SE4ALL and the ECOWAS Sustainable Energy Policy and Enabling Environment Program
Regional Sustainable Policies and National Action Plans

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Abidjan, 25 March 2015
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The Role of Targets

- Provide a **key signal to investors, manufacturers, gov’t agencies, etc.**
- **Mobilize actors and stakeholders**
- **Help attract investment**
- Provide a **clear vision**

- **Targets are more about defining expectations than predicting the future**
- **The key is setting the direction of travel and building momentum among stakeholders**
The Role of Targets

Setting appropriate targets

– Paper targets are meaningless: targets must be supported by concrete measures, policies, actions

– Targets need to be validated with stakeholders

– Long-term targets should be anchored by shorter, interim targets (2020, 2025, 2030, etc.): helps build credibility and momentum

– Regular reporting and monitoring is key: status reports

– Coherence with regional RE and EE policies
Institutional Landscape
Achieving Institutional Clarity

• Which public entities are responsible for converting RE+EE targets into specific national policies and measures?
• Do these agencies have a clear mandate?
• Are there conflicting/overlapping mandates? How can this be resolved?
• Do existing agencies have sufficient resources? Where are the gaps & weaknesses?
• Are new entities needed?
  – If yes, which entities can provide a valuable template?

→ Achieving institutional clarity can strongly support target achievement.
Economic and Fiscal Aspects

- **Economic Price Signals**
  - Do prices reflect costs?
    - Are subsidies targeted?
    - Do they favour or hinder RE and EE?
    - Are fossil fuels subsidised?

- **Fiscal policy**
  - Does fiscal policy help (or hinder) RE+EE?
  - Tax exemptions (e.g. VAT)?
  - Exemption from import duties?

→ Achieving targets is much easier/likelier when the overall economic and fiscal frameworks are aligned
Regulatory framework

• Does current energy planning include RE+EE?
  – Thinking beyond big hydro

• Framework for Independent Power Producers (IPPs):
  - Can they connect and sell to the national grid?
  - How are Power Purchase Agreements (PPAs) established & allocated?
  - Are there standard PPAs, or are they negotiated via bilateral contracts?
  - Etc.
Framework for off-grid electrification and access?

- Is there a national energy master plan for off-grid regions? Strategy for rural electrification? For solar home systems/lamps?
- New business models? Concessions, tenders, etc.?
- Strategies for cook stove deployment?
Information, Education, Training, Awareness Raising

• Energy information
  – National Statistics
  – Energy resource maps (wind, hydro, solar ...)

• Education and Training for energy professionals
  – Trades people
  – Engineers and technicians for RE, EE
  – Finance and business training
  – Awareness raising for small businesses and industries
  – Opportunities for partnership with existing educational institutions
Renewable Energy Policies

- Grid connection and dispatch rules
- Bilateral contracts
- Tenders/Auctions
- Feed-in Tariffs (FIT)
- Net Metering
- RE Mandates (i.e. RPSs)?
- Are other support measures being considered (e.g. VAT exemptions, grants, low-interest loans)?
Good practices for On-Grid RE Policy

1. Long-Term RE Targets (e.g. 10-15 years)

2. Cost-based PPAs

3. Clean Grid Connection Rules (dispatch, curtailment, etc.)

+ De-risking tools:

→ Guaranteed Purchase (Take or Pay)
→ Priority Dispatch of RES-E
→ Currency de-risking
→ Low-interest loan facility/credit guarantees/risk insurance
Measures relating to Cooking

• Sustainable Forest Management
• Charcoal production, transport
• Improved wood/charcoal stoves
• LPG for cooking
• Alternative cooking technologies
  – Modern biomass fuels: pellets, biogas, ...
  – Solar cooking
Good Practices in Energy Efficiency Policy:

• ECOWAS policy framework: Regional Energy Efficiency Policy

• Flagship initiatives:
  – Lighting, cooking, electricity distribution, buildings, standards and labels, industry, finance

• Necessity for public action:
  – Public procurement
  – Phase-out and substitution strategies
  – Raise EE standards for energy using equipment
Energy Efficiency Measures: 

**Lighting**

- Regional strategy for efficient lighting
  - Minimum energy performance standards (MEPS)
  - Supporting policies and measures
  - Monitoring, verification and enforcement (MVE)
  - Environmentally sound management

- Which elements of the regional strategy are already in place?

- Options for massive roll out?
  - Utility based? Carbon credits? ...
Energy Efficiency: 

*Electricity Grid losses*

1. Diagnostic study

2. National power sector round table
   - Political and technical consensus
   - Utility, Ministry, Regulator, Investors/banks

→ Combined programme:
   - Technical losses: infrastructure, maintenance, operations
   - Commercial losses: non payment and theft
   - Customer relations: billing, ...
Energy efficiency: 

**Buildings**

- Regulatory framework
  - Integrate energy into building code
  - Organise effective permitting and inspections procedures

- Develop model designs for small buildings

- Flagship projects: public buildings and publicly accessible buildings

- Training on energy efficiency in buildings
  - Architects, designers, engineers, trades people
  - Building users and owners

- Financial instruments for building EE
Energy efficiency: Industry

1. Locate and quantify energy use
   • Where is energy used?
     – Cement, canning, hotels, ...
   • Which technologies use most energy?
     – Cross cutting technologies? Motors, boilers, ...
     – Industry specific technologies? Cement kilns, ...

