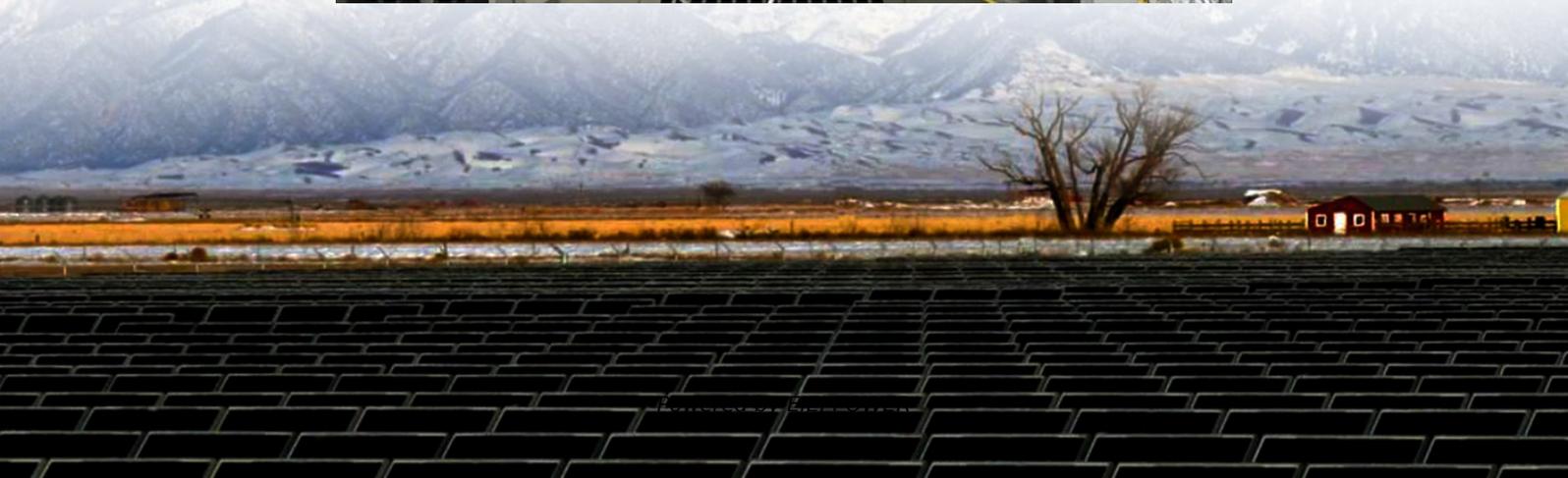


# Discussion on Photovoltaic Energy Storage Containers in Mountainous Areas





## Overview

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Do PV stations affect mountainous environments?

Currently, the modeling analysis of the environmental impacts of PV systems mainly focuses on the macro-scale, while studies on the local scale primarily rely on field observations. However, there is very little observation and quantitative research on the impact of PV station on mountainous environments.

How does a large-scale solar PV system affect the environment?

Large-scale solar PV systems alter surface albedo, redistribute incoming solar irradiation, and affect the energy exchange processes, thereby impacting regional and global atmospheric circulation . Most PV installations occur in desert areas, which offer abundant sunlight but also feature more fragile ecosystems.

Does daytime cooling benefit electricity generation in mountainous PV plants?

Most desert PV plants exhibited daytime warming during hot seasons, and the daytime AT variations were insignificant in grassland PV plant , , , . Daytime cooling in hot seasons may uniquely benefit electricity generation in mountainous PV plants of this study.

Do mountain PV plants need environmental impact assessments?

The study underscored the need for tailored environmental impact assessments for PV plants with high arrays coverage in mountainous regions. So the design guidelines for mountain PV plants and the regulations during the construction and operation phases should fully consider their environmental impact.



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Huayue Li<sup>1, a</sup>, Yongwen Yang<sup>1, b</sup>, Qifen Li<sup>1, \*</sup>, ...

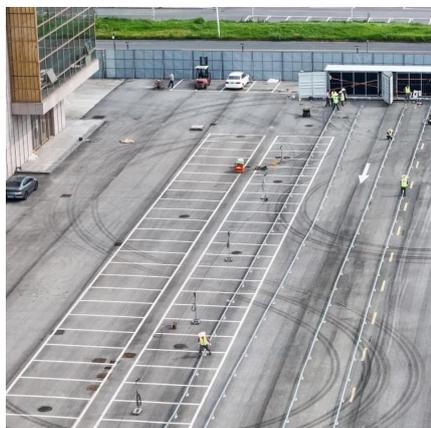


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