

# THE NATIONAL ROOFTOP SOLAR PROGRAMME

## PRESENTATION @ ANGLOPHONE AFRICAN REGIONAL WORKSHOP

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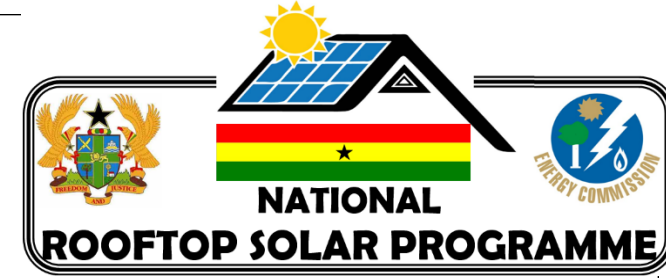
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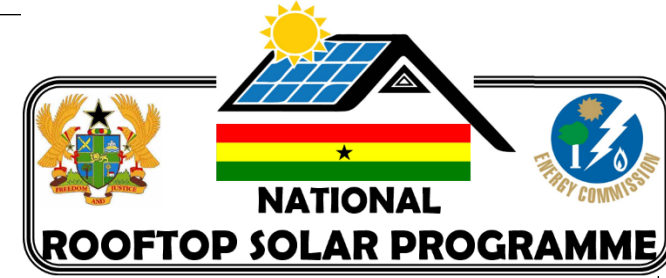
25 April, 2017

# OUTLINE

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- Criteria
- Key Issues for Consideration
- Status
- Challenges
- Funding Support

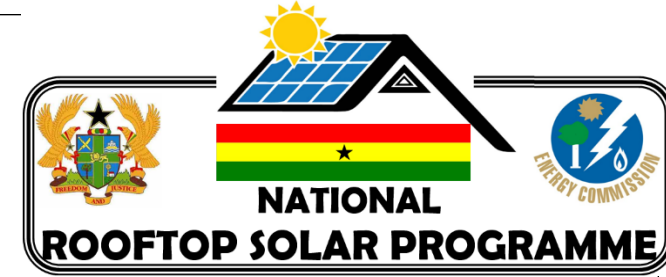


# BACKGROUND



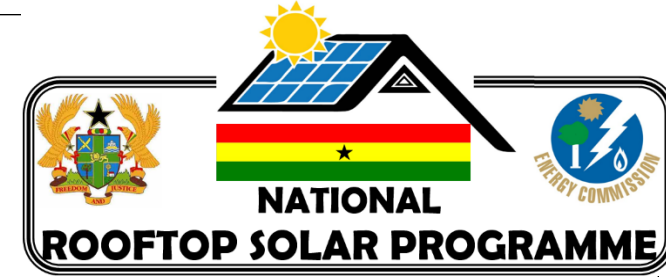
- ❑ Ghana's electricity supply has faced some challenges as electricity demand grows; inadequate reserve margin, low water level HP dams, erratic natural gas supply, unavailability of some of the thermal power plants.
- ❑ Impact on industries, businesses and domestic consumers was high
- ❑ One way to demand-supply imbalance is to deploy solar PV systems on rooftops of homes and commercial buildings to supply power especially during peak periods.
- ❑ However, one key barrier to the uptake of solar PV technology is the high initial cost.
- ❑ The National Rooftop Solar Programme has been initiated to help address such issue.

