

Title: Off-grid cost of solar-powered container terminals in European ports

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What is a solar grid connection capacity?

o 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.

What is OPS for container ships?

OPS for container ships is a crucial part for all the ports involved," Anne Zachariassen, COO of Port of Aarhus and project coordinator, commented. As explained, the project is a direct response to new EU regulations that will come into effect in 2030, requiring ships over 5,000 gross tonnage to connect to onshore power supply while moored.

Do cruise ships produce more emissions than container ships?

Of the 31 ports studied, only 4 have installed or contracted more than half of the connections required by 2030. Because they spend significantly more time at berth, cruise ships produce more than six times more port-side emissions than container ships.

Do cruise ships emit more CO<sub>2</sub> than container ships?

Because they spend significantly more time at berth, cruise ships produce more than six times more port-side emissions than container ships. In 2023, Carnival's 3,500-passenger cruise ship, the Azura, emitted a whopping 22,800 tonnes of CO<sub>2</sub> in European ports.

Four Northern European ports have been granted EU funding for projects to reduce emissions from container ships moored at their quays.

The study by DNV on behalf of T& E shows that only one in five required onshore power supply (OPS) connections is currently installed or ...

In this paper, we deploy standard and widely used economic principles and methodologies, applied in the design of wholesale competitive energy markets, in a new ...

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Electrification is emerging as a key strategy for decarbonisation of shore-side energy demand at ports. However, this electrification, particularly involving electric shore-side ...

Different member states of neighbouring ports are shifting responsibility for the installation and operation of shore power to different actors, resulting in a lack of level playing ...

Discover how the European Port BESS Container transforms ports: slash diesel use by 9%, cut CO2 by 8,400 tons/year, and save EUR2.3M annually. Perfect for EU "Fit for 55" ...

With 2030 FuelEU Maritime targets approaching, many ports face grid capacity limits, high OPS costs, and infrastructure delays. Discover how flexible onshore power ...

Different member states of neighbouring ports are shifting responsibility for the installation and operation of shore power to different ...

Shore power installation costs vary significantly, ranging from hundreds of thousands to millions of dollars per berth, depending on ship power requirements and ...

Tired of European port emission rules and grid surges messing with shore power? BESS Container for Shore Power cuts emissions by 95-99%, saves \$300k-\$1.2M/year, avoids \$8M ...

ESSOP has explored two ways in which ports can minimize their energy costs by using energy storage: o Optimising how to use PV solar generation to offset grid electricity. The wholesale ...

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