STATUS OF RURAL ELECTRIFICATION SITUATION IN GHANA

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Rural Electrification Background

1. **National Electrification Scheme (NES) policy** to extend the reach of reliable electricity supply to all parts of the country over a 30-year period from 1990 to 2020 launched in 1989.

   **NES objectives:**
   ✓ Increasing socio-economic development, create wealth & alleviate poverty, especially in the rural areas.
   ✓ Improve standard of living, especially in the rural areas.
   ✓ Trigger evolution of small-to-medium scale industries in rural areas.
   ✓ Create job opportunities in rural areas to curb rural-urban migration.


3. **Strategy**
   ✓ Grid Extension
   ✓ Off-grid RE Initiative (Stand Alone RE & Mini-grids)
   ✓ Self-help Electrification (SHEP 1, 2,3 & 4)
   ✓ Increasing generation capacity inclusive of utility-scale RE initiatives
RATIONAL FOR MINI-GRID IN GHANA

Over 200 islands and more than 2000 communities in 23 districts along the Volta lake not likely be hooked to the national grid by 2020. and therefore require decentralized electrification options to achieve the goal of universal access by 2020.
RATIONAL FOR MINI-GRID IN GHANA

Krachi East District

Afram Plains District

Legend
Community Status

-1500Elect

-1500Nat

-15000Nat

High Voltage Line

ROAD

Legend
Community Status
Electrification Status

No
Ongoing
Yes
HV LINES
ROAD

Aglakope Minigrid Project site
Status of Electrification

✓ National access rate in June 2016 is 82.34% (23% at start of NES in 1990)
✓ Rural access stands at 42%
✓ Over 2,700 solar systems installed in clinics and basic schools in remote off-grid communities.
✓ A total 70,000 solar lanterns distributed with 70% subsidy to replace kerosene lanterns.
✓ Five (5) RE-based mini-grids installed and energised at the cost of US$2.5m
✓ 38MW (grid and off-grid) RE installed capacity realized
✓ GIS-based planning system developed to accelerate attainment of universal access target by 2020
Pilot Mini – Grid Electrification Project

- Solar PV array
  - 25-54KWp
- Wind Generator
  - 2x5.5KWp
- Battery
  - 2Vx3,500/4,200 Ah
- Diesel/biofuel back-up generator
  - 30KVA
- Invertor
  - 6x48KVA
20MW Solar PV Plant At Mankoadze, CR

552 residential and non-residential connections
LED street/path lighting facility (30 per Community)
Off peak incentive scheme

Mini-grid plant & Dist. Networks for Kudorkope
**Investments and Way Forward**

- **Achieve Universal Access by 2020.**
- **$230m Ghana SREP Investment Plan**
  - 4 projects under SREP
    - ✔️ 55 Mini-Grid & 38,000 SHS
    - ✔️ 15,000 Net-metering
    - ✔️ 20-30MW utility scale Solar/wind Project
    - ✔️ Technical Assistance

<table>
<thead>
<tr>
<th>Potential Projects</th>
<th>Capacity (MW)/Units</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility-scale wind</td>
<td>150-300</td>
<td>3 projects realized.</td>
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<tr>
<td>Utility-scale solar</td>
<td>100-250</td>
<td>22.5MW developed</td>
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<tr>
<td>Small-Medium HP</td>
<td>150-300</td>
<td>Feasibility studies completed for 108MW</td>
</tr>
<tr>
<td>Biomass &amp; W2E</td>
<td>100</td>
<td>Biomass resource assessment underway</td>
</tr>
<tr>
<td>RE-Mini-grids</td>
<td>60</td>
<td>5 mini-grids developed</td>
</tr>
<tr>
<td>Solar lantern</td>
<td>2 million units</td>
<td>68,000 units distributed</td>
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<tr>
<td>Off-grid RE</td>
<td>40,000 units</td>
<td>Nearly 15,000 SHS installed</td>
</tr>
<tr>
<td>ICS</td>
<td>&gt;100,000</td>
<td>Action plan in place with timelines</td>
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Investments and Way Forward

- SECO – Expressed Support installation of 3 Additional mini grids
- USAID – Support Mini-grid electrification of Afram Plains District
- General Electric (GE) – Mini-grid electrification in the PRU District

Financing Plans

Public Private Partnership Arrangements
Multilateral & Bilateral Sources from Development Partners
Public Sector – Budgets & Concessional Loan Facilities
National Electrification Levy (electricity consumers)
Renewable Energy Fund
Internally Generated Funds