Energy Statistics in Zimbabwe

Presented at the Southern Africa Renewable Energy Statistics Workshop
Mbabane, Swaziland
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Introduction

- Zimbabwe collects, compiles and publishes energy statistics from the following sources:
  - Administrative Records
  - Censuses and Surveys
Administrative Sources

• Electrical Energy produced and distributed by source:
  - Hydro
  - Thermal
  - Independent Power Producers (IPPs)
  - Imports
  - Exports

• Electrical Energy used by broad group:
  - Agriculture
  - Mining and Quarrying
  - Manufacturing, Transport and Construction
  - Domestic Consumers
  - Others
Establishment-based Surveys

• Census of Industrial Production (CIP) covers
  • Quantities and values of the following
    • Electrical energy used
    • Coke
    • Coal
    • Charcoal
    • Petrol
    • Diesel
    • Lubricants
    • Oils
    • Other liquid fuels
    • Gas
Establishment-based Surveys

• Establishments covered are in:
  • Mining and Quarrying
  • Electricity and Water Production and Distribution
  • Manufacturing
  • Construction
Household-based Surveys

• Every 10 years a population census is carried out in Zimbabwe and some of the housing characteristics estimated are:
  • Proportion of dwelling units with households with electricity
  • As a main source of heat for cooking, the proportion of households that used:
    • Wood
    • Paraffin
    • Electricity
    • Gas, Coal or some other form of fuel
Household-based Surveys

• Other surveys carried out every 5 years obtaining the same characteristics are:
  • Labour Force Survey (LFS)
  • Poverty, Income, Consumption and Expenditure Survey (PICES)
Renewable Energy Sources in Zimbabwe

• The following are the sources of renewable energy in Zimbabwe:
  ▪ Fuelwood and sawdust
  ▪ Bagass
  ▪ Hydropower
  ▪ Charcoal
  ▪ Solar
  ▪ Biogas
  ▪ Wind energy (Masvingo)
  ▪ Ethanol (Chisumbanje)
Small Hydropower (SHP) Development

• Potential for SHP of about 200MW exists on both irrigation dams and perennial rivers especially in the Eastern Highlands for both grid-connected and off grid systems

• Current government policy is that all water bodies should be exploited and all new dams should have provision for power generation
CURRENT GOVERNMENT INITIATIVES

• Gairezi Small Hydropower Plant 30 MW run-of-the-river
• Manyuchi Dam (1.26Mw) Mini-hydropower project
• Ruti Dam (0.96Mw) Mini-hydropower project
CURRENT PRIVATE SECTOR INITIATIVES

- Nyangani Renewable Energy Projects include:
  - Nyamhingura 1.1Mw
  - Duru 2.2Mw
  - Pungwe A, B and C

- Kupinga Renewable Energy (Pvt) Ltd
Solar Energy

- Solar energy potential of Zimbabwe is relatively high, with an average 300 days or 3000 hours of sunshine per year.
- A number of projects to promote thermal and electric applications have been supported over the years, by government, donors, NGOs and the private sector.
PLANNED SOLAR PROJECTS

• SOLAR PV POWER PLANTS in GWANDA (100 MW), PLUMTREE (100 MW), MUNYATI (100 MW) AND ZVISHAVANE (2 MW)
• MARONDERA SOLAR PV POWER PLANT (150MW) by De Green Rhino
Biomass Power Generation

- Bagasse and timber wastes are used to fire boilers to produce steam which can be used for electricity generation.
- The electricity is used internally but excess is exported to the national grid

<table>
<thead>
<tr>
<th>Plant owner</th>
<th>Plant Name</th>
<th>Capacity</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triangle Ltd</td>
<td>Triangle Plant</td>
<td>45Mw</td>
<td>Operational, uses bagasse</td>
</tr>
<tr>
<td>Hippo Valley Estates</td>
<td>Chiredzi Sugar Mill</td>
<td>33Mw</td>
<td>Operational, uses bagasse</td>
</tr>
<tr>
<td>Green Fuel</td>
<td>Chisumbanje</td>
<td>18Mw</td>
<td>Operational, uses bagasse</td>
</tr>
<tr>
<td>Border Timbers</td>
<td>Charter Plant</td>
<td>0.5Mw</td>
<td>Operational, uses wood waste</td>
</tr>
</tbody>
</table>
Challenges