# THE NATIONAL ROOFTOP SOLAR PROGRAMME

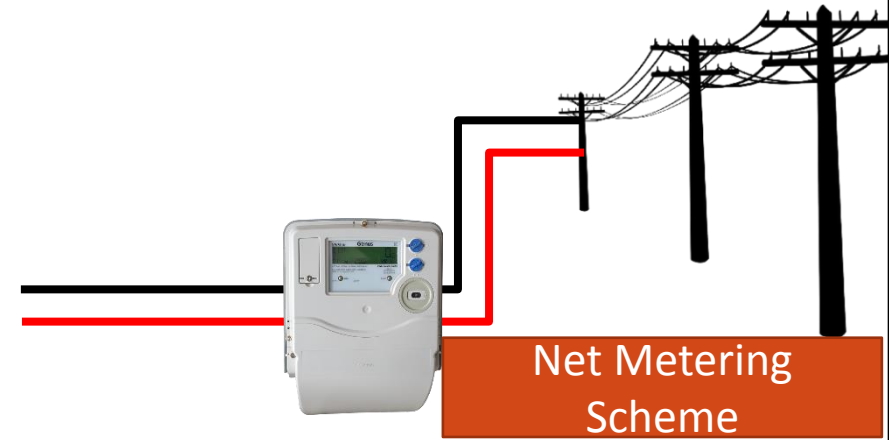


- ❑ The programme is a Capital Subsidy Scheme under which beneficiaries are given capital subsidy to cover the **cost of the solar panel** component of a solar PV system.
- ❑ Objective of the programme is to install 200,000 solar PV systems on rooftops in the country **to reduce peak load** (lighting load and critical loads) up to 200MW in the medium term.
- ❑ The programme is targeted at residential, public, commercial and industrial sectors.
- ❑ The beneficiaries of the programme will include homes, offices, hospitality industry, small and medium enterprises (SMEs).

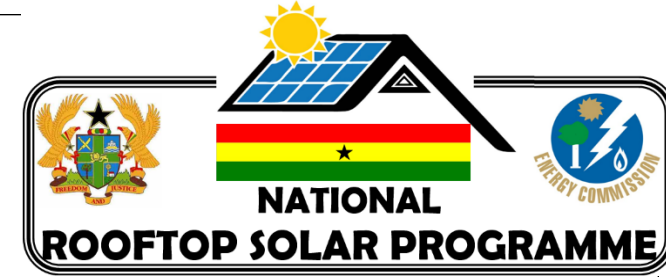
# THE NATIONAL ROOFTOP SOLAR PROGRAMME



- ❑ The implementation of the National Rooftop Solar Programme begun on 8<sup>th</sup> February, 2016.
- ❑ Capital subsidy is in the form of FREE solar PV panels up to a maximum of 500W<sub>p</sub>.
- ❑ The 1<sup>st</sup> phase is targeting 20,000 installations in residential facilities.
- ❑ Only solar vendors/installers, who have been licensed by the Energy Commission can participate in the programme.



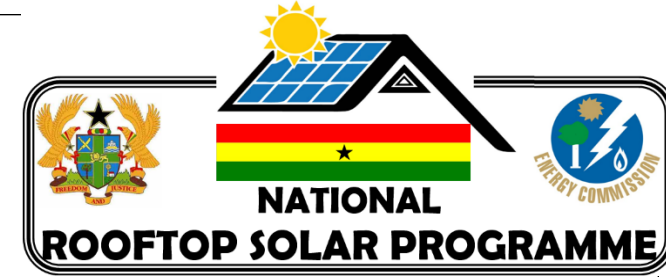
# CRITERIA FOR PARTICIPATION



The applicant must;

1. **change all lamps** at his/her facility **to LED lamps.**
2. purchase the Balance of System (BoS) components such as inverter, batteries, charge controllers, changeover switch and wires, etc; and
3. use only solar PV installers licensed by the Energy Commission for all the installation works.
4. apply by submitting duly filled Application Form.
5. receive approval from EC

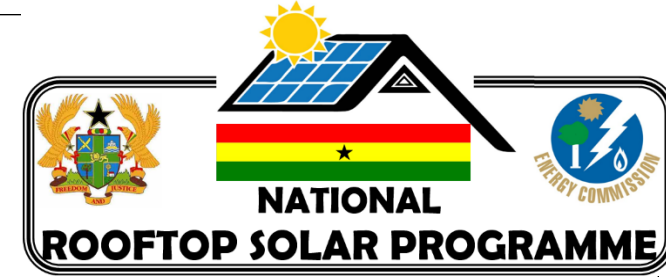
# KEY ISSUES FOR CONSIDERATION



1. Renewable energy **policy target of 10% in the energy mix by 2020.**  
Currently, Renewables currently accounts for **only 1% of installed capacity.**
2. Policy and regulatory framework established under RE Law (Renewable Energy Act, 2011 - ACT 832).
3. Policy to move to energy efficiency and conservation.  
From Incandescent > Compact Florescent (CFL) > **LED lamps.**
4. Resource availability.
5. Market barrier issues – High initial cost, lack of information on RETs, etc. and then **create a competitive market.**
6. Reduce dependency on the grid. Shave off peak load.

