

The Five Biggest Solar Markets in Africa

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Tony Tiyou describes South Africa, Morocco, Algeria, Ghana and Egypt as having the largest and continuously growing solar markets in Africa.

From all the renewable energy resources that are plentiful in Africa, solar energy is probably the only one that is so widespread and well distributed across the continent. Harnessing this energy could help African countries provide access to sustainable and universal energy, especially with the demand growing exponentially. The dynamic of solar modules cost reductions observed globally over the past decade has progressively positioned the industry as a serious contender, at least in Africa, for new power generation developments. Markets are growing fast in some countries and the trend is spreading. To get a sense of how the African solar landscape is evolving and find out where the hot spots are located, this article reveals the five biggest markets.

Although small solar applications have been available in some areas many years ago, it is only over the last five years that utility-scale solar developments have emerged in Africa. Two types of technologies are precisely being designed: Solar photovoltaics (PV), using the photovoltaic effect to generate direct electric current and Concentrated Solar Power (CSP) using the sun's radiation to heat a liquid substance that is driving a heat engine and an electric generator.

Due to the limited nature of database of solar projects, the ranking has been established based on available data of currently operational or under-development capacities.

South Africa

South Africa is top country in the continent with regards to solar markets. Moreover, it is also very important in the global solar market. The sector was virtually non-existent until the launch in 2011 of the Renewable Energy Independent Power Producers Programme (REIPPP). By unlocking this competitive auction bid programme, the South African government is looking to tackle the chronic power challenges the country has experienced. Various renewable energy sources have been considered in the programme and as for solar power, an ambitious target of 8,400 Megawatts (MW) by 2030 has been set, enough to provide energy to 1.5 million households. The current status of the market is rather remarkable. Since 2011, approximately **1,360 MW** of solar power has been deployed and operational and another **1,530 MW** is under construction. This represents a total capacity of **2,890 MW** or in other words half a million homes powered. Looking at the split per technology, CSP plants represent **600 MW** of capacity and the rest is PV plants.



The Droogfontein solar plant near Kimberley opened in 2014
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While the programme implementation took more than a decade to realise the policy aspirations articulated in the founding documents, the rapid achievements since the procurement process started in 2011 have shone a brighter light. Many reviews of South Africa's progress in implementing the REIPPPP have been positive, earning the country accolades from abroad.

Morocco

Behind the dominant South Africa, the kingdom of Morocco stands in second position. Morocco is fortunate to have one of the highest rates of solar insolation in the globe, with 3000 hours per year of sunshine and up to 3,600 hours in the desert. With the launch of the CSP mega project in the city of Ouarzazate, the largest solar project in the world, Morocco is positioning itself as a solar superpower. The first phase was completed in February 2016, bringing in line 160 MW of capacity, initially providing solar electricity to 650,000 local people. At the end of the project in 2018, this figure will raise to 1.1 million people. Morocco has set a clear target of reaching **2,000 MW** of solar power by **2020**, making up a third of renewable energy supply. The market size so far has a **180 MW** operational capacity and an additional **350 MW** is under development.

Moroccan authorities have displayed their international ambitions by holding talks with neighbouring countries and also some European countries with the aim of exporting solar energy.

Algeria

Its current energy industry is almost entirely centred on the enormous gas resources of the country, which is a top exporter of natural gas. Although being the backbone of the economy, the oil and gas industry is leaving the country in a very vulnerable position due to the extreme volatility of commodities prices. To respond to the challenge, the Algerian government has established a very ambitious target of 22 gigawatts (GW) of renewable energy supply to be achieved by 2030. For comparison, this is about 1.5 times the current installed capacity of electricity generation. Out of this figure, 12,000 MW will be dedicated for domestic consumption and 10,000 MW for export.

To date, the market capacity has been estimated at **290 MW** of operational power, and **70 MW** under construction.

Ghana

Standing in fourth position, Ghana is the only sub-Saharan African country, apart from South Africa, on the list. In

West Africa, Ghana has solidly been at the forefront of renewable energy. It is then neither a surprise nor an accident that they are a growing market. Their ambition is to generate 10 per cent of their energy needs from renewable energy sources by 2020, which would equate to approximately 500 MW, enough to power about 100,000 households. Currently, there is 20 MW of solar PV plants that are operational and 100 MW of solar capacity is also being developed. Adding to that, the Nzema project, which is the biggest solar PV plant in Africa, the current Ghanaian market's capacity is evaluated at **275 MW**.

Other countries in West Africa are looking to emulate Ghana, especially Nigeria, which is taking steps to boost its market.

Egypt

Closing this top five is Egypt, but she could very soon overtake Morocco in second, should current projects being mulled come to fruition. Increasingly struggling to satisfy rising power demands with domestic fossil fuels, Egypt has plans to raise its share of renewable energy capacity and reach 2,650 MW by 2020, which could provide electricity to 500,000 households. Information gathered suggests about 1 GW of PV capacity could begin construction within the coming months.

For the time being, it has about **20 MW** of CSP in operation and is planning to build approximately **100 MW** of solar PV to that capacity.

Conclusion

The analysis of the five biggest markets demonstrates that they are mainly located in the North and the South of Africa. With three out of five countries, North Africa is strongly represented. In fact, the development of large-scale solar projects in the continent initially started there and with the rise of the South African market, the industry has gone through a major inflexion point. Ghana is the only country situated outside of these areas. Nevertheless, with the emergence of the Nigerian solar market, there is little doubt that West Africa will grow in importance. Coupled with ambitions expressed by the various countries mentioned in the article, Africa's solar market could be poised to go through a second inflexion point, establishing itself as a major global market.

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