

Could a new solar project help remote Arctic communities transition to green energy?

Norway has installed the world's northernmost ground solar panels in its Svalbard archipelago, a region plunged in round-the-clock darkness all winter. The pilot project could help remote Arctic communities transition to green energy.

Why do solar panels work in Isfjord Radio?

The solar panels also benefit from the "albedo" effect, the reflective power of snow and ice, as well as low temperatures that improve their efficiency. On the flipside, the region is plunged into total darkness from early October until mid-February, which makes it impossible for Isfjord Radio to completely give up fossil fuels.

How polar climate affect bifacial solar power production?

The Polar climate has several favourable characteristics for solar power production, namely the effect of increased solar cell voltage with decreasing temperature, and high-albedo providing significant amounts of ground-reflected irradiance which can be utilized by bifacial solar panels (Frimannslund et al., 2021).

Do snowdrifts affect solar power plants in polar climates?

In this study we show that snowdrifts pose a significant challenge for solar power plants in Polar climates as they can grow to cover the plant, resulting in reduced power production and an imposed mechanical load on the PV arrays.

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LONGYEARBYEN, Svalbard - In a pioneering venture, Norway has unveiled the world's northernmost solar panel installation in the Svalbard archipelago. This ambitious move comes despite the region's perpetual darkness during the winter months.

In the remote Svalbard archipelago of Norway, situated in perpetual winter darkness, a groundbreaking project has been completed: the installation of the world's northernmost ground solar panels. This innovative initiative holds the potential to assist isolated Arctic communities in their transition to clean energy.

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The study investigates the potential and the design challenges of Polar solar power plants through field measurements of a small-scale solar power plant with modules facing both sky and ground...

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The area potentially concerned stretches from Svalbard to Jan Mayen Island, covering 280 000 square kilometers of Arctic seabed. Despite protests and warnings from environmental organizations, scientists and many politicians, Norway has decided to go ahead with the project.

Svalbard and Jan Mayen, with their unique geographical and environmental characteristics, offer promising opportunities for emerging industries and investment prospects. [...]

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