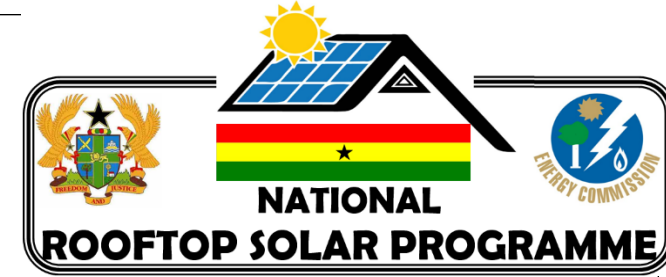


# STAKEHOLDER ENGAGEMENT



- The stakeholder meetings were held with;
  - Real Estate Developers (Ghana Real Estates Developers Association and State Housing Company),
  - Solar vendors (AGSI, Wilkins, Trade Works, DENG, Energiebau, Solar Light, ABES, 3SIL and others),
  - Banks (Ecobank, Royal Bank, HFC Bank, UT Bank, UBA, Stanbic Bank, Zenith Bank, ARB Apex Bank, Fidelity Bank, Ghana Home Loans, Ghana Leasing, and KfW)
  - Tourism Industry (Ghana Tourism Authority, Ghana Tourism Federation, Ghana Hotels Association, SSNIT and TDC),
  - Associations (Civil Service Association, GNAT, NAGRAT, National Board Small Scale Industries (NBSSI) and Association of Small Scale Industry (ASSI) , and
  - Development Partners (UNDP, GEF, DANIDA, AfDB, KfW, GIZ, SECO and EU).

**SUSTAINABILITY**



# High Quality of Solar Products

The licensed Solar Vendor shall

- ❑ install ONLY deep cycle batteries meant for solar PV systems.
- ❑ ensure that all BoS are tested and certified by the Ghana Standards Authority (GSA), and meet the minimum Technical Standards set by GSA.
- ❑ ensure that applicants have changed all lamps at their facilities to LED lamps before the installation of the BoS.
- ❑ install either solar panels supplied by the Commission or solar panels provided by the Vendor, and integrate the panels with the installed BoS to form a complete solar PV system.
- ❑ install only approved capacity of solar panels and up to a maximum of 500 Watts. Any extra solar panels installed shall be borne by the applicant.

**AGREEMENT**

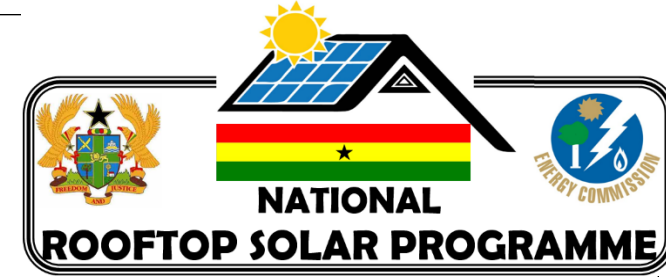
**PROGRAMME TITLE:**  
NATIONAL ROOFTOP SOLAR PROGRAMME

**PROGRAMME IMPLEMENTER:**  
ENERGY COMMISSION, ACCRA

**SOLAR VENDOR:**  
XXXXXXXXXXXXXXXXXX  
[LICENCE #]

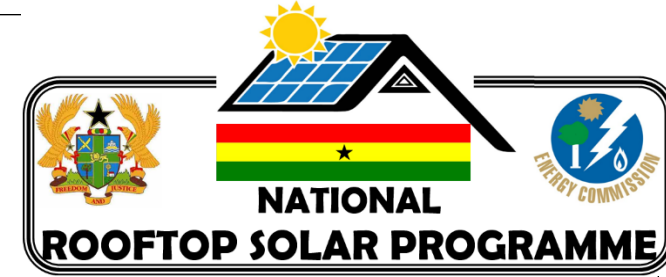
**VALIDITY PERIOD:**  
ONE (1) YEAR

# Sustainable Financing



- Collaboration with the financial institutions
  - umb has launched a **UMB SOLAR LOAN** facility
  - afb Financial Services has launched a **solar loan facility** for consumers.
  - uniBank has also launched a **U-SOLAR PRODUCT** loan facility
  - Other banks have certain high purchase credit facilities for solar PV

# Human Capacity Development



- Engage accredited educational institutions to administer training for solar vendors;
- Participation in grid connected solar PV training from accredited institutions would also be included as part of the criteria to secure solar installer's license from the Energy Commission as well as winning government contract; and
- Ensure the integration of the curricula as part of training being provided at the tertiary level under the engineering discipline.

