

PNOC RC: ENERGY EFFICIENCY & CONSERVATION PROJECTS IN GOVERNMENT BUILDINGS



PRESENTATION OUTLINE

- **About PNOC RC**
 - **Accomplishments**
 - **Projects completed**
- **PNOC RC as an ESCO**
 - **DOE accreditation**
 - **Objectives as an ESCO**
 - **Services**
 - **Projects**
 - **Business model**
 - **Requirements from its clients**
 - **Success stories from its projects**
 - **Way forward**

PNOC RENEWABLES CORPORATION

A SUBSIDIARY OF THE PHILIPPINE NATIONAL OIL COMPANY



Department of Energy



PNOCEC

PNOC EXPLORATION CORPORATION



**Renewables
Corporation**

WE ARE PNOC RC

PNOC RC envisions to be the government arm for the development and implementation of renewable energy and energy efficiency projects.





OUR LATEST ACCOMPLISHMENTS

- ✓ Received Quality Management System Certification to ISO 9001:2015 Standards
- ✓ Awarded as one of GCG'S Top 10 GOCCs in 2016

2016 TOP 10 GOCC

(in alphabetical order)

Bases Conversion Development Authority
Development Bank of the Philippines
Government Service Insurance System
Land Bank of the Philippines
LBP Leasing and Finance Corporation
Philippine Crop Insurance Corporation
Philippine Deposit Insurance Corporation
Philippine Reclamation Authority
PNOC Renewables Corporation
Social Security System



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OUR PROJECTS



**1 MWe MINI-HYDRO POWER PLANT
IN IRRIGATION CANALS**



**10% STAKE IN THE MAIBARARA
GEOTHERMAL POWER PLANTS**



**2.72 MWp OF PV SOLAR SYSTEM ON
ROOFTOPS OF GOVERNMENT BUILDINGS**

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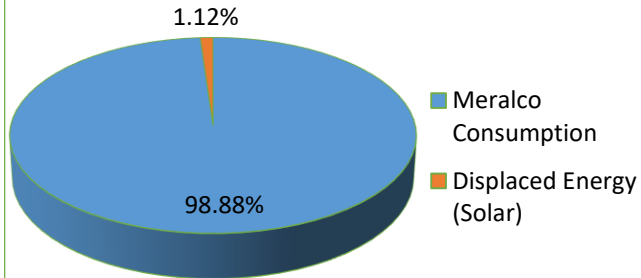


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PHILIPPINE HEART CENTER

| | |
|---------------------|----------|
| Building | PHC |
| Capacity | 100kW |
| MOA Signing | May 2015 |
| Inauguration | Nov 2015 |

Actual Solar Energy Generation vs. Meralco Consumption





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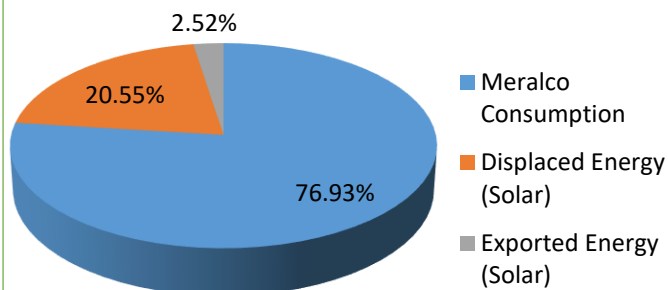
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DOST PCIEERD

| | |
|---------------------|------------------|
| Building | Science Heritage |
| Capacity | 100kW |
| MOA Signing | June 2015 |
| Inauguration | Dec 2015 |

Actual Solar Energy Generation vs. Meralco Consumption



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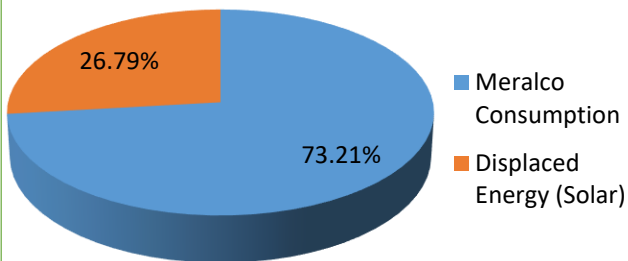


