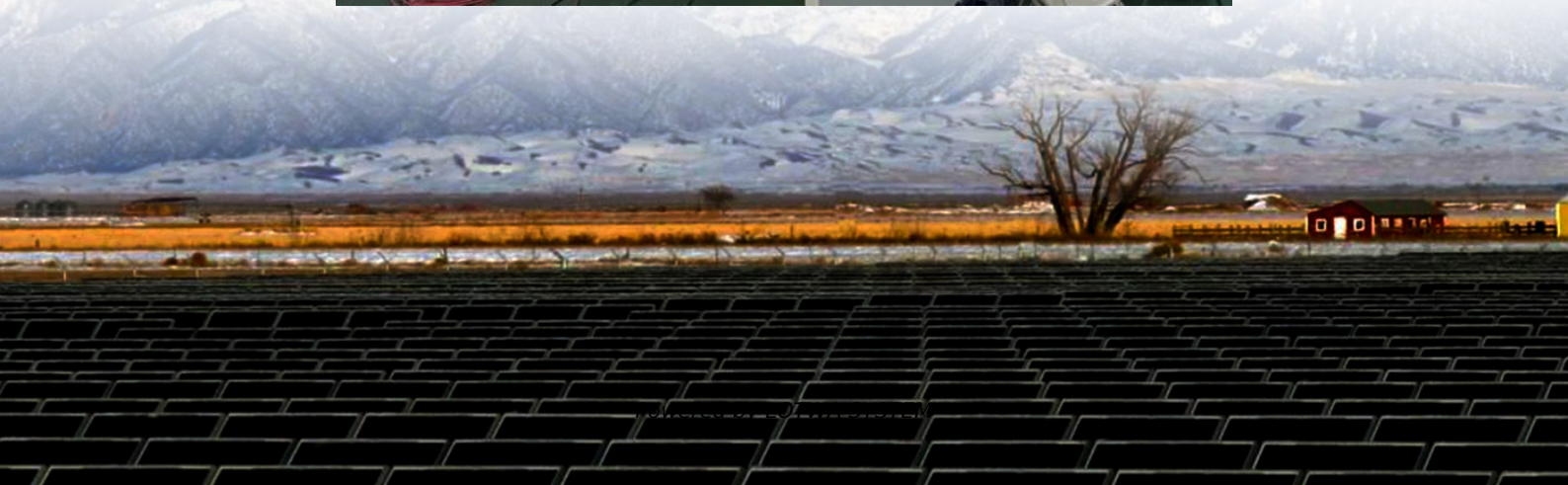


Environmental Comparison of Off-Grid Solar Containers on Islands 150ft





Overview

Is a household-scale PV system environmentally sustainable?

The results suggest that a household-scale PV system integrated within a micro-grid with community-scale wind turbines and Li-ion batteries is environmentally the most sustainable configuration. 1. Introduction As the cornerstone of modern society, access to energy has been linked to improvements in health, education, and social welfare .

Do hybrid solar PV systems reduce capacity requirement?

A reduction in capacity requirement, albeit to a lesser extent, is observed for the solar PV component (55% compared to the stand-alone PV system). More significantly for the batteries, 70% less capacity is required in the hybrid systems compared to the equivalent stand-alone systems.

Are tropical islands a good candidate for a renewable-powered micro-grid system?

The feasibility of a system without a diesel generator as backup also confirms that tropical islands, as considered in this study, are prime candidates for a fully renewable-powered micro-grid system.

Are PV systems more sustainable than micro-grids?

Comparing equivalent architectures for single-household and community-scale installations, PV systems are environmentally more sustainable if installed individually in households, while larger turbines in community micro-grids are environmentally better for wind utilisation.



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