
M.L Sompo Ceesay  
PURAA
Presentation

- Electricity sub-Sector in The Gambia
  - RE background
- RE Law development
- Capacity Building
National Electrification

Electrification Rate by Region
2008 - 2012

Regions of The Gambia

GBA
WCR
LRR
NBR
CRR
URR

GBOS/NAWEC

Rate of Electrification

2008
2010
2012
National Electrification

- Network more developed along the coast
- Lack of national transmission backbone
  - Limits large scale RE integration
## New Tariffs for 2011 – 1st April

### Electricity Services (GBA and Provinces)

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Current Price</th>
<th>NAWEC Tariff Application</th>
<th>PURA Approved Tariff</th>
<th>Approved % Increment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>6.18</td>
<td>9.15</td>
<td>7.20</td>
<td>16.50%</td>
</tr>
<tr>
<td>Commercial</td>
<td>7.20</td>
<td>9.43</td>
<td>8.60</td>
<td>19.44%</td>
</tr>
<tr>
<td>Hotel / Club / Industries</td>
<td>7.65</td>
<td>10.43</td>
<td>8.95</td>
<td>16.99%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>7.20</td>
<td>9.43</td>
<td>8.00</td>
<td>11.11%</td>
</tr>
<tr>
<td>Area Councils</td>
<td>7.20</td>
<td>9.43</td>
<td>8.70</td>
<td>20.83%</td>
</tr>
<tr>
<td>Central Government</td>
<td>7.20</td>
<td>9.43</td>
<td>8.70</td>
<td>20.83%</td>
</tr>
</tbody>
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<thead>
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<th>NAWEC Tariff Application</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Price Increase</strong></td>
<td></td>
<td></td>
<td></td>
<td>38.62%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17.62%</td>
</tr>
</tbody>
</table>

**Individual Band for Domestic consumers should be increase by 16.50% respectively**
## Tariff increase June 2012

<table>
<thead>
<tr>
<th>Customer Category</th>
<th>2011 Tariff</th>
<th>New 2012 Tariff</th>
<th>% increase</th>
<th>US $ /kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic (prepayment flat)</td>
<td>7.20</td>
<td>9.10</td>
<td>26%</td>
<td>0.26</td>
</tr>
<tr>
<td>Commercial</td>
<td>8.60</td>
<td>9.70</td>
<td>13%</td>
<td>0.28</td>
</tr>
<tr>
<td>Hotel / Club / Industries</td>
<td>8.95</td>
<td>10.40</td>
<td>16%</td>
<td>0.34*</td>
</tr>
<tr>
<td>Agriculture</td>
<td>8.00</td>
<td>9.10</td>
<td>14%</td>
<td>0.26</td>
</tr>
<tr>
<td>Area Councils</td>
<td>8.70</td>
<td>9.70</td>
<td>11%</td>
<td>0.28</td>
</tr>
<tr>
<td>Central Government</td>
<td>8.70</td>
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<td>11%</td>
<td>0.28</td>
</tr>
</tbody>
</table>

* VAT included

US $1 = D35
What are we paying for in each kWh?

- Transmission & Distribution Costs
- Gen Cost + Losses
- Subsidies for the Provincial operations
- Network Losses

<table>
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<tr>
<th>Dalasi/kWh</th>
<th>Domestic</th>
<th>Industrial</th>
</tr>
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<td></td>
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</table>

[Graph showing the distribution of costs for Domestic and Industrial users.]
RE Masterplan

- 2005 14 month study
  - Wind and solar measurement
  - 8 sites were chosen
  - Measurement for wind at 30m

- Results
  - Moderate wind speeds (coast)
  - Good solar irradiation
Wind Energy Measurements
Wind Energy

- Modest wind resources
- Mostly along the coast
  - Two pockets inland
Batakunku Initiative

- 2008 PURA approached by village
- Wanted to use wind for electrification
  - Sell surplus to the grid
  - Hard difficulty approaching utility
  - Everyone was inexperienced with grid tied RE especially wind energy
Grid Connected Renewable Energy

Community Driven Wind Project 2009
GAMWIND Pilot Project

- Project part funded by Govt
  - UNIDO grant
  - Private investors

- Two turbines
  - 450 kVA each
  - 510,000 MWh produced
  - Price D5/kWh (equivalent)
Skills Transfer / Know-how
Energy Management

- Licences issued to the Village Development Committee (VDC)

- VDC
  - Manages billing
  - Local jobs
  - Collects and deposits cash
  - Community managing energy services
    - Applications for connections
Lessons learnt

• Distributed generation using renewables
  – Wind speeds so far impressive (6-10m/s)

• Communities can reliably manage their own energy service

• Regulators can empower communities through licensing
  – Ownership, reliable
  – Grid tied renewables can help in rural electrification
Lessons Learnt (cont’d)

- Need for new Wind Energy Policy
- Development of Simplified RE PPA
  - Feed-in Tariffs
- More Wind Data measurement required
- Model can be replicated in other villages
  - Energy sold goes towards community projects
  - Poverty eradication
- Limited availability of Land
Legislation

- Ministry took it up to draft new law
  - EU funding
- PURA input
  - US experts also gave comments
  - Lessons
    - PPA standardised
    - FiT Model developed
- Net-metering not included
  - Huge potential
Harmonized Licensing Sequence

7 Step IPP Application

1. Contact with NAWEC (NAWEC must be interested)

2. Collect Application Form (FXX) from PURA including Guidelines

3. Request for Land if applicable

4. Conduction an Environment Impact Assessment (EIA) in line with NEA Guidelines and Procedure
   - Obtain Environment Clearance After the EIA (Mandatory)

5. Submit PPA, EIA, Feasibility Studies, Land Allocation Documents and a duly filled PURA Licence Application Form

6. PURA evaluates and submits your application with a Recommendation to the Hon. Minister
   - Any documents missing PURA will revert to the investor

7. Decision of the Hon. Minister is conveyed to the Applicant by
   - PURA
   - Licence Issued
Net-metering (Renewable)

- Allow small LV producers to be connected
- 2kW Pilot working
- 20kW solar PV installed @ Leo’s Hotel
  - [www.leos.gm](http://www.leos.gm)
  - Retail prices
Regulatory Experience: Lessons learnt

- Wind was a new potential energy source
  - Domestic / no indexation/ cheaper
    - D5/kWh (US $14 /kWh)
- Solar is now very competitive
  - Small scale grid connection has huge potential
    - US $17-19 /kWh
  - Grid Access must be made easier
- PPA negotiations should be simplified
- Monitor Technical issues
  - Hz deviations etc
Role of PURA in new RE Law

- Implement the regulatory framework to support renewable energy
- Within the legal framework, define the rules for pricing renewable electricity
- Calculate FIT each year, including announcing the indexed level of existing PPAs.
- Ensure NAWEC implement the rules in practice
- Check that claiming generators are really renewable
- Monitor progress to ensure (1) costs to consumers are within acceptable levels and (2) investment framework is sufficiently stable and attractive
- Issue generation licences.
- Dispute resolution between NAWEC and generators.
- Check that the cap has not been reached, announce once the cap is reached.
Feed in Tariffs - Main Features

- No extra cost to consumers:
- The initial support level to be determined by the avoided cost methodology (LFO/HFO).
- Eligible technologies: solar PV, wind, biogas, biomass. (Subject to review)
- Eligible scale: 20kW to 1.5MW.
- Above 1.5MW, can negotiate traditional PPA.
- Below 20kW: net metering.
Thank you

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