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DENR EMB

| | |
|---------------------|----------|
| Building | EMB |
| Capacity | 100kW |
| MOA Signing | Aug 2015 |
| Inauguration | Aug 2016 |

Actual Solar Energy Generation vs. Meralco Consumption





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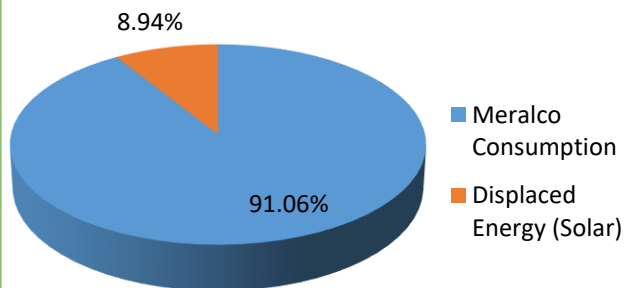
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PHILIPPINE COCONUT AUTHORITY

| | |
|-----------------|-------------|
| Building | Main |
| Capacity | 80kWp |
| MOA Signing | March 2016 |
| Inauguration | Dec 2016 |

Actual Solar Energy Generation vs. Meralco Consumption



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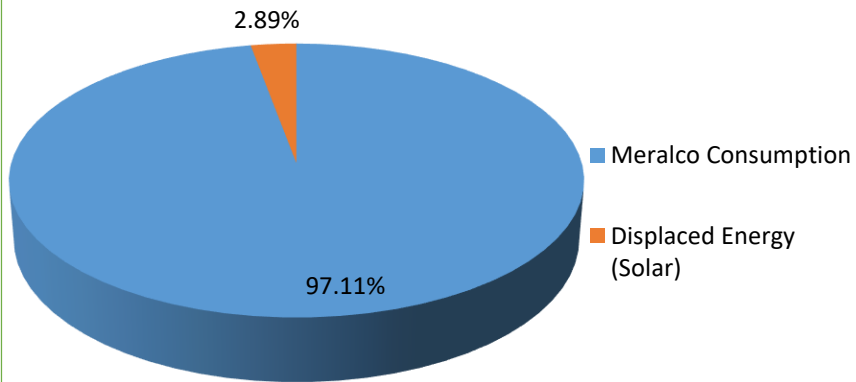
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UP DILIMAN

| | |
|---------------------|-------------------------|
| Building | Quezon, Melchor & Palma |
| Capacity | 240kWp |
| MOA Signing | March 2016 |
| Inauguration | Feb 2017 |



Actual Solar Energy Generation vs. Meralco Consumption





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COMMISSION ON AUDIT

Building Dorm & PIDS

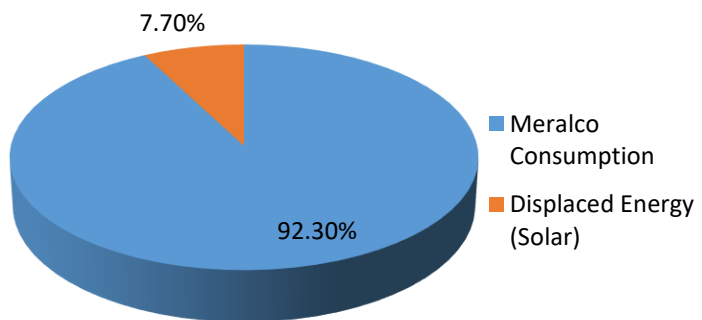
Capacity 200kWp

MOA Signing May 2016

Inauguration March 2017



Actual Solar Energy Generation vs. Meralco Consumption





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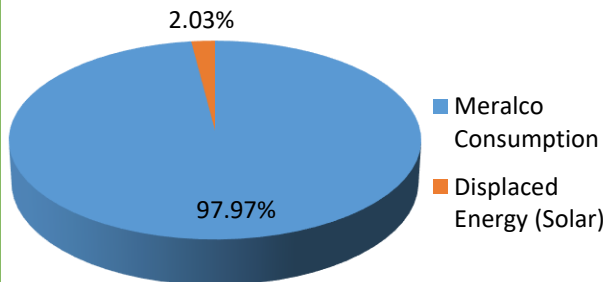
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BANGKO SENTRAL NG PILIPINAS

| | |
|-----------------|-------------|
| Building | EDPC |
| Capacity | 200kWp |
| MOA Signing | Dec 2016 |
| Inauguration | June 2017 |