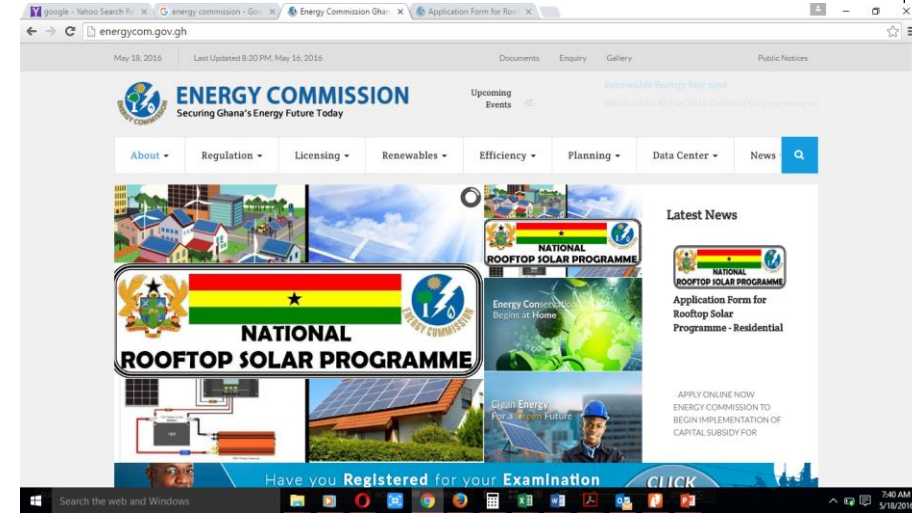
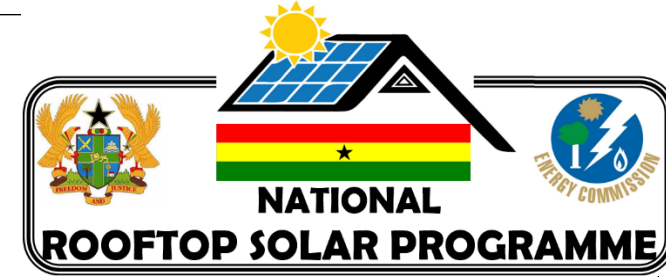
**STATUS**

# HOW TO APPLY

□ The prospective beneficiary must put in an application. The application form can be:

- **picked from EC office and completed**, or
- **retrieved online** ([www.energycom.gov.gh](http://www.energycom.gov.gh) or [www.rooftopsolar.energycom.gov.gh](http://www.rooftopsolar.energycom.gov.gh)) **and completed**, or
- **completed online and submitted automatically** via ONLINE APPLICATION PORTAL.

*\*A copy of a valid national ID would be needed.*



**NATIONAL ROOFTOP SOLAR PROGRAMME**  
**APPLICATION FORM - RESIDENTIAL**

**A-1 Personal Details**

Name of Applicant \_\_\_\_\_

Phone Number \_\_\_\_\_

ID type: Passport/Driving license/Voters (underline where applicable)

ID Number \_\_\_\_\_ (attach a copy of the national ID)