2. Mobilise appropriate technical expertise

3. Identify technico-economic potential

4. Develop public policy tools to realise potential
   – Fiscal, regulatory, economic, financial (ESCO), ...
Questions on measures?
National RE+EE scenarios:

What are scenarios for?

- Illustrate the consequences of specific measures
- Stimulate discussion among stakeholders
- Facilitate the evaluation of different options
What a scenario consists of

**IF**

public authorities adopt *measures* A, B and C, that have *impacts* L, M and N

**THEN**

the *consequences* (energy, economic, environmental, jobs, ...) might be X, Y and Z
Use of Scenario

Baseline → Discuss with stakeholders → Produce scenario → NEEAP+NREAP measures

Estimate impact → Opportunites, gaps → ECOWAS regional policy framework
ECREEE Scenario tool

• What it does
  – Create a numeric illustration of a national energy trajectory, consequent to execution of national action plans

• How it is made
  – Simple, modular EXCEL spreadsheet
  – Easy to use, easy to modify to fit national conditions

• What it does not do
  – NOT an energy or power sector planning tool
  – NOT a forecasting tool
### How to use the scenario tool:

**Step 1, Essential national data**

<table>
<thead>
<tr>
<th>Name of country</th>
<th>Grid losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>RE (hydro, wind, PV):</td>
</tr>
<tr>
<td>GDP</td>
<td>current generation</td>
</tr>
<tr>
<td>Currency name, exchange rate</td>
<td>technico-econ potential</td>
</tr>
<tr>
<td>Power system: capacity, generation, tariff, % of access</td>
<td>Baseline year</td>
</tr>
<tr>
<td></td>
<td>Target years for implementation of action plans</td>
</tr>
</tbody>
</table>
How to use the scenario tool:

Step 2, Optional data

→ Review all other parameters, adjust as appropriate

• Demography, economics

• RE+EE
  – Technico-economic potential, national conditions
  – Investment and operating costs

• Cooking:
  – National options: LPG, improved wood/charcoal, modern biomass, solar ...
  – Costs, technical parameters, ...
## Baseline scenario ("Baseline") for the power sector

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2018</th>
<th>2023</th>
<th>2028</th>
<th>2033</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual electricity generation (GWh)</strong></td>
<td>4'000</td>
<td>5'105</td>
<td>6'516</td>
<td>8'316</td>
<td>10'613</td>
</tr>
<tr>
<td>of which renewable generation (GWh)</td>
<td>311</td>
<td>311</td>
<td>311</td>
<td>311</td>
<td>311</td>
</tr>
<tr>
<td><strong>Value of electricity generation (000 000 Euro)</strong></td>
<td>800</td>
<td>1'021</td>
<td>1'303</td>
<td>1'663</td>
<td>2'123</td>
</tr>
<tr>
<td><strong>Value of fossil fuel consumption (000 000 Euro)</strong></td>
<td>369</td>
<td>479</td>
<td>620</td>
<td>800</td>
<td>1'030</td>
</tr>
<tr>
<td><strong>Rate of access to electricity</strong></td>
<td>40.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Scenario NREAP - NEEAP - SE4ALL

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2018</th>
<th>2023</th>
<th>2028</th>
<th>2033</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Additional renewable electricity generation (GWh)</strong></td>
<td>0</td>
<td>561</td>
<td>1'495</td>
<td>2'430</td>
<td>2'430</td>
</tr>
<tr>
<td><strong>Value of renewable electricity generation (000 000 Euro)</strong></td>
<td>0</td>
<td>112</td>
<td>299</td>
<td>486</td>
<td>486</td>
</tr>
<tr>
<td><strong>Savings in electricity consumption (GWh)</strong></td>
<td>0</td>
<td>666</td>
<td>1'685</td>
<td>2'799</td>
<td>3'806</td>
</tr>
<tr>
<td><strong>Value of savings (000 000 Euro)</strong></td>
<td>0</td>
<td>133</td>
<td>337</td>
<td>560</td>
<td>761</td>
</tr>
<tr>
<td><strong>Efficiency + renewables (GWh)</strong></td>
<td>0</td>
<td>1'227</td>
<td>3'180</td>
<td>5'229</td>
<td>6'236</td>
</tr>
</tbody>
</table>
How to use the scenario tool:

**Step 3, Review scenario**

- Review proposed scenario
  - Does it fit national conditions?
  - Do the calculations provide reasonable results?

→ *Is it adequate to stimulate discussion?*

- If scenario is not adequate:
  - Adjust value of parameters,
  - Modify calculation algorithms
  - Delete or add sheets, where appropriate

→ If problems are encountered, request support from your backstopping expert.
Merci. Thank you. Obrigado.