

## Solar energy research and development cairo

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Electric power generation is the second-largest contributor to greenhouse gas emissions. A staggering 79 percent of the world"s electricity production relies on burning fossil fuels, primarily coal and natural gas. However, a noteworthy shift is on the horizon, with global investments in solar power expected to surpass those in oil for the first time in history this year.

Egypt is blessed with an abundant solar resource, basking in an average of 9-11 hours of daily sunshine coupled with low humidity levels. The country is graced with an impressive global horizontal irradiation level, which is defined as the total solar radiation incident on a horizontal surface, averaging approximately 2230-2330 kilowatt-hours per square meter annually.

This vast solar energy potential offers Egypt a significant opportunity to tackle its mounting energy needs, diversify its energy sources, and ameliorate its power sector's environmental and climate impact.

Egypt's commitment to renewable energy is resolute, Egyptian Minister of Electricity and Renewable Energy Dr. Mohamed Shaker told Youm7. The nation aims to substantially reduce its reliance on traditional energy sources, with the ambitious goal of reaching a 60 percent dependence on renewable energy by 2040.

This shift towards renewable energy sources aligns with global efforts to combat climate change and positions Egypt as a regional leader in adopting eco-conscious energy solutions.

Since 2014, Egypt has enacted various renewable energy legislations, laying the foundation for pioneering companies to thrive in the market. The companies that emerged and later became staples in the solar energy ecosystem play a crucial role in advancing solar energy solutions. Here are seven leading Egyptian solar energy companies contributing to the nation's energy security and environmental well-being.

A pioneer in applying on-grid solar power purchase agreements (SPPAs), Solarize Egypt is an independent power-producing company that handles the financing, design, installation, and commissioning of photovoltaic solar power plants.

Through their SPPAs, the company provides, installs, and maintains a solar system on a customer's property, and the customer buys the generated electricity at an agreed-upon rate.

Their vision took shape in 2013 with a mission to cover Egypt's deserts with solar panels, offering cost-effective and environmentally-friendly energy solutions to commercial, industrial, and agricultural sectors.



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Photo credit: KarmaSolar.

KarmSolar, founded in 2011, is a leading renewable energy solutions provider in Egypt. The company's mission is to deliver sustainable energy solutions to Egyptian businesses and communities. They began their journey in 2012 by introducing solar-powered water pumping to Bahariya Oasis in Egypt's Western Desert, and soon secured their first contract with Fridal, constructing 33 solar wells in the oasis.

In 2015, KarmSolar became the first Egyptian company to obtain an Independent Power Producer (IPP) license, allowing them to sell electricity from off-grid solar stations. Their commitment to renewable energy was further solidified by joining the Egyptian Government's feed-in-tariff scheme in 2016. The company's success continued with the signing of a significant private Power Purchase Agreement (PPA) in 2017 for a 16.8 MW solar station. By 2018, KarmSolar ventured into power distribution, managing energy infrastructure for Arkan Plaza and Arkan Town.

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