

Benban Solar Park

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Project Type :	Location :	Capacity :	Estimated Investment :
Solar power park	Benban, Aswan, Egypt	1.8GW	\$4bn

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Benban solar park is a power complex of 41 solar power plants being developed in Benban, located in the Aswan governorate, Egypt. Benban solar park is a large-scale project.

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State-owned New and Renewable Energy Authority (NREA) is developing the Benban solar park project, which includes a number of small [solar power plants](https://www.nsenerybusiness.com/projects/villanueva-solar-power-plant-viesca-coahuila/) (<https://www.nsenerybusiness.com/projects/villanueva-solar-power-plant-viesca-coahuila/>) being developed by different companies at a total cost of \$4bn.

The project is a part of Egypt's Nubian Suns Renewable Energy Feed-in Tariff (FiT) programme announced in September 2014, which is in line with the Egyptian government's Sustainable Energy Strategy 2035 that aims to produce 20% of electricity from renewable sources by 2022.

The first phase of the solar park included Infinity Solar's 50MW solar power plant, which commenced operations in March 2018. The entire solar park is expected to be completed in 2019.

PROJECT GALLERY

It will produce more than 4TWh of power, once fully operational, and prevent two million tonnes of carbon dioxide emissions a year.

Benban solar park make-up

The Government of Egypt has provided 37.2km² of land to NREA in Benban, in the town of Daraw Markaz of Upper Egypt, for the development of the Benban solar park.

The 41 solar power plants will be developed on plots ranging from 0.3km² to 1.0km² in size. Each plant will be equipped with photovoltaic (PV) panels mounted on fixed, immovable frames, which will be laid in arrays. The PV panels will range in size from 1,200x600mm to 2,000mmx1,000mm.

The arrays will be connected to inverters for converting the direct current (DC) power to alternating current (AC) power, which will be transferred by a transformer to the nearby power grid for distribution.

A control centre will be constructed at the site, which will house the monitoring and communication equipment for the substations.

A 16km water supply pipeline from the Nile river is being laid to supply the water required for operations at the site.

Solar projects within the Benban solar park

At 64.1MW, Infinity 50 is the biggest solar power plant in the Benban solar park. It is being developed by Infinity 50, a consortium comprising Infinity Solar, ib vogt and Solizer.

SP Energy and Horus Solar Energy will develop 50MW power plants each with an investment of \$7m and \$15.75m, respectively.

Scatec Solar is developing six solar PV power plants with a combined capacity of 400MW. Further, three projects namely Phoenix 50, BSEP 50 and MMID 30 with a combined capacity of 166.5MW are being developed with a total investment of \$190m, jointly by the Infinity 50 consortium and Phoenix Solar.

Other projects being developed in the Benban solar park include the 50MW Al Subh solar power plant by Acciona Energía and KCC Corporation, and the 50MW Taqa Arabia Solar plant by Taqa Arabia.

It further includes the 30MW SECI Benban 3 Winnergy plant by Al Tawakol Electrical, Enerray, Desert Technologies and Spectrum, and the 50MW Delta Solar plant being developed by Delta for Renewable Energy, a joint venture between Alcazar Energy Partners (75%) and Nile Capital Holding for Financial Developments (25%).

Benban solar park will also include the 50MW SECI-DT Benban 1-ARC by ARC for Renewable Energy, the 20MW SECI Benban 2 Arinna by Arinna Solar Power, the Alcazar Energy Egypt Solar, which includes four 50MW plants by Alcazar Energy Partners and Acciona Benban, and three 50MW plants by Acciona Energía and Swicorp.

Financing for Benban solar park

A consortium led by the International Financial Corporation (IFC) has provided \$653m in financing for the construction of 13 solar power plants in the Benban solar park in October 2017.

The consortium includes the Africa Development Bank, the Asian Infrastructure Investment Bank (AIIB), Arab Bank of Bahrain, CDC of the United Kingdom, Europe Arab Bank, Green for Growth Fund, FinnFund, ICBC, and OeEB of Austria.

The European Bank for Reconstruction and Development (EBRD) has financed 16 projects with a combined capacity of 750MW, under a \$500m agreement for renewable energy financing in Egypt.

EBRD, being part of a consortium led by International Development Finance, is investing \$335m on power plants being developed by Scatec Solar. The consortium partners also include the United Nations' Green Climate Fund (GCF), the Dutch Development Bank, FMO, the Islamic Development Bank (IsDB) and Islamic Corporation for the Development of the Private Sector (ICD).

Bayerische Landesbank and Arab African International Bank are financing the Infinity 50 project.

Power transmission from Benban solar park

The Benban solar park will have four state-of-the-art high-voltage substations developed by NREA and Egyptian Electricity Transmission Company (EETC). Three of the four substations will span an area of over 15,000m² and will feature 175MVA transformers and 22/220KV switchgears.

The fourth substation will cover an area of 50,000m² and feature 175MVA and 22/220MVA transformers and 22/220/500 kV GIS switchgear.

The power generated at the solar park will be transmitted to the substations through a new 220kV line constructed by EETC and further to the national electricity network.

An additional connection by 180km double-circuit 500kV transmission line is planned in the future.

The electricity generated from the plant will be sold to the EETC under 25-year power purchase agreements.

Contractors involved

ib vogt and Scatec Solar will be the engineering, procurement and construction contractors, and operations and maintenance services providers for the Infinity 50 and Scatec Benban projects respectively.

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