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## South Africa unveils plans for 'world's biggest' solar power plant

Giant mirrors and solar panels in Northern Cape would reduce carbon emissions and generate one-tenth of the country's energy needs

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David Smith in Johannesburg  
guardian.co.uk, Monday 25 October 2010 17:01 BST

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A worker makes adjustments before the inauguration ceremony of a parabolic trough solar thermal power plant in Alvarado, eastern Spain, 2009. Photograph: Nacho Doce/Reuters  
South Africa is to unveil plans this week for what it claims will be the world's biggest solar power plant – a radical step in a coal-dependent country where one in six people still lacks electricity.

The project, expected to cost up to 200bn rand (£18.42bn), would aim by the end of its first decade to achieve an annual output of five gigawatts (GW) of electricity - currently one-tenth of South Africa's energy needs.

Giant mirrors and solar panels would be spread across the Northern Cape province, which the government says is among the sunniest 3% of regions in the world with minimal cloud or rain.

The government hopes the solar park will help reduce carbon emissions from Africa's biggest economy, which is still more than 90% dependent on coal-fired power stations. In April, the World Bank came in for sharp criticism from environmentalists for approving a \$3.75bn (£2.37bn) loan to build one of the world's largest coal-fired power plants in the country.

Energy is already a high priority in South Africa where, at the end of racial apartheid, less than 40% of households had electricity. Over 16 years the governing African National Congress has undertaken a huge national expansion, with a recent survey showing that 83% are now connected, but power outages are still not uncommon in both townships and middle-class suburbs.

An estimated 200 foreign and domestic investors will meet this week in Upington, Northern Cape, with a view to funding the hugely ambitious solar project. A master plan will be set out by the US engineering and construction group Fluor. This follows a viability study by the Clinton Climate Initiative, which described South Africa's "solar resource" as among the best in the world.

Jonathan de Vries, the project manager, said today: "I'd hate to make a large claim but yes, this would be the biggest solar park in the world."

De Vries said the park, costing 150-200bn rand, would aim to be contributing to the national grid by the end of 2012. In the initial phase it would produce 1,000 megawatts, or 1GW, using a mix of the latest solar technologies.

An initial 9,000 hectares of state-owned land have been earmarked for the park, with further sites in the "solar corridor" being explored.

De Vries, a special adviser to the energy minister, said the Northern Cape had been chosen for insolation readings (a measure of solar energy) that rank among the highest in the world. "It hardly ever rains, it hardly has clouds. It's even better than the Sahara desert because it doesn't have sandstorms."

The Orange River would provide water for the facilities, he added, while existing power transmission lines would be closer than for similar projects such as in Australia.

Northern Cape, which contains the historic diamond-rush town, Kimberley, is South Africa's biggest province and one of its poorest. But it is hoped that the park would create a "solar hub" and regenerate the local economy with fresh opportunities in manufacturing.

South Africa currently consumes 45-48GW of power per year. It is estimated this will double over the next 25 years. "In South Africa over 90% of our power comes from the burning of coal and we need to reduce this because of our international obligations on climate change," de Vries said.

"If this proves to be cost competitive with coal and nuclear, the government will roll out more solar parks. This is a very bold attempt."

He added: "Solar power isn't a panacea that will cure all but it's a part of the solution, and a very important part. There are zones in the world that are ideally suited to it, often those with low population density."

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