SAPP DSM and ENERGY EFFICIECNY ACTIVITIES

Readlay Makaliki (ZESCO)
SAPP DSMWG

UNECE GEE21 Geneva, Switzerland
18 April 2013
KEY AGENDA ITEMS

- Member Utilities
- SAPP Objectives
- Demand and Supply Status
- Energy Mix
- Projected Demand Vs. Current Capacity
- Energy Efficiency Drivers
- EE & DSM Activities
- Challenges/Opportunities
MEMBER UTILITIES

- ESKOM – South Africa
- EDM, HCB - Mozambique
- ZESCO, CEC, LHP - Zambia
- SNEL – Congo DR
- ENE – Angola
- ESCOM – Malawi
- TANESCO – Tanzania
- NAMPOWER – Namibia
- BPC – Botswana
- ZESA – Zimbabwe
- SEC – Swaziland
- LEC – Lesotho
MEMBERSHIP

- Located in country that was a Southern African Development Community (SADC) member by Sept 1994

- Operating Members
  Are members who are signatories of all principal documents governing SAPP and have their system interconnected internationally with at least one member. They are responsible for meeting all policy procedures guidelines established by SAPP

- Non-Operating Members
  These are members who are signatories to only one SAPP Principle document Inter-Utility Memorandum of Understanding. They participate in all activities except those related to operation of the power pool.
1. Provide a forum for the development of a world class, robust, safe, efficient, reliable and stable interconnected electrical system in the southern African region.

2. Co-ordinate and enforce common regional standards of Quality of Supply; measurement and monitoring of systems performance.

3. Harmonise relationships between member utilities.

4. Facilitate the development of regional expertise through training programmes and research.

5. Increase power accessibility in rural communities.

6. Implement strategies in support of sustainable development priorities
# DEMAND AND SUPPLY SITUATION

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<td><strong>TOTAL SAPP</strong></td>
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<td><strong>57,182</strong></td>
<td><strong>51,702</strong></td>
<td><strong>53,833</strong></td>
<td><strong>7,709</strong></td>
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<td><strong>Total Interconnected SAPP</strong></td>
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<td><strong>53,722</strong></td>
<td><strong>48,792</strong></td>
<td><strong>50,636</strong></td>
<td><strong>7,079</strong></td>
<td><strong>-3.8%</strong></td>
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ENERGY MIX

- Coal: 80%
- Gas: 14%
- Hydro: 4%
- Other: 1%
- Oil: 1%

309 TWh - 2010
1. All excess capacity in the SADC/ SAPP Region has been depleted and at peak hours it’s difficult to import power from member utilities.

2. Electricity demand strongly correlated to economic growth

3. The growth in electricity demand is mainly driven by the following:
   - Growth in agriculture
   - Rural electrification projects (IAES)
   - New mining activities
   - New manufacturing and
   - Housing estate projects

4. Reduce the carbon footprint by investing in EE and REs
In mitigating power deficit SAPP embarked on EE Projects and DSM

1. Energy Saver Lamp distribution (utility driven)
2. Solar Water Heater Project
3. Hot Water Load control (Ripple Control)
4. Commercial Lighting
5. Prepaid meter Installation
6. Investments in REs (Solar, Small hydros, Wind Farms)
CFL Program saving up to 2,045 MW from 2009 to date
Surpassed target of 1,500 MW
## Utility CFL Target Savings for 2013

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<th>No.</th>
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<th>Utility</th>
<th>CFL Target for 2013, MW</th>
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<td>ZESCO / CEC/LHPC</td>
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<tr>
<td>12</td>
<td>Zimbabwe</td>
<td>ZESA</td>
<td>203</td>
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</table>

**TOTAL SAPP** 1,030
Solar Water Heater Program Update

- **Savings (48.5 MW)**

- **Savings reported from:**
  - Eskom – 48 MW
  - ZESCO – 0.5 MW

- **Target savings are 500 MW between 2013 and 2015**

- Program being mostly used on mass roll outs on existing building and new buildings
Hot Water Load Control Update

- Savings Realised to date (211 MW)

- Savings reported from:
  - Eskom – 129 MW
  - BPC - 40 MW
  - ESCOM – 21 MW
  - Other Utilities – 31 MW

- Target savings are 400 MW between 2011 and 2015

- Mainly remote ripple control programs
Virtual Power Station - Where is SAPP?

2012 Actual vs. Target

- **CFL** = 2045 MW
- **HWLC** = 211 MW
- **SWH** = 48.4 MW
- **CL** = 42 MW

2,305 MW installed vs. 3,200 MW target (72%)

- **CFL** = 136%
- **HWLC** = 70%
- **SWH** = 12%
- **CL** = 4%
Virtual Power Station – Status

- Overall success of 72% (2,305 MW) achieved in 3 years.

- Target is to implement 1,920 MW from 2013 to 2015.

- Aggressive / Proactive utility action to be pursued for the remaining programs. (by all utilities)

- Experience has shown that the easier the program is to implement the faster the success rate (eg 136% implemented for the CFL program)

- M& V critical for validation of programs
Summary DSM Activities – CFL & M&V

1. SAPP CFL specifications to be updated (Need to avoid sub standard products)

2. SAPP Guidelines on Measurement and Verification to be developed using existing references

3. Capacity Building / Workshop for utilities on Measurement and Verification needs to be pursued.
SAPP Energy Efficiency Framework


2. Task Team formed to finalise framework (16-17 April, ZESA Zimbabwe)

3. Involvement of private sector participation and ESCOs in the Framework to be highlighted
1. SAPP member utilities have embraced EE and RE Programmes

2. However most DSM Programs are hindered by financial constraints

3. Need to create an enabling environment for RE and EE development and deployment (Policy)

4. Through Economic Commission for Africa (ECA), SAPP requests assistance in capacity building and sharing the UNECE experiences to accelerate Energy Efficiency programmes in member countries
Thank you!