Actual Solar Energy Generation vs. Meralco Consumption



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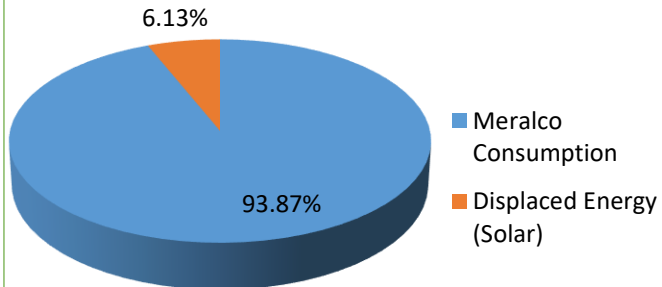
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BSP SECURITY PLANT COMPLEX

| | |
|---------------------|-----------|
| Building | E |
| Capacity | 400kWp |
| MOA Signing | Feb 2017 |
| Inauguration | June 2017 |



Actual Solar Energy Generation vs. Meralco Consumption



PHILIPPINE INTERNATIONAL CONVENTION CENTER



PICC Solar Rooftop Project

1200kWp

| | | |
|-------------|-------------|--------|
| Building | Reception | 600kWp |
| | Secretariat | 360kWp |
| | Delegation | 240kWp |
| MOA Signing | August 2017 | |



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PNOC RC AS AN ESCO



OBJECTIVES:

- ✓ To support the DOE in its energy efficiency and conservation programs and initiatives;
- ✓ To assist government institutions implement energy efficiency and conservation projects;
- ✓ ; and
- ✓ To provide value-adding services.

