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## South Africa: Renewable Energy & Network Operation at Eskom, South Africa

**South Africa is currently suffering from sufficient generation capacity and the renewable energy resources are of great importance for country at this stage. The operating capacity of renewables is 600 MW of Wind and 900 MW of Solar, in total approx. 1.500 MW, which might turn out to be the yearly growth in renewables for the coming years.**

In South Africa there is only one transmission system operator and 6 distribution operation centres within Eskom, supplying all customers, from very large customers as Municipalities in Johannesburg, Cape Town and Durban, large industries as aluminium smelters, to very small customers as farmers and households, a huge variation of customer loads.

The generation capacity is historically predominantly large coal fired power plants in the north, supplemented with a smaller amount of hydro, nuclear and gas turbines in the south, all except from some smaller hydro plants, large central power plants.

In the future, with more renewable energy in the network, the generation will be more like the loads, a huge variation in sizes and locations, but normally very far from the load centres as the big cities and industries.

The future energy system will call for strengthening of the transmission and distribution network and a new way of operating the network, with all the distributed generators, a development there has been ongoing for the past 25 years in Denmark, one of the reasons for why we now share our expertise in distribution network operation with South Africa.

[The Danish – South African Energy Programme](http://www.ens.dk/en/policy/Global-cooperation/country-cooperation/south-africa-integrates-renewable-energy) is currently working in the field of capacity building in Eskom on network operation and control of distribution systems, as one of the three activities under the Programme. For further information on the Danish – South African Energy Programme please consult: <http://www.ens.dk/en/policy/Global-cooperation/country-cooperation/south-africa-integrates-renewable-energy>

The work on capacity building in Eskom has commenced in February 2015 after a short inception period, and is planned to last one year, with a Danish technical advisor full time appointed in South Africa.

The work programme is currently visiting all 6 distribution operation centres and making a survey, assessment and interaction with operation units on actual status of network operation performance and SCADA systems, to determine improvement and training areas for the coming period.

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The Danish Energy Agency is responsible for tasks linked to energy production, supply and consumption, as well as Danish efforts to reduce carbon emissions. The Agency is also responsible for supporting the economical optimisation of utilities that in addition to energy includes water, waste and telecommunication.

We are also responsible for user conditions, supply obligation and telecommunication statistics, as well as water supply and waste management.

The Danish Energy Agency was established in 1976, and is an agency under the Ministry of Climate, Energy and Utilities.

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