

# Solar energy exploits in Namibia

Namibia is one of the richest countries in the world – when it comes to solar radiation.

For decades Namibia has had to import most of its electricity from surrounding countries.

In 2015 the share of imports accounted for about 70% of its electricity consumption via the Southern African Power Pool arrangement, despite Namibia's aim to cover 75% of electric energy demand from internal sources by 2010.

Most of the country's demand of 600MW is consumed by the industrial sector and only 34% of the population currently have access to electricity.

Namibia's government-owned national utility, NamPower, has warned of dramatic electricity price hikes. Honourable Minister Obeth Kandjoze has mentioned on Friday, 10 June 2016 in a speech in front of stakeholders at the Ministry of Mines and Energy that despite a regulatory framework from 2006 there were no sufficient private investments done in the energy sector. The burden on NamPower to provide sufficient energy can only be relieved with private investments. So far, however, only two IPPs (Independent Power Producers) are delivering energy to the public grid: Innosun in Omburu with a 4.5 MW solar plant and HopSol in Otjiwarongo with a 5 MW solar plant.

## HopSol Solar Plant Otjiwarongo

And all this despite the fact that the Namibian solar radiation could make the country almost independent from external electricity purchases!

Namibia's excellent sunshine regime allows annual energy yields of between 1,600 kWh/kWp in coastal areas, up to about 2,100 kWh/kWp in select locations in southern Namibia. While the specific yield per installed Wp depends on the type of PV technology used, Namibia's outstanding solar resource implies that a hypothetical PV array with a capacity of one kWp will produce between 1,600 and 2,100 kWh of electrical energy per year. This is a considerable energy yield and ranks amongst the best in the world.

Today, in a slow and silent manner, similarly to how solar water heaters made their inroads during the past decade, Namibian investments in solar photovoltaic (PV) technology are increasing. PV converts sunlight to electricity.

Most urban people take electricity for granted, but users notice the regular and substantial cost increases on their electricity bills. Grid parity, which is the point where electricity generated from solar PV is cheaper than that supplied by the electricity grid, has meanwhile arrived in most distribution areas in Namibia. It drives private investments and changes the way commercial and domestic users think about their own electricity use, and its supply. (source: Konrad Adenauer Stiftung, Namibia's Energy Future 2012)

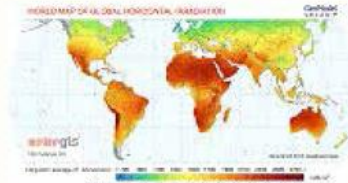
Source: HopSol Africa, pv roof installation in the central of Namibia

While solar PV does not produce electricity when the sun is not shining, it can make a significant contribution to reduce the electrical energy requirements during the day and can make a sizeable and sustainable contribution to the reduction of the country's day-time electricity needs. (source: Konrad Adenauer Stiftung, Namibia's Energy Future 2012).

Source: HopSol Africa, residential installation. It seems that the Namibian society is becoming aware of these facts since not only the residential and industrial solar photovoltaic installations are increasing in number.

Also for off-grid solutions the solar market has never been as attractive as it is now.

Decreasing prices in solar technology and the advantage of being autonomous with a reliable source of energy make photovoltaic solar power plants interesting to farms, lodges and also to off-grid settlements like Gam.



HopSol Solar Plant Otjiwarongo



Source: HopSol Africa, supermarket roof in the north of Namibia



Source: HopSol Africa, pv roof installation in the central of Namibia



Source: HopSol Africa, Farmhouse installation



Source: HopSol Africa, Maerua Lifestyle Shopping Centre, Windhoek





Source: HopSol Africa, office roof in Windhoek



Source: HopSol Africa, residential installation



Source: HopSol, construction works in Grootfontein / Otjozondjupa

Gam was provided in 2014 with one of the biggest off-grid photovoltaic solar installations of whole Africa. The Ministry of Mines and Energy had awarded the works for Namibia's biggest off-grid solar power plant to the Namibian solar company HopSol Africa (Pty) Ltd.

The solar power plant was constructed by HopSol with only local work force at Gam village in the Tsumkwe Constituency, Otjozondjupa Region. The solar power plant works excellent and would provide the whole Gam settlement of about 1630 people with electricity made from the sun. The recent complaints of the people about faulty meters and the faulty connections have to be addressed by the Ministry and repaired by the responsible local electricity company and the O&M company so that this plant can be used efficiently.

**Source: HopSol Africa, Gam solar**

End of June 2016 the first project in the wake of the Nampower REFIT Program will go operational: The Namibian company HopSol has constructed another 5 MW solar plant in Grootfontein/ Otjozondjupa with Off-taker Nampower. The REFIT Program was incentivized by Nampower and the Ministry of Mines and Energy to convince more private investments in the Namibian energy sector and thus relief Namibia of its dependency on foreign energy imports.



Source: HopSol Africa, Gam solar photovoltaic installation with generators

**Source: HopSol, solar park in Grootfontein finalized in June 2016**

Despite the above mentioned positive circumstances Namibia has to offer for private investors in the solar market, the timely realization of the further 34 projects to which a generation licence has been issued, is questionable. In addition to bureaucratic obstacles and financial hurdles, above all there seems to be a delay caused by the Ministry of Agriculture regarding the issue of the necessary consents so that Namibia will have to wait for further relief in respect to its energy crisis for an indefinite period of time.



Source: HopSol, solar park in Grootfontein finalized in June 2016



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- Environmental Scoping Study
- Water Abstraction Permits
- Waste Water Management Plans and Permits

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