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OUR SERVICES

Identification of energy efficiency and conservation measures

Detailed engineering, project design and specifications

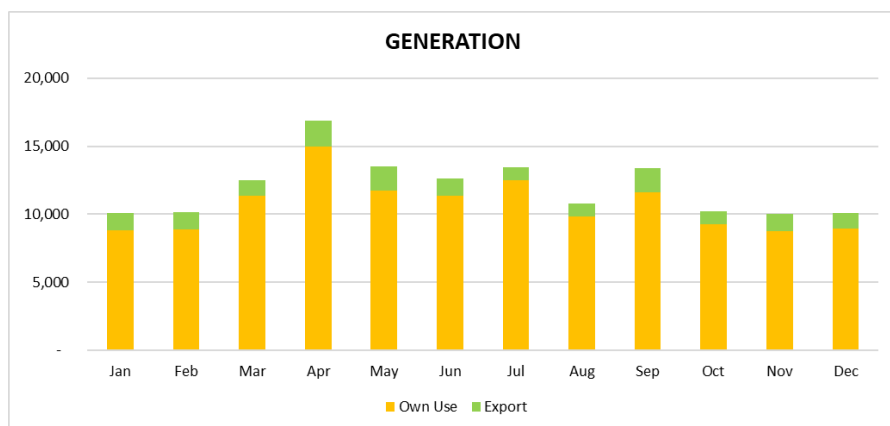
Project financing with no upfront cost

Procurement and installation of equipment

Facility and equipment O&M within the agreed contract period

OUR SUCCESS STORIES

Actual DOST Solar Project

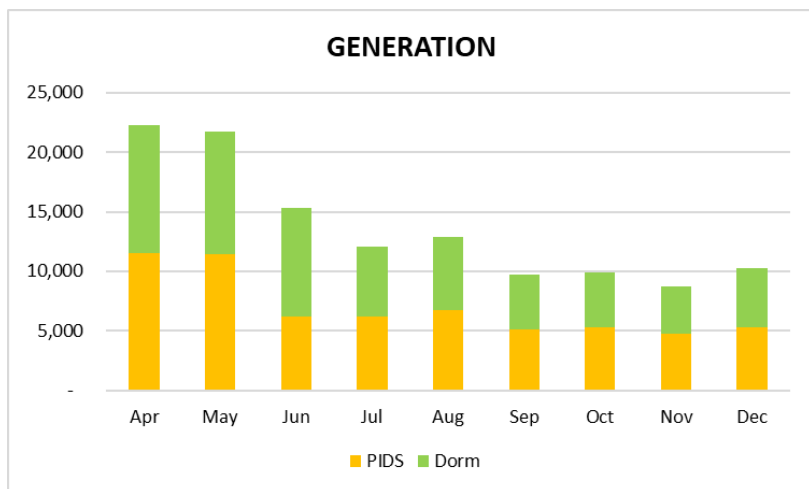


| Month | Displaced Energy (kWh) | PNOC RC Rate | Actual Rate | 2017 Savings |
|--------------|------------------------|--------------|-------------|----------------------|
| | <i>a</i> | <i>b</i> | <i>c</i> | <i>d = (c-b) x a</i> |
| January | 8,815 | 9.50 | 9.7 | 1,763 |
| February | 8,865 | 9.50 | 9.93 | 3,812 |
| March | 11,360 | 9.50 | 11.28 | 20,221 |
| April | 14,960 | 9.50 | 11.09 | 23,786 |
| May | 11,760 | 9.50 | 10.63 | 13,289 |
| June | 11,360 | 9.50 | 8.69 | - |
| July | 12,480 | 9.50 | 9.04 | - |
| August | 9,840 | 9.50 | 8.92 | - |
| September | 11,600 | 9.50 | 9.68 | 2,088 |
| October | 9,280 | 9.50 | 9.78 | 2,598 |
| November | 8,720 | 9.50 | 10.71 | 10,551 |
| December | 8,960 | 9.50 | 9.73 | 2,061 |
| TOTAL | | | | 80,169 |

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Actual COA Solar Project



| Month | Displaced Energy (kWh) | PNOC RC Rate | Actual Rate | 2017 Savings |
|------------------|------------------------|--------------|-------------|----------------|
| | a | b | c | d= (c-b) x a |
| PIDS | | | | |
| April | 11,531 | 9.50 | 14.89 | 62,153 |
| May | 11,429 | 9.50 | 13.02 | 40,229 |
| June | 6,240 | 9.50 | 10.64 | 7,114 |
| July | 6,160 | 9.50 | 11.78 | 14,045 |
| August | 6,720 | 9.50 | 11.00 | 10,080 |
| September | 5,120 | 9.50 | 12.46 | 15,155 |
| October | 5,280 | 9.50 | 12.60 | 16,368 |
| November | 4,720 | 9.50 | 11.03 | 7,222 |
| December | 5,280 | 9.50 | 13.34 | 20,275 |
| SUB-TOTAL | | | | 192,641 |
| DORM | | | | |
| April | 10,756 | 9.50 | 11.60 | 22,589 |
| May | 10,284 | 9.50 | 10.40 | 9,256 |
| June | 9,040 | 9.50 | 8.99 | - |
| July | 5,920 | 9.50 | 9.64 | 829 |
| August | 6,160 | 9.50 | 9.10 | - |
| September | 4,640 | 9.50 | 9.72 | 1,021 |
| October | 4,640 | 9.50 | 10.47 | 4,501 |
| November | 4,000 | 9.50 | 11.88 | 9,520 |
| December | 4,000 | 9.50 | 11.07 | 7,787 |
| SUB-TOTAL | | | | 55,503 |
| TOTAL | | | | 248,142 |

HOW DO WE PROCEED

Submit Letter of Intent (LOI) to PNOC RC

Submit technical requirements

Schedule site visit

Conduct feasibility study

Execute MOA

Project Implementation

Contact Details:

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Bonifacio Global City, Taguig City

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Thank You