Postal Address \_\_\_\_\_

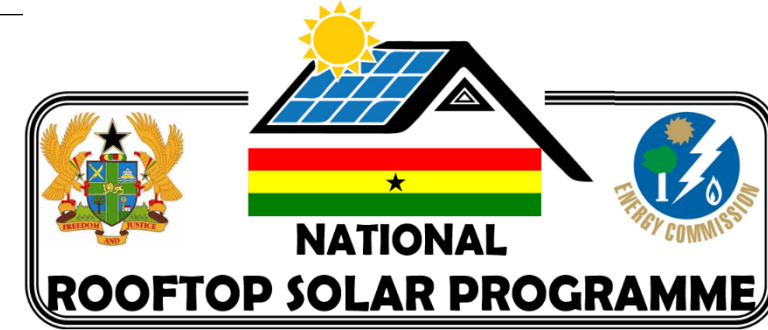
Email \_\_\_\_\_

Profession \_\_\_\_\_

Place of work \_\_\_\_\_

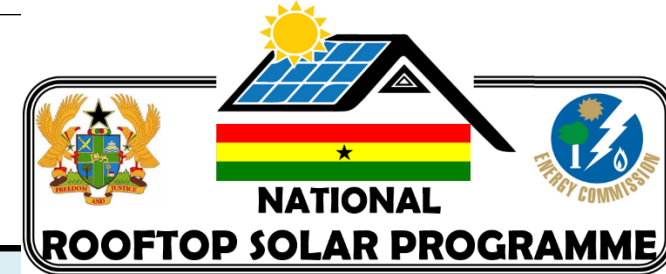


# INTEREST SHOWN IN THE PROGRAMME SO FAR (as at March, 2017)

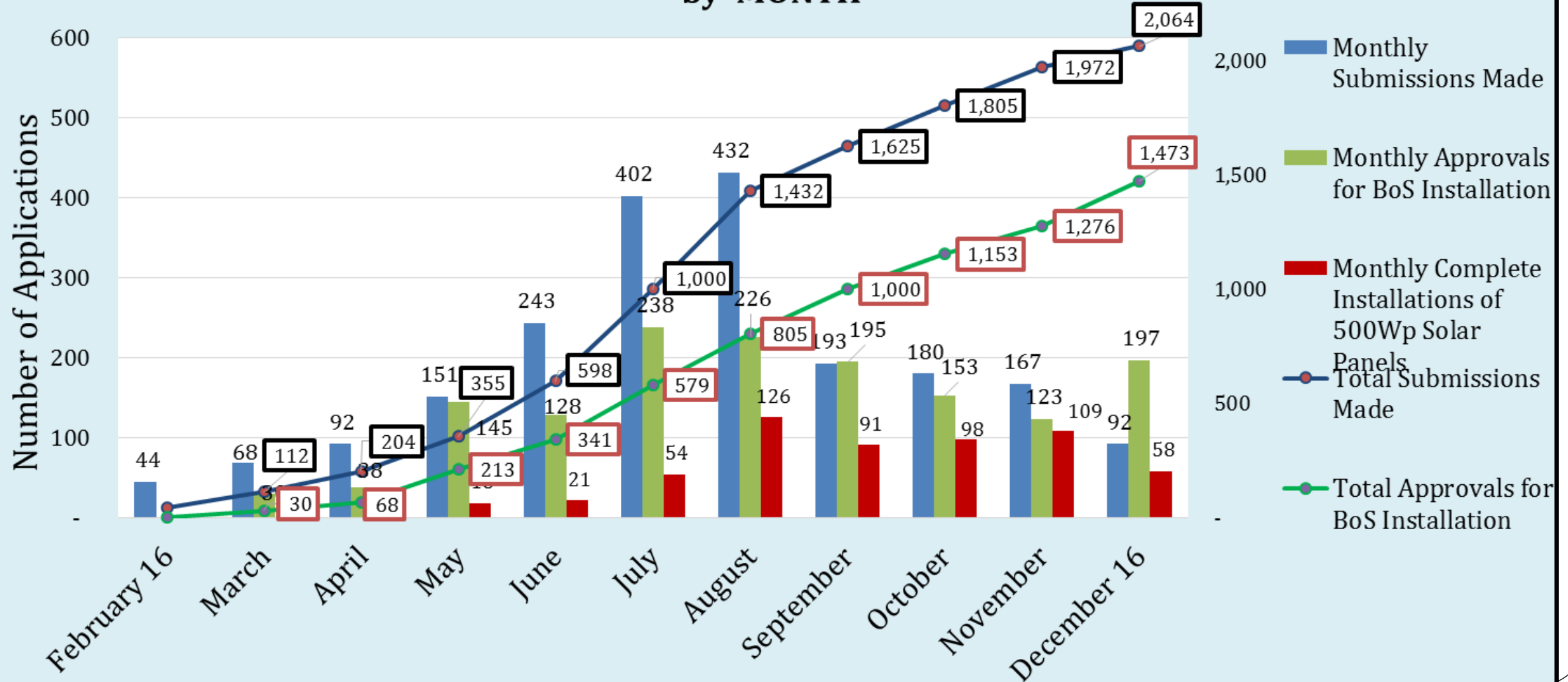


- ❑ **2,449** Home owners have applied to benefit from programme
- ❑ EC has given approval to **1,273** applicants (mostly in Accra) who do not have BoS to purchase and install the requisite BoS.
- ❑ **727** applicants have been given the max. 500Wp solar panels.
- ❑ The banks have expressed the interest to grant loan for applicants who meet their requirements (eg. umb, uniBank, afb, etc.)
- ❑ **105** Licensed solar vendors have signed agreements with the EC to supply and install systems
- ❑ EC has given permission to the banks and solar vendors to use EC's logo to advertise their products under the programme

