



# GEF/UNIDO PROJECT

## “Promoting Renewable Energy for Productive Uses in Rural Areas in The Gambia”



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MOE



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# GEF/UNIDO 4 Project in The Gambia

- Promotes RE based mini-grids for productive uses in rural areas ( 2012-2015)
- Estimated total project cost US\$ 5.7million
- Grant funding of about US\$ 2million from GEF
- Co-financing US\$ 3.7million from GoG, UNIDO, EU and project developers (private sector)
- Implementing agency –UNIDO
- Key Partners: MOE/GREC, NEA & NAWEC

# Uses of GEF funds

- ❑ Developing 6 pilot projects to demonstrate the technical feasibility and economic viability of RE in selected rural areas that focus on energy for productive uses.
- ❑ Technical assistance to establish a legal and regulatory framework that will create a level playing field for RE technologies (EU Funding) .
- ❑ Technical assistance in institutional strengthening, capacity building and awareness raising and
- ❑ Technical assistance in the creation of RE markets and supporting the project management office.

# Key criteria for the selection of the 6 pilot projects

- A. The RE project installed will add to the GHG reduction over life time of the technology.
- B. RE Identified and installed will mean an additional energy access in the country.
- C. Payback period of the technology installed should be slightly longer than 5 years and or anticipated well short of the lifetime of the technologies being employed.
- D. Availability of co-financing by the project developer(s) – the project developers must provide 60 - 75% co-financing, in order to get the 25 - 40% grant from the GEF/UNIDO Project.

# Breakdown of the demonstration project financing and other indicators

Demo Projects	<u>GEF Grant</u>	<u>Project Developer</u>	<u>Project Size Kw</u>	<u>Estimate GHG Reduction nt Co2 Tonnes</u>	<u>Status</u>
1. Gamwind Ltd (2x450 kw wind power connected to Nawec)	30%	70%	90	13,856.3	Installed and commissioned
2. Mbololo Women Association Training Centre (8.3 kW solar –wind Hybrid system)	30%	70%	8.3	566.5	installed commissioned
3. QCELL (GSM( - (10 repeater stations across the country – 84 kw solar/wind Hybrid system)	25%	75%	84	6,756.5	Ongoing project
4. Nawec/Kaur hybrid mini grid – (60 kw)	30%	70%	60	2,206.3	Feasibility Study + Tender done . Now on grant contract process
4. Tanji fisheries Community – (450 kw wind power	40%	60%	450	6,928.1	Now Re-advertized for 2 <sup>nd</sup> time
6. Solar power for Horticulture – Slot Advertized 8.4kW	30%	70%	8.4	869.3	Call for full Proposal by shortlisted bidders
<b><u>Total</u></b>	<b><u>30%</u></b>	<b><u>70%</u></b>	<b><u>1,510.7</u></b>	<b><u>31183</u></b>	

# Mbolo Women Association Project: Solar PV- Wind Turbine Hybrid System



- Beneficiary of the GEF-UNIDO-GOTG Project
- Total Capacity – 8.3kW
  - **Wind Turbine:** 1.5kW
  - **Solar PV :** 6.8kW
- Received grant of 27.8% of total investment
- Project total cost: US\$ 185,000 + training of 30 Gambians on the system



