

# **Suhumi Livestock Farming Mobile Energy Storage Container Hybrid**





## Overview

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Can hybrid energy storage improve dairy farm sustainability and operational resilience?

The case study, based on synthesized data, demonstrates how the proposed approach significantly reduces energy costs, increases system resilience, and improves overall farm productivity. This research highlights the transformative potential of hybrid energy storage and DRO in revolutionizing dairy farm sustainability and operational resilience. 1.

Why should I combine DRO with hybrid energy storage systems?

The choice of combining DRO with hybrid energy storage systems in our bi-level optimization framework is driven by its unique ability to handle the high levels of uncertainty inherent in dairy farm operations.

What is the difference between a DRO and a hybrid storage system?

DRO's capability to model ambiguous and variable data allows for robust planning under fluctuating renewable energy sources and market prices, while hybrid storage systems effectively mitigate these fluctuations by maintaining a stable energy supply.

What is hybrid energy storage?

By leveraging hybrid energy storage, combining battery and thermal storage, the framework mitigates the challenges posed by the intermittent nature of solar and wind power, ensuring a stable energy supply. The incorporation of dynamic energy pricing and real-time adjustments enables cost reductions while maintaining operational efficiency.



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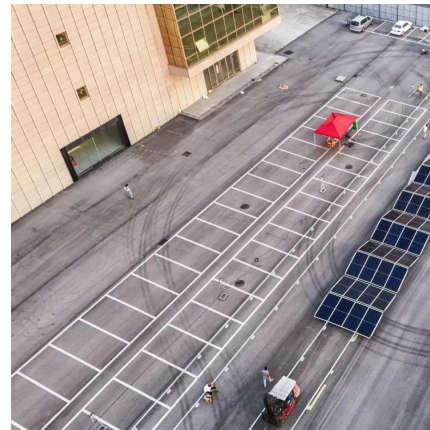


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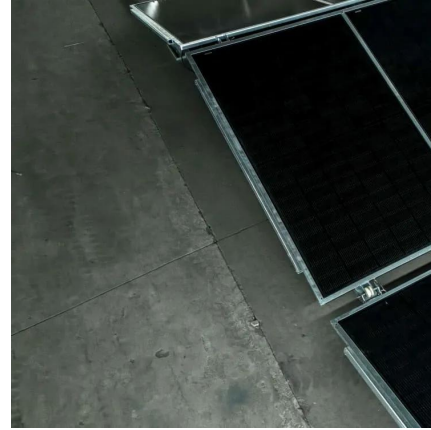


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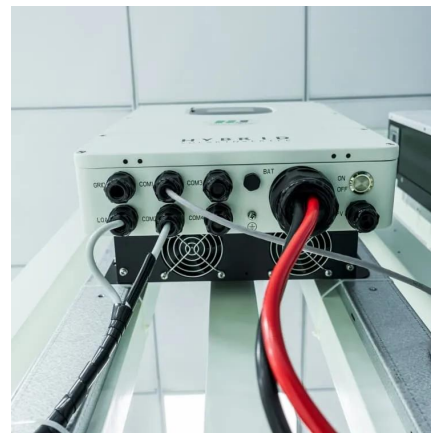
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