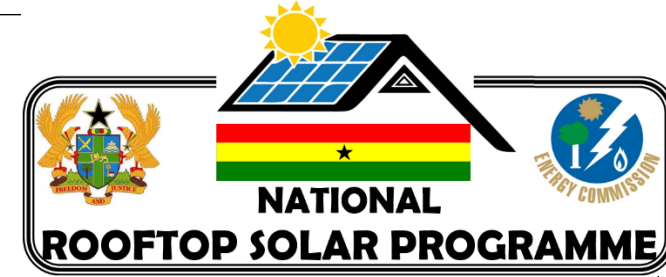
# Status



## APPLICATIONS FROM INTERESTED RESIDENTIAL APPLICANTS by MONTH

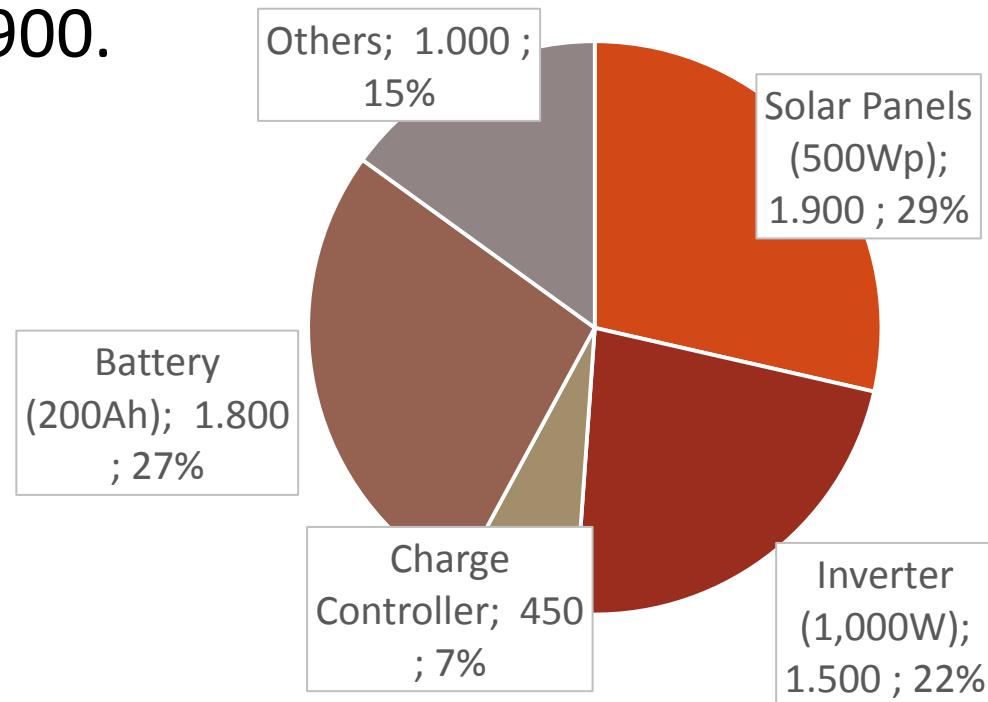


# COST OF 500Wp



Example:

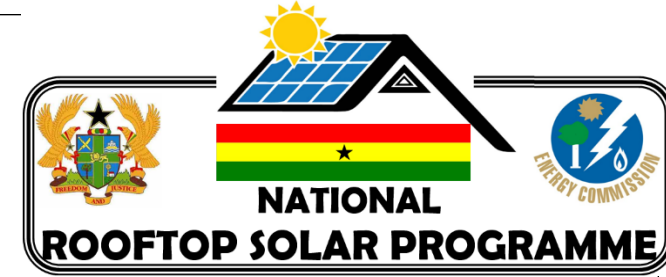
- A 500Wp solar PV system cost between GHC5,000 and 7,000.
- Subsidy is about GHC 1,900.