# **Mbolo Women Association Project: Solar PV- Wind Turbine Hybrid System - Contd**

**ICT**



**Sewing**



**Soap and  
cosmetic  
handmade**



**Video club**



**Ice and cold  
water**





# GAMWIND PROJECT – 2 x450kVA

## Wind turbines

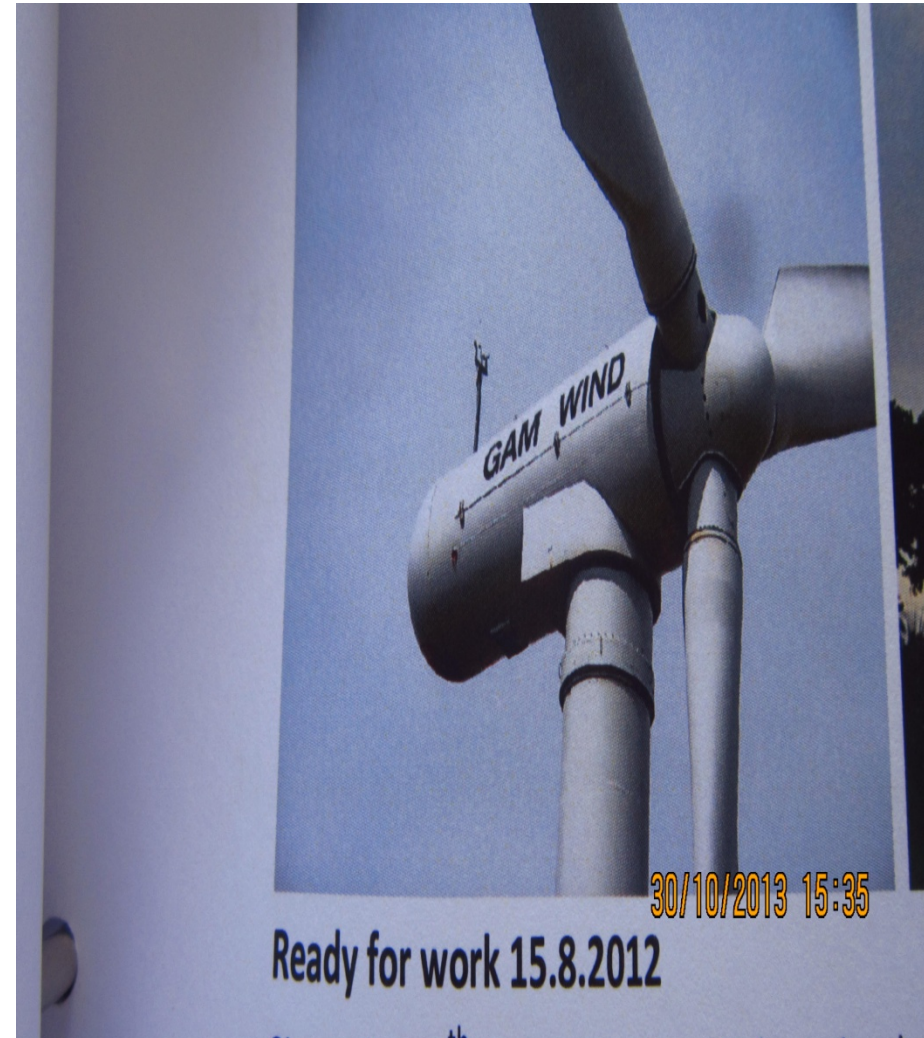
- One of the 6 demonstration projects of the GEF/ UNIDO Project
- Total Capacity -900kVA (2 x 450kVA)
- Received project grant of 30% of total investment
- Project total cost: US\$ 839,000 + cost of connecting to the grid



# GAMWIND PROJECT – 2 x450kVA

## Wind turbines -Contd

- NAWEC and Gamwind signed PPA – 18<sup>th</sup> November, 2010
- Work started in June, 2012
- 1<sup>st</sup> Wind turbine installed and operational – 15<sup>th</sup> July, 2012
- 2<sup>nd</sup> Wind turbine installed and operational – 15<sup>th</sup> August, 2012



# Gamwind Project –works

## Construction and Challenges



- No big crane of 15tonne in-country
- Difficulty in hiring a big crane from Dakar
- Interruption due to the heavy rains – making accessibility to the site difficult for the heavy crane





# Gamwind Project – Commissioning



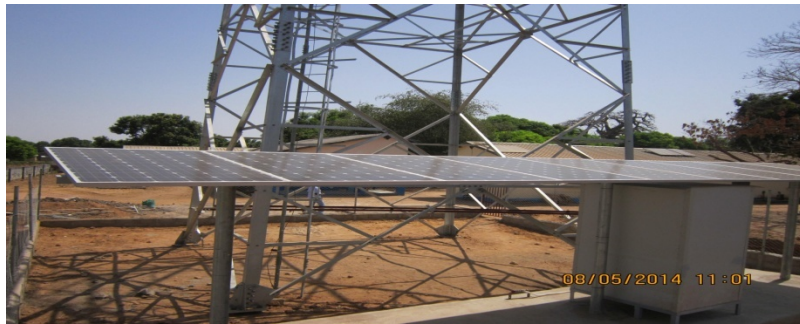
- 33kV OH –line -13<sup>th</sup> August , 2012
- 20/33kV Substation -13<sup>th</sup> August, 2012
- 1<sup>st</sup> wind Turbine -15<sup>th</sup> July, 2012
- 2<sup>nd</sup> Wind Turbine -15<sup>th</sup> August, 2012



