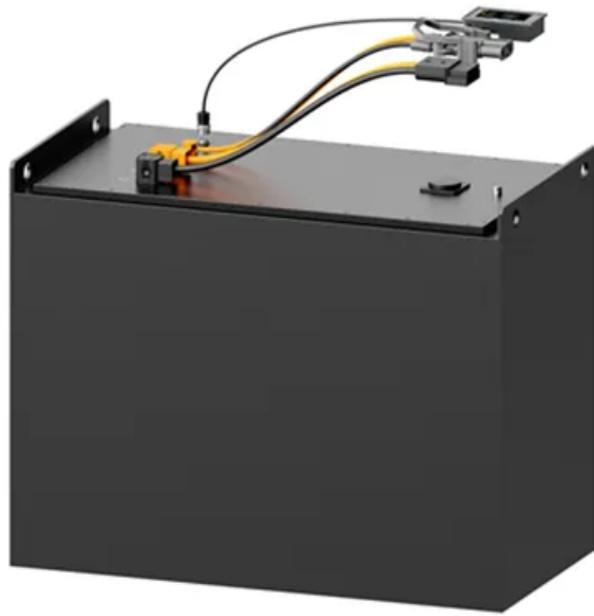


Large-scale energy storage management system design



Overview

When designing large-scale energy storage systems, engineers must take into account several key considerations that directly influence the performance, reliability, and integration of these systems within the energy grid. Energy management systems (EMSs) are required to utilize energy storage effectively and safely as a flexible grid asset that can provide multiple grid services. An EMS needs to be able to accommodate a variety of use cases and regulatory environments. Unlike small-scale backup batteries, these systems operate at utility or regional levels and serve diverse grid services such as: But storage systems are not just hardware—they include software. Grid-scale energy storage refers to the large-scale systems designed to store energy generated from various sources, particularly renewable energy.

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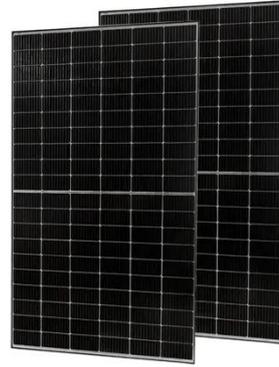


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