Appiah, F. K. (2016)

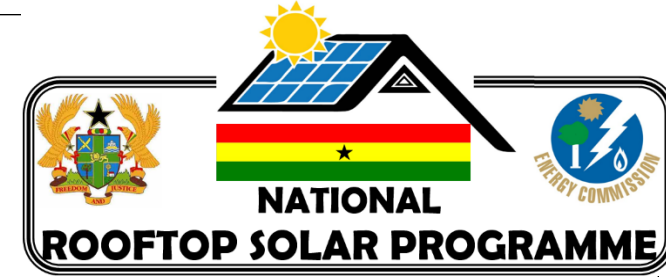
- Beneficiaries have to pay about 60-70% of total cost.
- Commercial Banks have created special facilities to help fund the BoS.

# Strategy for Low Income Group



- ❑ Redesign the Programme to also benefit the low income class.
  - ❑ The Subsidy for the Programme is up GHC 1,900.00 per beneficiary.
  - ❑ Use of low capacity or plug-and-play solar system for the low income class to also benefit from this Subsidy.
  - ❑ Currently, being piloted in 200 households in the Kwahu East District.
  - ❑ Nationwide implementation to begin in June 2017.

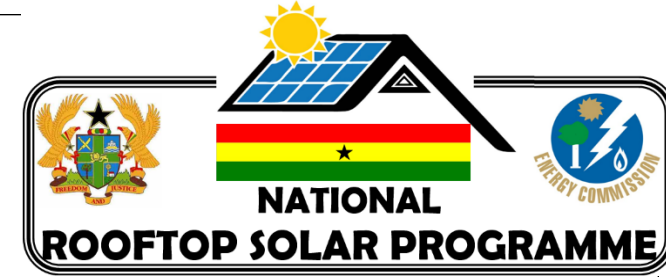
# CHALLENGES



- Logistical challenges for approval inspection resulting in low number of inspections per day.
- **Financial constraint** on the part of some of the beneficiaries – “expensive BOS”
- Competing needs/use of the Energy Fund
- Remoteness of the location of some of the residential facilities.
- Incomplete application forms & wrong and information provided by Applicants (eg. wrong contact numbers, etc.)
- Changing of choice of solar vendors where applicant, hence delays in the approval process.
- Failure on the parts of some installers to understand the terms and conditions stipulated under the contract agreement.

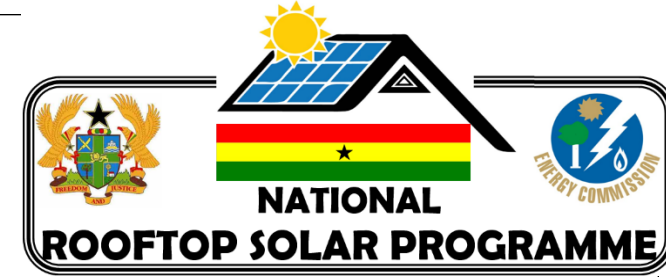
# FUNDING SUPPORT

# SUPPORT



- ❑ Funding has been primarily Government funding through the Energy Fund
  - ❑ Annual Work Programme is prepared and submitted to Ministry of Energy for approval.
- ❑ A request to financially support the Programme was made to **ALL 16** Development Partners in Ghana. No +ve feedback **yet**.
- ❑ Currently, going through the process to apply to the Green Climate Fund.
- ❑ We are about securing funding for the training of solar PV installers and upgrade of knowledge.

# Update on GCF Application



- ❑ Under the UNEP/UNDP/WRI GCF Readiness Programme in Ghana is providing financial and technical support to the Energy Commission to develop project proposal to secure funding from the Green Climate Fund (GCF).
- ❑ As part of the process, an Independent Consultant from **Climate and Development Solutions** was engaged to assist the Energy Commission (EC) develop the proposal to meet the GCF requirement.
  - ❑ stakeholders consultation to solicit inputs into the development of identified renewable energy projects.
  - ❑ Field visit were also undertaken to ascertain some of the issues flagged in the initial concept notes submitted to the National Designated Authority (NDA).
  - ❑ 2<sup>nd</sup> Mission was done in March, 2017



# Thank You for Your Attention

Contact:

Programme Director

0202205563; [rooftopsolar@energycom.gov.gh](mailto:rooftopsolar@energycom.gov.gh)

