

Meeting summary from the workshop on SAPP system modeling tool

Took place at SANEDI, Johannesburg, South Africa, 19-20 November 2012

IRENA Innovation and Technology Centre

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Background

In July 2011 the African energy ministers at their summit in Abu Dhabi asked IRENA to assist in the planning for an accelerated deployment of renewable energy in the continent. In response IRENA has taken up a number of areas of research, including work in the field of scenarios and strategies. For proper investment planning of renewable technologies, it is of crucial importance that renewable technologies are assessed in the context of mid- to long term development of overall energy/power system, which takes into account the existing power infrastructure and operation characteristics. A renewable technology deployment without such a system wide planning may result in misallocation of resources. The goal of scenario and strategy work is to assist in the development of a suitable toolbox, as well as the application of this toolbox to enhance the renewable energy planning as a part of national energy mix strategies.

Within the Scenarios and Strategies work program of 2012, IRENA Technology and Innovation Centre had developed a power system planning model for each country participating in Southern African Power Pool based on master plans in the region, updated them with country by country renewable potential data, and renewable technology and cost data for the region, and also incorporated the dimension of decentralized power supply options. Preliminary scenario analysis collectively using the country models was done and documented, aiming at presenting a robust starting point for analyzing long term (up to 2050) power sector investment options by local partners in the regions. Such model can be a useful tool in the process of energy planning at large and in analyzing roles of renewable technologies in the framework of overall power sector development.

Under this background, objectives of the meeting were:

- **To discuss the role of energy planning in the development of the energy sector and in promoting penetration of renewable**
- **To present IRENA's Southern African power sector modeling tool and discuss how to make it more relevant**
- **To identify areas of collaboration in the field of energy planning**

Participation

The workshop was attended by professional staff from energy planning offices, both from governments and from electric utility companies, as well as by academicians actively involved in energy system analysis in the region. 10 of the region's countries were represented for a total of 27 attendees with a good mix of three groups of professionals (10 utility professionals, 11 government officers, 6 academicians). The government

participants were nominated by IRENA Focal points. In addition, 18 people from 'partner' organizations also took part, including SAPP secretariat, SANEDI, the World Bank, the IAEA, the Royal Institute of Technology of Sweden, the Finish government, GIZ, and NGOs.

Major conclusions from the discussion

Overall feedback

This modeling tool and workshop was welcomed. The participating country representatives indicated that such a tool would be an essential starting point for power sector development and that the expertise and knowledge that IRENA has in the renewable field are indispensable inputs for the planning process in order to maximize the benefit from renewable power technologies. To have such tool be made available by IRENA would help strengthen national and regional capacity to develop plans and strategies for meeting the challenges that the African power sectors face. This tool would further increase the use of renewable technologies as contributions to overcoming these challenges. It was therefore requested that IRENA take an active role in disseminating the tool and in supporting network development for excellence centers.

On the Model and energy planning

- A new name for the model was proposed 'System planning test model for Southern Africa (SPLAT)', to distinguish the model itself from the SAPP as an institution.
- SPLAT model and underlying data should be made available to the interested parties in the region.
- IRENA's activities on tool and scenario development should continue with intensified consultation with utilities, government, and academics in the region.

Gap assessment in the region: universities

- Universities have an important role in providing flows of trained personnel to governments and utilities
- In order for the graduates to have relevant skills for utilities and government planning offices, it is essential that universities collaborate with them, particularly in obtaining updated data and information on relevant policy development
- Establishing a network of African universities based on energy system analysis with the aim of facilitating training activities, student exchanges, sharing syllabuses etc. would help enhance long term capacity in the region

Gap assessment in the region: utilities

- Only 4 utilities in the region have access to energy planning models. SPLAT model can be a useful planning tool in countries that do not have access to such tool
- However, whether SPLAT can be a useful tool for a planning purpose at the utility or government level or not depends on a capacity building framework which allows sustainable access to support

- SAPP secretariat has been acting as a platform for coordination among utilities in the region and is experienced with managing consultation process with the member utilities
- SAPP secretariat has a strong capacity in using energy planning tools and developing master plans, however the aspects of renewable energy have not been fully taken into consideration on the process of master plan development

Gap assessment in the region: government

- Governments need to be informed of the development of new tools and possible training activities through the SADC secretariat
- Governments have an important role in coordinating local institutions

Recommended plan of actions

Based on these discussions a recommended plan of actions for enhancing energy planning capacity in the region was agreed:

- IRENA and SAPP will establish a formal working relationship to allow the SAPP secretariat to act as a regional focal point for energy planning activities in the region
- Through the SAPP secretariat, IRENA will present SPLAT model to the member utilities for review and testing
- IRENA will make the SPLAT model, underlying data, and results of a few scenarios available for interested parties in the region
- In doing so, IRENA will coordinate with the IAEA to package it with MESSAGE software self-learning material
- IRENA will assist establishment of academic network in the region and assist in 1) provision of training courses to lecturers, 2) development of syllabuses, 3) maintenance of the network
- IRENA will assist the SAPP secretariat in providing technical expertise on renewable technologies, resources, and costs during the development process of the next SAPP master plan
- IRENA will map out available IRENA tools and methodologies upstream and downstream of energy planning as a package (from resource assessment to planning bankable documents)

If IRENA is to make resources available to carry out corresponding parts of the recommended plan of action, it is of vital importance to ensure that:

- IRENA's support is provided based on a sustainable framework. Experience in the region shows that ad hoc intervention from various institutions on capacity building only leave institutions confused while wasting professionals' valuable time
- IRENA's support is focused on the institutions that clearly show value added. Any support from IRENA needs to be built on what already exists in the countries and region