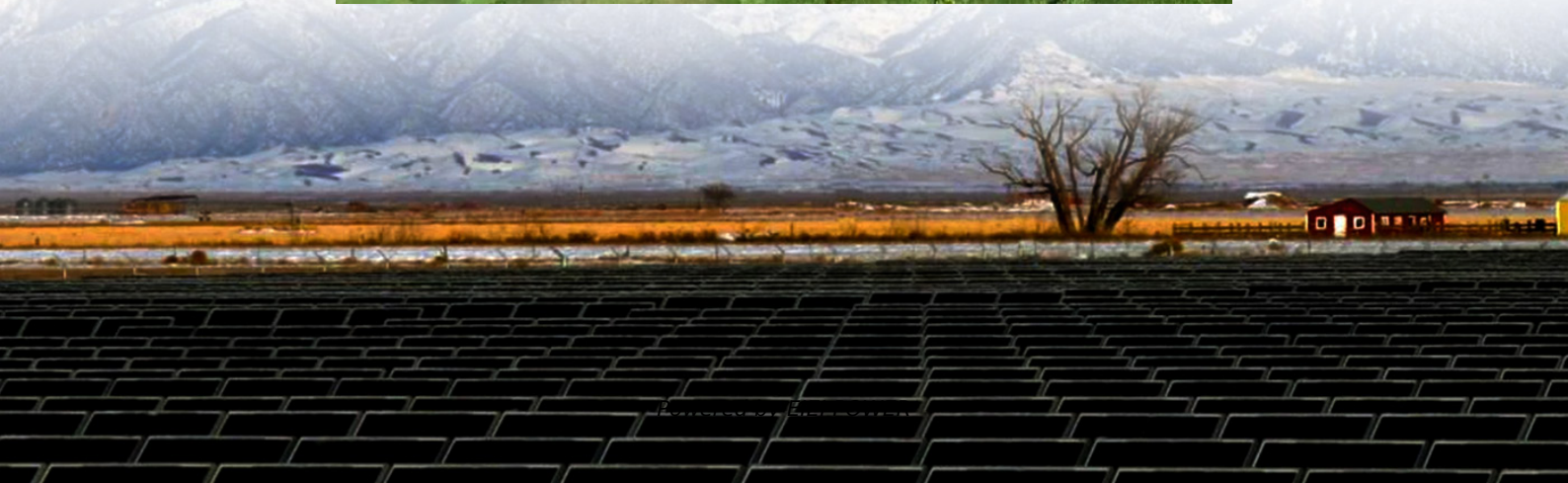


# **5ga solar container communication station wind and solar complementarity**





## Overview

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Renewable energy has been used as an alternative solution to fossil fuels aiming to supply the increasing energy demand while reducing greenhouse gas emissions. Solar and wind energy are prominent.

Does solar and wind energy complementarity reduce energy storage requirements?

This study provided the first spatially comprehensive analysis of solar and Wind energy Complementarity on a global scale. In addition, it showed which regions of the world have a greater degree of Complementarity between Wind and solar energy to reduce energy storage requirements.

What is solar-wind complementarity?

- Solar-wind complementarity is mapped for land between latitudes 66° S and 66° N.
- Complementarity is examined regarding PV panel inclination and storage capacity. The concept of renewable energy sources complementarity has attracted the attention of researchers across the globe over recent years.

How do we evaluate the complementarity of solar and wind energy systems?

The review of the techniques that have been used to evaluate the complementarity of solar and wind energy systems shows that traditional statistical methods are mostly applied to assess complementarity of the resources, such as correlation coefficient, variance, standard deviation, percentile ranking, and mean absolute error.

Can a wind-solar hybrid system improve complementarity?

In the case of wind-solar hybrid systems, it was found that Complementarity can be enhanced through the dispersion of wind farms but not for solar energy. However, when considering wind farms, the feasibility must consider the requirement for long-distance transmission lines in this scenario.



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