

Positive steps to secure South Africa's future energy mix

(Johannesburg 11 September 2014) Updated in November last year, the very ambitious Integrated Resources Plan for 2010-2030, states its main aim is to reduce South Africa's reliance on coal in electricity generation to below 50% by 2030.

In procuring renewable energy the Renewable Energy Independent Power Producer Procurement Programme (REIPPP) has been quite successful as a programme. However its procurement target of 3,625MW, over an initial five tender rounds, is set at less than 10% of South Africa's total power capacity of 43,000MW. There is also concern that it will take a few years to construct and add this base requirement to the national grid.

Although limited, South Africa has other renewable energy power generation capacity, stemming from hydro-power, pumped storage, and nuclear. Hydropower capacity is being sourced from the Ingula Pumped storage scheme, providing some 1300MW in the first of four units, set to come online in mid-2015.

Regional power schemes, from renewable energy sources are also being pursued, with the Democratic Republic of Congo's Inga project being the most prominent. Inga has the potential to generate 40,000MW of power, unfortunately the timeframe on this being fully operational is highly uncertain. Inga is proposed to be rolled out in six phases, the first of which is set to generate only 4,300MW, of which South Africa will procure 2,500MW. Construction on phase one is only likely to begin in 2016/17, meaning it could be some time before South Africa benefits from this capacity source.

As outlined in this year's State of the Nation address and mentioned in the budget speech, South Africa's biggest single renewable energy project goal is the development of new nuclear power plants, of which the government is targeting an additional 9,600MW of nuclear energy capacity.

In 2013, just over 94% of South Africa's electricity generation mix came from coal-fired power stations. The remainder came from gas power plants, the diesel-fired open-cycle gas turbines, which are very expensive to run and have been used extensively during power shortages, and from renewable sources, being mainly Koeberg.

"The biggest constraints to growing South Africa's energy production capacity, including increasing the percentage of renewable energy, are the inefficiencies of Eskom, government interference, and the huge financial resources needed to fund its current and future energy projects," states Claude Baissac, CEO of Eunomix and a recognised country and political risk expert.

Coupled with SA's agreement on global Greenhouse Emission Policies which knock our overextended and major supplier of energy, coal, what options does this country have?

South Africa's energy crisis has been caused by poor planning and the inefficiency of the government and its state owned enterprise, Eskom.

"Plans are underway to build on South Africa's power capacity to match current and future demand. One of the major current issues is that South Africa commissioned two huge new

coal-fired power plants, namely Medupi and Kusile, with a third in the offing, 'Coal 3'. At full capacity, these three power plants will add over 10,000MW of additional coal-fired power to the grid, therefore diluting some of the gains made in increasing the percentage of non-coal power projects in South Africa," adds Baissac.

South Africa has many options for reducing the reliance on coal. Potentially the greatest source of future energy supply could come in the form of additional renewable energy sourced locally and from the near region, off-shore gas deposits coming from gas imports from Namibia and from Mozambique, which holds the world's fourth largest gas reserves and coal-bed methane.

Lastly and probably most importantly is shale gas however details of a shale gas programme are yet to be finalized.

In terms of solving Eskom's efficiency problems, one option for South Africa is to partly privatize Eskom, already suggested by some parts of South Africa's cabinet.

"There needs to be a concerted effort from the South African government to ensure Eskom acts as an efficient company, perhaps more restructuring. Lastly, Eskom could allow more independent power producers to increase their role in supplying power to areas that are experiencing particular shortages or are energy-intensive users," concludes Baissac.

Baissac joins other leading experts in the mining and resources sectors at next month's *Joburg Indaba* to explore other opportunities to increase and secure renewable energy production in South Africa.