Over-View of Electricity Regulation in Tanzania

Presentation to the 1st Partnership Exchange
USAID/NARUC/East Africa Regional Regulatory Partnership

Eng. Godfrey H. Chibulunje
Commercial Manager – Electricity
EWURA
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Current Electricity Supply Industry Structure

- **EPPs**
- **TANESCO GEN.**
- **IPPs**
- **SPPs**

**IMPORTS:**
- Uganda, Kenya & Zambia

**TANESCO - Transmission, Distribution and Supply**

**CONSUMERS**

**ZECO**
Contemplated Electricity Supply Structure

Generation → Transmission → Distribution → Supply

- **Generation**: $G_1$, $G_n$
- **Transmission**:
  - $400kV$, $220kV$, $132kV$
  - Transmission System
- **Distribution**:
  - $33kV$
  - HV Customer
  - IPP Generation: IPP 1, IPP 2
- **Integrated Power System**: SPPs
Generation Mix 2013 in %

- Hydro: 50%
- Diesel: 30%
- Natural Gas: 20%
### Tanzania Energy Production 2013-2014

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>TANESCO</td>
<td>3,414,765</td>
<td>56.11%</td>
</tr>
<tr>
<td>Songas</td>
<td>1,291,930</td>
<td>21.23%</td>
</tr>
<tr>
<td>Symbion</td>
<td>430,811</td>
<td>7.08%</td>
</tr>
<tr>
<td>IPTL</td>
<td>423,289</td>
<td>6.96%</td>
</tr>
<tr>
<td>SPP</td>
<td>34,590</td>
<td>0.57%</td>
</tr>
<tr>
<td>Aggreko</td>
<td>429,363</td>
<td>7.06%</td>
</tr>
<tr>
<td>Imports</td>
<td>61,181</td>
<td>1.01%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,085,929</strong></td>
<td><strong>100%</strong></td>
</tr>
<tr>
<td>Grid Thermal Power Plants in Tanzania</td>
<td></td>
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<tr>
<td>---------------------------------------</td>
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<tr>
<td><strong>TANESCO OWN Power Plants</strong></td>
<td></td>
<td></td>
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<tr>
<td>Ubungo Gas Plant I 102 MW</td>
<td>102 MW</td>
<td></td>
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<tr>
<td>Ubungo Gas Power Plant 2</td>
<td>105 MW</td>
<td></td>
</tr>
<tr>
<td>Tegeta Gas Power Plant</td>
<td>45 MW</td>
<td></td>
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<tr>
<td>Diesel Power Plants</td>
<td>7.4 MW</td>
<td></td>
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<tr>
<td><strong>Long Term PPA</strong></td>
<td></td>
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<tr>
<td>IPTL 103MW -IPP</td>
<td>103 MW</td>
<td></td>
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<tr>
<td>Songas (NG) 189MW</td>
<td>189 MW</td>
<td></td>
</tr>
<tr>
<td>Small Power Plants (SPP ≤ 10 MW)</td>
<td>24.5 MW</td>
<td></td>
</tr>
<tr>
<td><strong>Short Term Emergency Power Contracts</strong></td>
<td></td>
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<tr>
<td>Symbion Gas P/Plant 112MW-IPP</td>
<td>112 MW</td>
<td></td>
</tr>
<tr>
<td>AGGREKO (Dar es Salaam)</td>
<td>100 MW</td>
<td></td>
</tr>
<tr>
<td>Symbion Dodoma</td>
<td>55 MW</td>
<td></td>
</tr>
<tr>
<td>Symbion Arusha</td>
<td>50 MW</td>
<td></td>
</tr>
<tr>
<td>Plant Name</td>
<td>Fuel</td>
<td>Capacity in MW</td>
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<tr>
<td>TANESCO Mwanza</td>
<td>HFO</td>
<td>60</td>
</tr>
<tr>
<td>TANESCO Kinyerezi I</td>
<td>Gas</td>
<td>150</td>
</tr>
<tr>
<td>Ngaka I (IPP)</td>
<td>Coal</td>
<td>120</td>
</tr>
<tr>
<td>Wind East Africa I (IPP)</td>
<td>Wind</td>
<td>50</td>
</tr>
<tr>
<td>Wind East Africa II (IPP)</td>
<td>Wind</td>
<td>50</td>
</tr>
<tr>
<td>Geo Wind(TANESCO/NDC)</td>
<td>Wind</td>
<td>100</td>
</tr>
<tr>
<td>TANESCO Kinyerezi II</td>
<td>Gas</td>
<td>240</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>770</strong></td>
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LEGAL FRAMEWORK

National Energy Policy, 2003

Energy and Water Utilities Regulatory Authority Act

Rural Energy Act (2005)

• Establishing REA & REF

The Electricity Act, 2008
Main Objectives of the Electricity Act

• Facilitation and Regulation of electricity supply services
  ➢ generation,
  ➢ transmission,
  ➢ distribution,
  ➢ supply and use of electric energy

• Provide for cross-border trade in electricity

• Planning and Regulation of Rural Electrification
Main Objectives ......

