Experiences with policy instruments and IPP procurement processes for grid-connected RE in the ECOWAS region

Mohamed Youba Sokona
Renewable Energy Adviser

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Background on ECREEE-GIZ Cooperation

- Regional GIZ programme “Promotion of a climate-friendly interconnected power system in West Africa”
- The GIZ programme is the TA component of a larger programme between ECOWAS and the German bilateral cooperation (funding: BMZ, implementation: KfW & GIZ) supporting
  - the West African Power Pool (WAPP): regional electricity trade, energy efficiency in power distribution
  - the ECOWAS Regional Electricity Regulatory Authority (ERERA): regulation of regional power trade
  - the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREE): RE power generation
- Team based in Benin and Cape Verde
Objectives of the RE component

Promote grid-connected RE power generation through

- Support to the development and implementation of grid-connected RE projects through TA
- Documentation and dissemination of experience with existing and new “RE flagship projects“
- TA for improvement of the legal and regulatory environment for RE power generation
ECOWAS RE Policy (EREP) Grid Connected Targets

The EREP sets the following targets for grid connected RE:

• Increase the share of grid connected RE in the overall energy mix to **35% by 2020** and **48% by 2030**

• Increase the share of grid connected wind, solar, bioenergy and small hydro to **10% by 2020** and **19% by 2030**. Requiring development of **2.5 GW by 2020** and **7.6 GW by 2030**.

**Current Status**

- SH 225 MW
- Solar 30 MW
- Wind 27 MW
## Instruments in Use to Promote Grid Connected RE

<table>
<thead>
<tr>
<th>Countries</th>
<th>Feed-In Tariffs / RPO</th>
<th>Net-metering / Net-billing</th>
<th>Competitive Bidding</th>
<th>Direct Negotiations /PPP</th>
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<tbody>
<tr>
<td>Benin</td>
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<td>Burkina Faso</td>
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<td>Cabo Verde</td>
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<td>Cote d’Ivoire</td>
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<td>The Gambia</td>
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</tbody>
</table>

- ✓ Existing
- → Ongoing
- [X] Planned
Experiences with Net Metering

RE Laws of Cabo Verde, Ghana, Senegal and The Gambia provide for Net-Metering

<table>
<thead>
<tr>
<th>Countries</th>
<th>Maximum Capacity (kW)</th>
<th>Key Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabo Verde</td>
<td>100</td>
<td>• RE supply credited at retail tariffs</td>
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<tr>
<td></td>
<td></td>
<td>• No license required but system must be registered</td>
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<tr>
<td></td>
<td></td>
<td>• Regulation under review</td>
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<tr>
<td>Ghana</td>
<td>200</td>
<td>• RE supply credited at retail tariffs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• License required</td>
</tr>
<tr>
<td></td>
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<td>• 25 pilots systems with target of 200,000</td>
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<tr>
<td>Senegal</td>
<td>34</td>
<td>• Paid tariffs defined by Regulator</td>
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<tr>
<td></td>
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<td>• Technical restrictions</td>
</tr>
<tr>
<td>The Gambia</td>
<td>20</td>
<td>• Credit system at retail tariff</td>
</tr>
<tr>
<td></td>
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<td>• Only for commercial customers</td>
</tr>
</tbody>
</table>
Experience with FiTs – Ghana

- FiTs published in 2013 and 2014 for different RE technologies
- Based on Specific Technology Cost (STC) approach
- Capacity limit per project for Wind and Solar (50 and 20 MW)
- Distribution utilities obligated to purchase RE at or below FiTs
- More than 70 provisional licenses provided but only one 20 MWp Solar PV power plant built under the scheme

- FiTs guaranteed for 10 years => affect PPA bankability
- Concerns over the creditworthiness of off-takers (especially ECG that buys 72% of all power)
- Currency fluctuation risks
- Migrating from the FiTs to a competitive bidding process with first round launched end of 2015
Experience with FiTs – The Gambia

- Introduced FiTs for RE systems between 20kW and 1.5 MW
- So far only Solar PV eligible awaiting Policy direction for Wind and Biomass
- 15 years Standard PPA with indexation to local inflation and exchange rate
- Proposed calculation methods initially based on Avoided Cost Generation (ACG), but then the Specific Technology Cost (STC) was preferred
- System must be registered and certified by regulator
  - FiTs not officially published
  - Off-taker creditworthiness maybe a barrier
Experience with FiTs – Nigeria

- Initially introduced FiTs in 2008 for RE under Multi Year Tariff Order (MYTO)
- New FiTs regulations approved in November 2015 to procure 2 GW by 2020
- FiTs for project between 1 and 30 MW (caps of 5 MW for solar, 10 MW for wind and biomass and 30 MW for Small hydro).
- FiTs denominated in USD and fixed for 20 years
- Obligation of off-taker (bulk trade and Disco) to purchase up to pre-defined quota
  - Credit worthiness of off-takers
  - Exchange rate fluctuation
Experience with Public Private Partnerships

- Cabo Verde: **Cabeolica 26 MW Wind** power project is the result of a PPP between the Gov. of Cabo Verde, Electra (Utility) and InfraCo Africa.

- The Gambia: **The Tanji 900 kW Wind** power project resulted from a PPP between the Gov. of Gambia through a GEF-UNIDO fund and Gamwind Ltd

- Mali: **33 MW Solar PV** power project resulted from a PPP between Gov. of Mali, Scatec and Africa Power 1 (Under construction)
Overview of RE IPP Procurement Process in the Region

1st process completed in 2014, 2nd in preparation

EOI launched in 2014, shortlist completed, on-hold

On-going

On-going

In preparation
Selected experience with RE IPP Procurement Process - Senegal

- Process launched in 2013 to meet RE target of 20% by 2017 (~262 MW)
- Led by the Utility putting into competition 72 bidders with provisional licenses
- Not site specific but focused on Solar PV and Wind, no local content requirement
- One round with lowest price selected and offered to all
- No credit enhancement options
  - Led to the signing of 10 PPAs (330 MW – 150 Wind and 180 Solar)
  - Ground breaking of 2 project in 2016
  - Next procurement to be done by a steering committee led by the Regulator
Selected experiences with RE IPP Procurement Process - Mali

- Launched Q2 of 2015 for a total of 75 MW on two site (25 and 50)
- Steering Committee led by DNE with external support
- No Credit Enhancement option, Stated tax incentives
- 28 years Standard PPA
- One stage process, Multicriteria evaluation (Tech and Finan 50/50) – bids ranked based on highest score
  - Process in line with national procurement rules
  - Selection criteria can be deemed subjective
Selected experiences with RE IPP Procurement Process - Ghana

- Launch Q4 of 2015 for 20 MWp (first of several round); not site specific
- Steering Committee led by EC with external support (transaction advise)
- Possible Credit Enhancement option (at a fee)
- 20 Years Standard PPA
- Local content requirement of 20 percent
- Two stage process:
  - Pre-qualification – Tech and Financial criterion (Pass/Fail)
  - Evaluation – bids ranked based on lowest price (without CE first)

- Standardized, increase efficiency and transparency
- Increase certainty and confidence of bidders
- Potential for rapid deployment (within 2 years) and replicability
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“Promotion of a climate-friendly interconnected power system”
c/o ECOWAS Centre for Renewable Energy and Energy Efficiency
C.P. 288, Praia, Cape Verde
T +238 260 4656
E [mohamed.sokona@giz.de](mailto:mohamed.sokona@giz.de)
I [www.giz.de](http://www.giz.de) [www.ecreee.org](http://www.ecreee.org)

**Renewable Energy Advisor**
Mohamed Youba Sokona

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