# Qcell Project: Solar-Wind Repeater stations (84kW)

- Project total cost: US\$ 2.26million including towers
- Project grant: 25%
- As part of the project, Qcell will install solar –wind hybrid systems for 10 repeater stations in 10 rural communities across the country.
- The surplus power will be supplied to the health facility within each of the 10 communities
- The 10 sites are:
  1. Bondali
  2. Albreda
  3. Illiassa
  4. Kuntair
  5. Kuntaur
  6. Njau
  7. Ngeyen Sangal
  8. Karataba Tenda
  9. Bureng
  10. Garawol

# QCell Project: Solar-Wind Repeater stations





# Other demo projects

- NAWEC/Kaur Solar PV Hybrid System
  - Grant Contract negotiation in progress
- Tanji Wind Power for Ice Plant (450kW)
  - Re –advertized in April/May, 2014  
but no submission
  - Soon re-advertize for the 2<sup>nd</sup> time on  
local papers & UNIDO Website
- 8.4kW RE Project: Shortlisted bidders asked to  
submit full project proposals

# Other Project Components & Co-financing

<b>Component 2 –</b>	Strategy for scaling up of RE Investment	GEF Grant 90%	P/P Partnership 10%
<b>COMPONENT 3 –</b>	strengthening legal and regulatory framework for Renewable Energy sector	-	Fully funded by EU
<b>Component 4 -</b>	Capacity Building and Training - Train –the-Trainers RE Training -RE Curriculum Development	GEF Grant 90%	10% National Institutions
<b>Component 5 -</b>	Project Management Office	GEF Grant 70%	30% Gambia Government

# Key Problems and Lessons Learnt(GEF 4 Project)

- Problems of Co-financing.
- Interpretation of Contracts signed vs work Inspections.
- Costs of Renewable Energy (solar panels) on downward trend.
- Inadequate Local Capacity on RE.
- Appreciation of Renewable Energy beginning to surface in the Country.
- More interest from foreign investors than local /Gambian investors.

# GEF/UNIDO 5 Project – Funding Cycle

**Project Name:** “Greening the productive sectors in The Gambia: Promoting the use and integration of small to medium scale renewable energy systems in the productive uses”

**Project Budget:** US\$ 4.374 million

**GEF grant :** US\$ 1.319 million

**Co-financing:** to be mobilized from GoG, Project developers, Financial institutions, etc.

**Project total Capacity:** 1.2MW

## **Project components**

### **CP1: Development of strategy and regulation on the Integration of small –to-medium scale RE systems**

- development of national strategy, with targets, and regulation on the use and integration of RE systems in the productive sector
- Performance standards, permitting procedures and regulation on grid-connected RE systems

### **CP2: Demonstrating technical feasibility and promoting investment in RE**

- Total of 1.2 MW of RE would be installed based on solar & wind (0.4MW demo projects & 0.8MW as investment project)

### **CP3: RE projects entrepreneurship skills Development**

- RE project based entrepreneurship training modules for youth will be developed and series of training s will be conducted

Possible funding

Scenario:-

1. GEF would continue to provide Grant.
2. UNIDO to negotiate with local financial institutions and other International funding Agencies to provide soft loans to interested project developers
3. Project Developer(s) contribution.

# Opportunities

- Reasonable wind speed and good solar radiation
- RE Law enacted
- Standard PPA developed and Draft FIT
- Electricity Regulation in place-PURA
- Some experience in-country in both grid and non-grid solar & wind technologies
- Potential market for renewable projects in The Gambia

THANK YOU!  
Ala baraka! Jerejef!