- Provides Responsibilities of the Minister and the Authority
- Provides the Powers of the Authority
- Defines Functions of the Authority
- Outlines Specific Duties and Responsibilities of the Authority
Powers of the Minister

Section 4(1)

- develop and review policies in ESI
- prepare, publish policies, plans and strategies for development of ESI
- re-organise and restructure the ESI (attracting private sector participation) see also specific provision in §.40 & 41 - Authority consulted
- cause through the REA preparation, revision and publishing of the Rural Electrification Plan and Strategy;
- formulate policies to facilitate import and export of Electricity
- coordinate emergency responses in collaboration with the Authority and Licensee
Powers of the Authority

The Authority have powers to:
1. Carry out Licensing Activities
   • award, renew, modify, suspend or revoke
2. Approve and enforce tariffs and charges
   • Tariff Methodology
3. Approve Licensing Conditions
4. Approve initiation of procurement of New Electricity Supply Installations
Functions of the Authority in relation to electricity supply (§6(1));

- protect customer's interests through the promotion of competition;
- promote access to, and affordability of, electricity services particularly in rural areas;
- promote least-cost investment and the security of supply for the benefit of customers;
  - Enforce adherence to PSMP (Follows §5(d))
- promote improvements in the operational and economic efficiency of the electricity supply industry and efficiency in the use of electricity;
Functions of the Authority (contd.)

- Promote appropriate standards of quality, reliability and affordability of electricity supply
- Consider the effect electricity supply industry on the environment
- Protect public from the dangers activities in the electricity supply industry
- Promote the health and safety of persons
Renewable Energy Enabling Environment

To increase the use of Renewable Energy the following needs to be in place:

- Specific Policy and Legislation for Renewable Energy Development
- Rules and Guidelines
- Standards and Enforcement of Compliance
- Promotion of Renewable Energy

EWURA needs to support or play its regulation oversight towards increased development of Renewable Energy with other players.
Develop Rules and Guidelines

- for Procurement of Renewable Energy Projects
- translate the policies and legislation into rules, and guidelines
- for licensing based on share of RE in accordance with Master Plan (Competition VS Sole Sourcing)
- Develop Rules for Tariff regime for Renewable Energy

Need for Technical Standards and Enforcement

- cause to be established Technical Standards for Renewable Energy materials and Equipment
- Inspection and protect against substandard materials and dumping of obsolete or environmentally unfriendly products
- promote local capacity to manufacture, install and maintain RE equipment and materials
Policies and Legislation

Promote Renewable Energy

- Increase technical Know-how with other Key Players
- Include Renewable Energy in various codes (Building Code)
- promote local capacity to manufacture, install and maintain RE equipment and materials
- Increase Public Awareness
- Suitable REFIT for various technologies
- Recommend Financial Enhancement facilities
## SPP Framework Documents

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<tr>
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<th><strong>Main grid</strong></th>
<th><strong>Mini-grid</strong></th>
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<tbody>
<tr>
<td><strong>Standardized PPA</strong></td>
<td>Standardized Power Purchase Agreement for Purchase of <em>Grid-Connected</em> Capacity and Associated Electric Energy Between Buyer and a Small Power Project</td>
<td>Standardized Power Purchase Agreement for Purchase of <em>Off-Grid</em> Capacity and Associated Electric Energy Between Buyer and a Small Power Project</td>
</tr>
<tr>
<td><strong>Tariff methodology</strong></td>
<td>Standardized Tariff Methodology for the sale of Electricity to the Main Grid in Tanzania Under the Standardized Small Power Purchase Agreements.</td>
<td>Standardized Tariff Methodology for the Sale of Electricity to the Mini-grids Under the Standardized Small Power Purchase Agreements</td>
</tr>
</tbody>
</table>
• Includes standardized forms |  

<table>
<thead>
<tr>
<th><strong>Process rules</strong></th>
<th><em>Rules</em> for Developers of Small Power Projects (SPP) in Tanzania</th>
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<tbody>
<tr>
<td><strong>Interconnection Guidelines</strong></td>
<td>Guidelines for Grid Interconnection of Small Power Projects in Tanzania (Parts A, B, C)</td>
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<tr>
<td><strong>Interconnection rules</strong></td>
<td>◊ <em>Rules</em> for Grid Interconnection of Small Power Projects (Not Yet provided)</td>
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<tr>
<td><strong>Annual Tariff calculations</strong></td>
<td>Detailed Tariff Calculations under the SPPA for the Main Grid for each year</td>
<td>Detailed Tariff Calculations under the SPPA for the Mini-grids for each year</td>
</tr>
</tbody>
</table>
CONCLUSION

- The role of Regulator is crucial to ensure there is a fair play (procurement and standards)
- Tariff structures can be a catalyst for RE
- Capacity Building necessary for all players
Thank You and Welcome

Website: www.ewura.go.tz