



**IRENA INITIATIVE FOR AN AFRICA CLEAN ENERGY CORRIDOR
EXPERT WORKSHOP ON INCLUDING RENEWABLE ENERGY IN GENERATION EXPANSION PLANS**

Windaba, Cape Town, South Africa
27 September 2013

SUMMARY

1. Eight countries along the Africa Clean Energy Corridor participated in the workshop: Ethiopia, Lesotho, Mozambique, Namibia, South Africa, Sudan, Swaziland, Tanzania, Zimbabwe. The participants included utilities, regulatory agencies, regional organisations and private firms. Namibia and South Africa made presentations on the key features of their respective integrated resource planning (IRP) processes and the provisions for renewable power therein. Discussions then followed on elements of these processes that other countries might take on board.
2. Namibia's Integrated Resource Planning process was outlined by Dr. Maxwell Muyambo, Technical Manager of Namibia's Electricity Control Board.
 - a. The National Integrated Resource Plan (NIRP) was developed by the Electricity Control Board on behalf of the Ministry of Mines and Energy. Government seeks buy-in by different types of stakeholders in order to ensure effective implementation of the Plan.
 - b. The Plan sets forth clear policy guidelines for procurement of renewable energy sources based primarily on amounts of renewable capacity and type of renewable technology; quotas or feed-in tariffs may be instituted to ensure a larger renewable share of supply.
 - c. Policy objectives include electricity prices based on long-run marginal cost of supply, a mix of supply that balances economically efficient and sustainable sources, sufficient supply to meet 100 percent of peak demand and 75 percent of annual energy demand, promotion of private investment in the electricity sector, and establishment of high-voltage interconnections to neighboring countries to enable electricity trading.
 - d. Independent Power Producers (IPPs) are encouraged to bid on increments of capacity specified in the Plan, and the market framework aims to encourage IPP investment.
3. South Africa's Integrated Resource Planning process was presented by Ms. Ntokozi Sigwebela, Energy Planning Manager of ESKOM, South Africa's major electric utility.
 - a. The IRP is developed by the Minister of Energy in consultation with the regulator and with registered stakeholders who receive an information pack, provide written input on proposed planning assumptions, and share feedback in a workshop to explain the assumptions chosen. Its implementation is monitored by the Minister with the assistance of the Regulator, National Transmission Company and System Operator. The New Generation Capacity regulations issued under the Electricity Regulation Act provide for development of the Plan and require it to be published in the Government Gazette.

- b. The IRP determines the timing and mix of renewable power projects and provides the basis on which the National Energy Regulator of South Africa licenses such projects.
 - c. The IRP process aims to determine the most cost-effective mix of generating options while meeting constraints such as adequacy of supply, sustainable use of resources, climate change commitments, creation of a local manufacturing base, and global competitiveness. Different scenarios of demand, supply, economic impact, climate change, and electricity imports and exports are analyzed to assess the optimal mix.
 - d. The IRP is seen as a living strategy to be revised at least once every two years. Interim reviews may assess the impacts of new scenarios and input assumptions on the Plan.
4. One key subject of the discussion was on common elements of IRP processes that have encouraged renewable power. From the examples offered, several elements were discerned:
- a. Stakeholder engagement through a formal and credible consultative process, with clear roles set forth for the transmission system operator, transmission company, energy or power ministry, electricity regulator, utilities and independent power producers.
 - b. Indicative timing and mix of new capacity additions sought, with clear specification of how much new capacity should come from each type of renewable power resource, but without reference to specific projects in specific places at specific costs.
 - c. Focus on meeting multiple objectives at least cost, with factors such as energy security, environmental impacts, and job creation considered in addition to electricity cost.
 - d. Process for reviewing and revising the plan over time, to take account of progress to date, adjustments to demand projections, and declines in renewable power costs.
5. Another key subject for discussion was the key obstacles to incorporating renewable power options in generation plans, and how planning processes have overcome these obstacles. IRENA could help countries exchange best practices on incorporating renewable options in such plans.
- a. One key obstacle identified is underestimation of renewable energy resource potential. This can be overcome through provision of current, complete and accessible information on this resource potential by IRENA and its member governments.
 - b. A second key obstacle is overestimation of renewable energy costs. This can be overcome through a feedback loop, where each round of planning uses cost information that is revealed in bids for each type of resource sought in the previous round. Sharing data on renewable power project costs through IRENA's Costing Alliance can also help.
 - c. A third major obstacle can be costs for renewable electricity which are higher than costs of alternatives, particularly in countries with abundant fossil fuel resources. This can be overcome by incorporating objectives other than cost in the planning process and by setting aside certain amounts of power or energy to be provided by renewable sources.
 - d. A fourth important obstacle may be the lack of an enabling market environment for independent power producers (IPPs). This can be overcome through a fair and transparent process for grid interconnection, establishment of feed-in tariffs, and open competition by utilities and IPPs in any renewable power development zones.