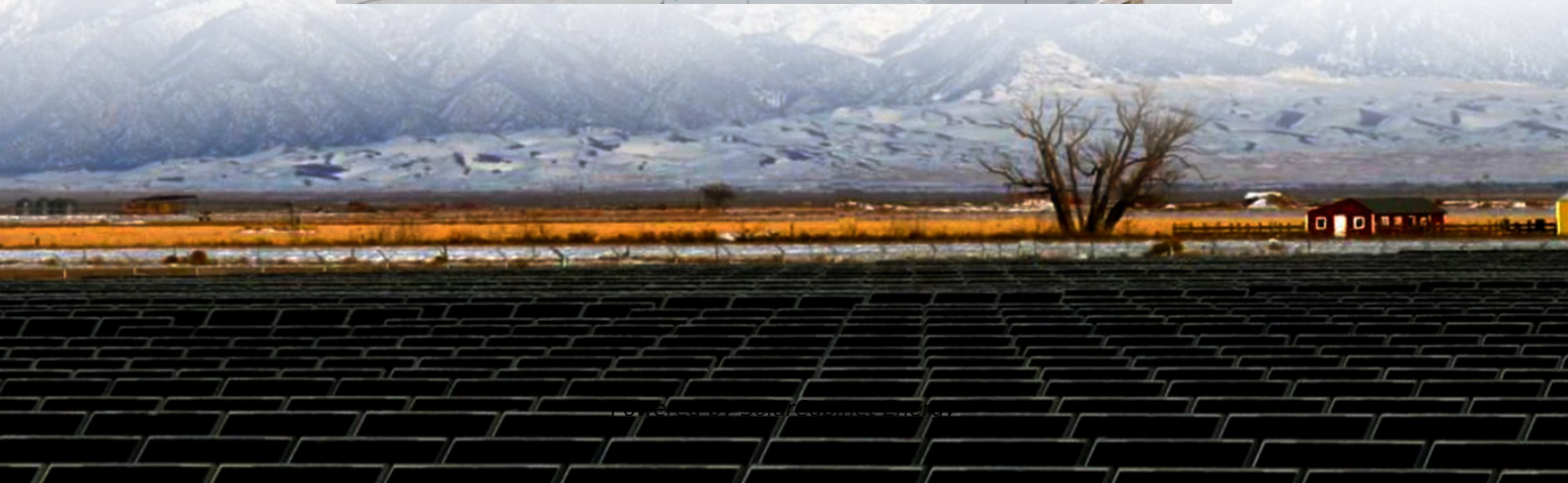


Photovoltaic power generation system solution for Iran s communication base stations





Overview

The communication base station installs solar panels outdoors, and adds MPPT solar controllers and other equipment in the computer room. The power generated by solar energy is used by the DC load of the base station computer room, and the insufficient power is supplemented by energy storage devices. Is solar energy a viable source of energy in Iran?

Particularly, Iran enjoys a high potential for solar radiation up to 5.5 kWh/m²/day where implementation of solar power plants is completely feasible and affordable. Due to great access to solar energy, several studies have evaluated the potential of generating electricity from this abundant and clean source of energy.

Can a hybrid power system be installed in Iran?

Askari and Ameri (2011) studied the economic feasibility of installing a hybrid power generation system including a PV system, a diesel generator, and batteries in Iran. Their used method was based on solar radiation, annual electric demand, and the rated power produced by the diesel generator.

Why are solar PV modules reducing performance in Iran?

The annual average air temperatures of all the provinces of Iran is higher than 25 °C. Therefore, the PV modules performance will dramatically reduce due to high ambient temperatures.

Why does Iran need solar energy?

The other reason is that under the “Paris Agreement” terms, Iran obliged to reduce its GHG emissions by at least 4% and at most 12% by 2030. Among RE resources, Iran has the remarkable potential for solar energy with the average annual rate of 4.5–5.5 kWh/m².

Can PV technology be deployed in Iran?

Although there is a high tendency of the government and policy makers for



deployment of PV technology in Iran, there are still some impediments to turn potential into reality in this sector due to insufficient industry growth, financing problems, deficient of governing rules, and lack of a sustainable development roadmap.

Does Iran have a solar radiation potential?

Haghparast Kashani et al. (2014) assessed the solar radiation potential in Iran. In this case, the Niroo Research Institute (NRI) irradiation model which is based on the meteorological and geographical data was implemented to predict the values of the monthly average solar radiation.



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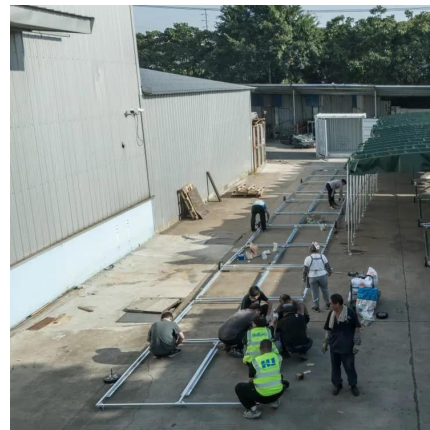


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