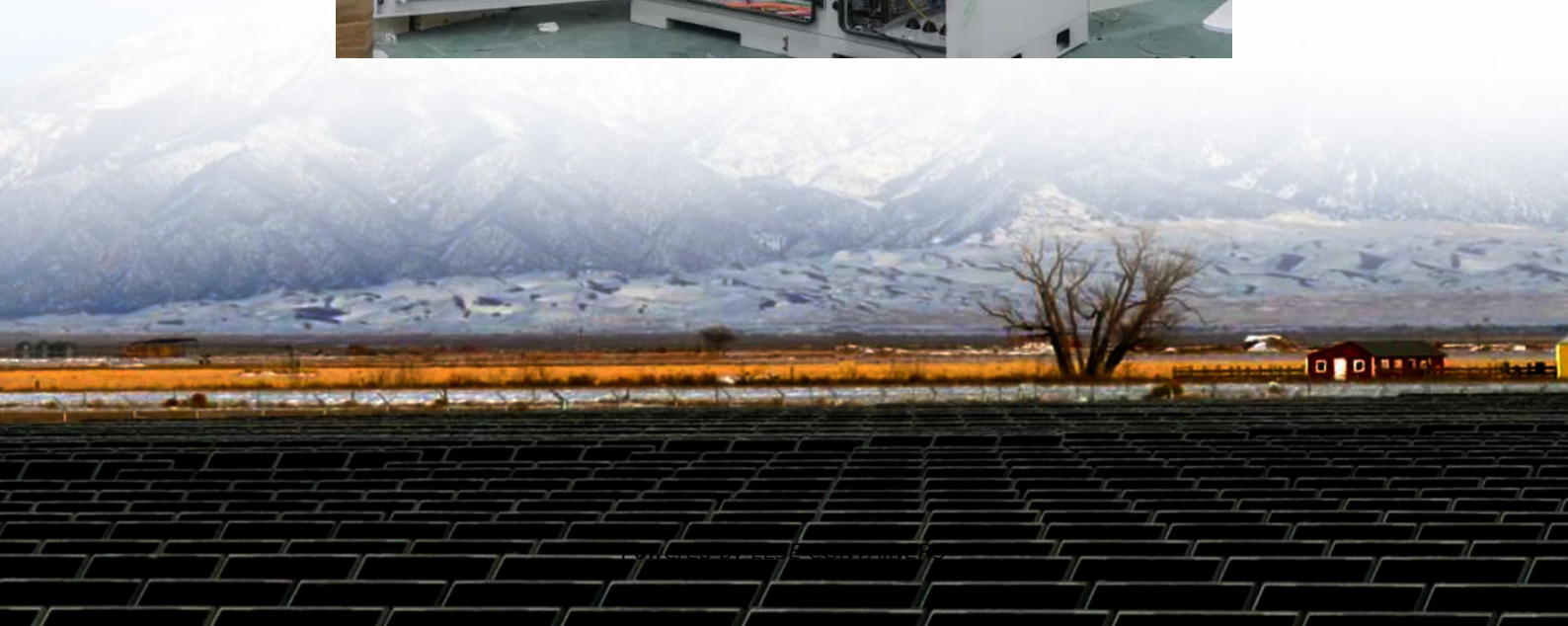


# Athens wind solar and energy storage microgrid





## Overview

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Why should a microgrid have an energy management system?

An energy management system is recommended in order to maintain a stable power balance for the microgrid. It provides a versatile and adaptable control for a range of circumstances, such as variations in load demand and the unpredictability of renewable energy sources.

Does a small-scale hybrid microgrid work?

This research proposes an effective energy management system for a small-scale hybrid microgrid that is based on solar, wind, and batteries. In order to evaluate the functionality of the hybrid microgrid, power electronic converters, controllers, control algorithms, and battery storage systems have all been built.

How does a microgrid charge a battery?

Fig. 21 displays the electricity at several microgrid locations. The battery is used to meet the initial load requirement of 100W, which is somewhat less than the electricity provided from renewable sources. The battery is charged from the extra power generated after 10 to 40 seconds, when demand is reduced.



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