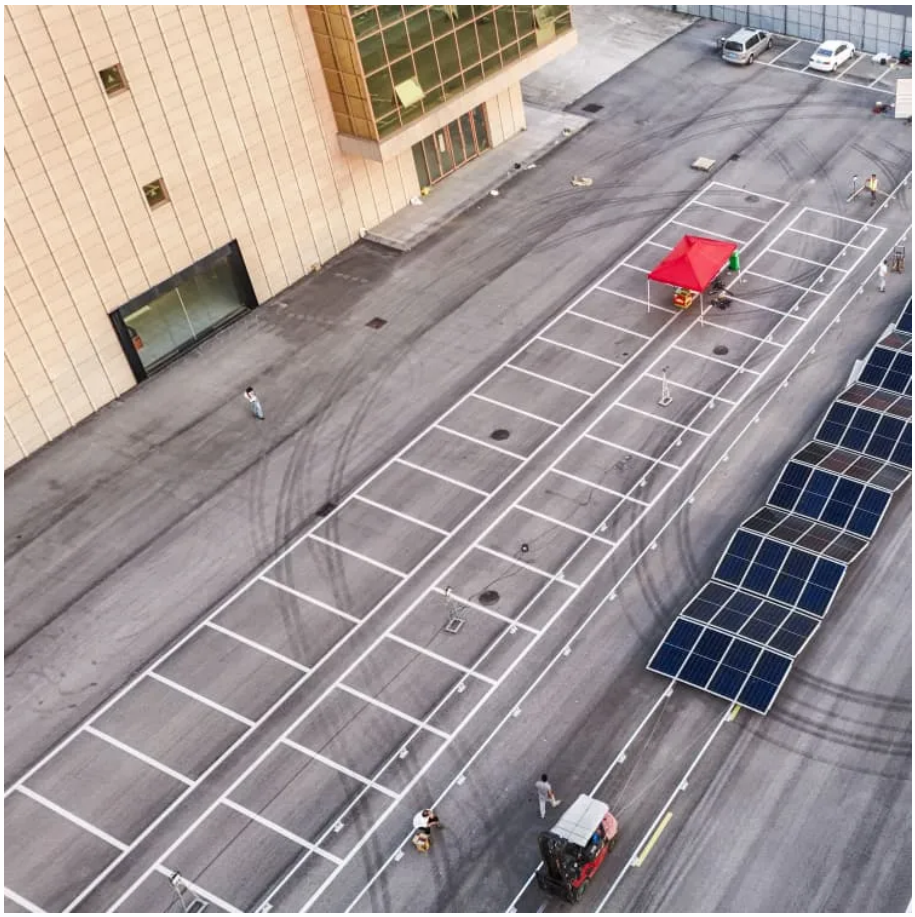
Off-grid cost of energy storage containers used in Middle Eastern ports



Overview

This report analyses the cost of utility-scale lithium-ion battery energy storage systems (BESS) within the Middle East utility-scale energy storage segment, providing a 10 -year price forecast by both system and component.

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For ports interested in electricity storage (for example, to reduce the peak load on their local distribution network) it is important to assess the different storage technologies available against their through-life cost. ESSOP has considered six different options: A review of Commercial Readiness.

electricity grids is causing a series of technical and institutional pro le East, storage will provide increased flexibility between supply and demand. Storage will help integrate variable sources like wind and solar by sm othing changes and shifting clean energy to peak demand hours, i.e.

% of global trade by sea. On the other hand, nearly 3% of greenhouse gas emissions worldwide are generated by the shipping industry, and up to 90% of emissions1 at ports embedded in our cities are caused b share of local pollution. Associated costs and health issues can also affect the port facili.

Falling technology costs and improving efficiency make containerized solar energy storage systems increasingly affordable in remote areas. Solar panel prices have dropped 82% since 2010, while lithium-ion battery costs decreased 89% over the same period. This enables 20-foot containerized systems.

Valued at USD 2.03 billion in 2024, the market is projected to reach USD 10.51 billion by 2031, growing at a compound annual growth rate (CAGR) of 25.3% (Cognitive Market Research). This rapid expansion is driven by the region’s increasing adoption of renewable energy and the need to balance supply.

The MENA region is starting to witness a drastic increase in large-scale battery energy storage systems (“BESS”) projects, accompanying a soaring penetration of renewable energy. This has happened at a pace, which seems to have surprised

many market analysts. In the past, forecasts for the MENA.

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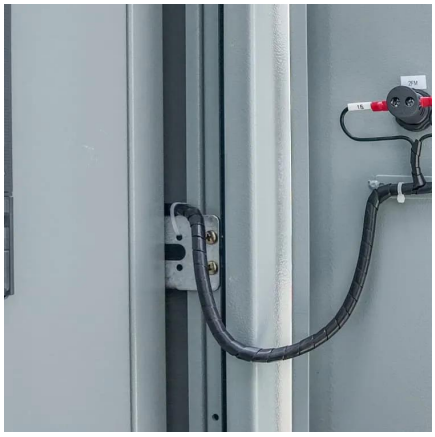

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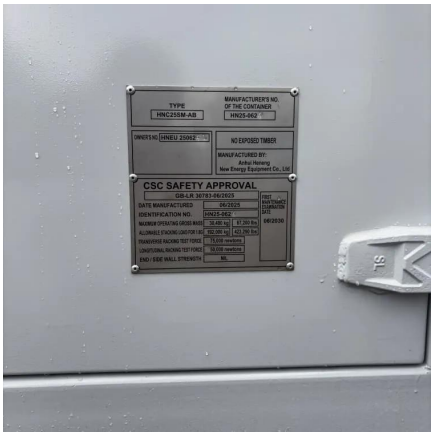

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