



FTMRS SOLAR

# Price Reduction for Off-Grid Mobile Energy Storage Containers Used in Ports





## Overview

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How can ports reduce the dependence on grid-supplied electricity?

To minimize the dependence on grid-supplied electricity, ports are also investing in renewable generation notably PV solar on warehouse roofing and parking areas. Energy storage is also needed to optimize utilization of in-port generation and avoid curtailment when generation exceeds the available demand.

How can ports reduce energy costs?

ESSOP has explored two ways in which ports can minimize their energy costs by using energy storage: • Optimising how to use PV solar generation to offset grid electricity. The wholesale price of energy varies every half-hour, and on a time-of-day tariff this variation is passed onto users.

Are energy storage systems reducing the cost of batteries?

The scale of the reduction suggests that in addition to the falling cost of batteries—BNEF’s recent Lithium-ion Battery Price Survey found that battery pack prices fell 20% year-on-year to 2024, again the biggest drop recorded to date—energy storage system providers are working on cost reduction in other areas, Kikuma said.

What is a solar grid connection capacity?

- Grid connection capacity = 100kVA. The figures below show the battery behaviour in summer and winter, to observe the impact of seasonal PV solar variation. Performance of a system with 120kWp of PV solar capacity in Summer, showing the small amount of grid energy needed to supplement the solar power.



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### Optimal planning of renewable energy infrastructure for ports ...



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