Million of
Recouped Government
Capital**

ELECTRICITY, EDUCATION AND PEACE



“Imagine a life without any of the three, or even any one. Then imagine Kagay Elementary School (Kagay ES) in Talipao, Sulu where armed conflict and lack of electricity have deprived children of even the most basic education. Imagine having to learn the ABC and basic math under the constant threat of terrorism.” (Excerpt from the DOE Website)

Solar PV for School



- On 31 August 2019, PNOC RC has installed a 2kWp Off-Grid Solar PV that powered a Multi-Media Learning Center for students at the Kagay Elementary School.
- Flagship project of DOE Usec Fuentebella as part of the “Adopt-a-School” program.
- Funded by Upsilon Sigma Phi Batch 1993, in cooperation with AFP WesMinCom.

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Thank You