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Proposed increase in SA's solar renewable energy will lead to positive spin-offs

A key revision outlined in South Africa's draft Integrated Resource Plan (IRP) revision (Update report 2013), is the proposed substantial increase in solar renewable energy capacity, both Photovoltaic (PV) and Concentrated Solar Power (CSP).

The draft IRP revision proposes that the PV allocation be increased by 1330 MW, while CSP allocation, which to date has only been given a low MW capacity, be increased by a substantial 2100 MW. The increased solar energy allocation, if implemented, would of course contribute to alleviating the country's inconsistent, unreliable power supply. However, as importantly, it would lead to a number of very positive spin-offs and benefits, which would help overcome other challenges confronting South Africa.

Positive spin-offs and benefits

These spin-offs and benefits would be:

- Socio-economic development in the form of
 - Local content manufacturing, and
 - Local job creation
- Green energy

"The proposed increased capacity would enhance socio-economic development. This would be in the form of local content manufacturing and job creation. Job creation would in particular take the form of employment of people from local communities," says Bradley Hemphill, Managing Director of EES, an ISO 9001:2008 professional engineering and management company, which has played a significant role in the implementation of solar renewable energy in South Africa to date.

"The proposed revisions would also contribute to green energy and a green environment by helping reduce carbon emissions in a country which has one of the highest carbon emissions worldwide."

The closing date for comments on the draft from renewable energy industry players was 7 February 2014. The comments received are currently being used to compile a final draft to be submitted to

Cabinet in March 2014. Following Cabinet endorsement, the approved document will be promulgated.

REIPPPP

In addition to the solar revisions, the combination of revisions under the new IRP which are finally accepted and implemented will steer the course of the Department of Energy's (DoE's) Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) going forward. The REIPPPP is part of South Africa's national strategy to introduce up to 17800 MW of renewable energy by 2030. With the addition of the 17 projects in the third bidding round, South Africa now has 64 approved REIPPPP projects with a collective capacity of 3933 MW.

Local content manufacturing

When the REIPPPP was first conceptualized, one of the key objectives was to promote the development of local content in manufacturing industries.

Today local manufacturing is a legal requirement stipulated by the REIPPPP. All Independent Power Producers (IPPs) must meet specific targets for local content, preferential procurement and enterprise development.

Commenting on this James Ricketts, Project Manager for EES, says: "There has been an increase in local content targets in each round of the REIPPPP. In the first round the local content requirement for CSP was 21%. In the third round this was raised to as much as 40%."

Ricketts continues: "Integral to increased solar allocation will be the construction of many more plants, and this would mobilize local manufacturing."

Increased solar capacity would develop new businesses and propel existing businesses providing goods and services to the sector, throughout industry value supply chains.

There is also the prospect in future of exporting technology, equipment, skills and expertise as solar renewable energy programmes in the rest of the continent gain momentum.

Local job creation

With regard to job creation and social upliftment, all IPPs must meet specific targets for employment, ownership, and black people in top management, and it is compulsory for renewable energy equity projects to include local communities.

“The IRP draft revision’s solar renewable energy proposals, if promulgated, would dramatically increase the employment of local people, both skilled and unskilled, and provide the opportunity to create new jobs through small start-up businesses and expansion of established businesses,” says Ricketts.

Community participation requirements include job creation for citizens from local communities; ownership in the project company by black people and local communities; and development of emerging enterprises located in the communities.

These requirements are already being put into practice. A case in point is that of South Africa’s first solar tower, the 50 MW Khi Solar One, and the 100 MW parabolic trough plant, KaXu Solar One, in the Northern Cape. Khi Solar One is complete, while KaXu Solar One is still under construction. It is reported that between the two plants, more than 1400 local construction jobs and 70 permanent operational jobs have been created.

Green energy

According to the ‘SA Solar Energy Technology Roadmap (SETR)’ draft (October 2013): “As South Africa is one of the leading carbon emitting nations in the world, increasing the solar energy content within the national energy mix will help reduce greenhouse gas emissions (GHG) from the country.”

“South Africa has made a number of international commitments to reduce its carbon emissions. For example, under the agreement in the Copenhagen Accord (2009), the country committed to reducing its green house gas emissions to 34% below its ‘business-as-usual’ growth trajectory by 2020. It is also committed to achieving the Millenium Development Goals (United Nations, 2000), which target environmental sustainability,” Ricketts explains.

In South Africa the mandate for a green economy derives from the country’s constitution and the country has a number of policies in place to implement the green economy. The National Development Plan (NDP), for example, is very specific about goals and a key focus is on energy and carbon, because greenhouse emissions are expected to peak in 2025.

“The National Planning Committee presented the NDP to South Africa in November 2011. The NDP’s main focus was reportedly reducing the country’s carbon emissions to a sustainable level by adopting adaptation and mitigation policies.”

As renewable energy emits no carbon (carbon emission being a problem with regard to the country's traditional coal-fired power), the draft IRP revision's proposal to increase solar renewable energy allocation would contribute to implementing green energy and achieving a green environment in South Africa. Increased independent renewable energy production in the national electricity grid would certainly put the country in an improved position in terms of its carbon emissions.

Here again Khi Solar One and KaXu Solar One are a case in point. Khi Solar One will save 183 000 tonnes of carbon a year, and the two plants together will save a total of 498 000 tonnes of carbon a year.

Far-reaching consequences

The greatly increased solar renewable energy allocations proposed by the draft IRP revision have far-reaching, very valuable, tangible spin-offs and benefits for South Africa.

"The implementation of the increased allocations is a move to be wholeheartedly encouraged and supported. The REIPPPP has been lauded globally as a South African success story. There is no reason why increased solar renewable energy allocation should not in the same vein be successfully implemented," contends Hemphill.

Ricketts concludes: "The revised allocations would demonstrate Government's long-term commitment and vision for solar renewable energy, both for PV and in particular for CSP. Promulgation of the proposals would generate increased confidence amongst industry players, and fast track further implementation of solar renewable energy going forward to the benefit of South Africa as a whole."

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EES company profile:

Established in 2001, [EES](#) provides management, engineering and auditing services. As an ISO 9001:2008 certified company, it specialises in the integration of multiple system infrastructure including ICT, Data Centres, Audio Visual, Life Safety, Security and Building Automation Systems. With over 180 successful projects to date, EES operates predominantly in the Renewable Energy, Oil & Gas, Financial Services, Infrastructure, Utilities, Telecoms and Mining sectors.

EES is committed to proactively assisting clients reduce their carbon footprint and facilitate the development of a 'green' commercial environment. With offices in Johannesburg, Cape Town and Stellenbosch, it plays a key role in mission critical environments in Africa. Having successfully delivered on numerous international projects, EES' clients, partners and stakeholders benefit from the company's global knowledge and expertise.

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