

80kWh of collapsible containers for port terminals





Overview

Can a container terminal switch to a full electric operation?

Based on a case study WSP (2023), a container terminal with 80% of its equipment operating on diesel can reduce over 30% of its GHG emissions if it switches to a full electric operation.

Why did NREL work with a container port?

NREL also collaborated with a container port, Port of Honolulu, that provided data for an electric ship-to-shore crane, personnel vehicles, and reach stackers. The container port also provided crucial operational data of the port, including container throughput and shift hours. NREL calculated the hourly energy consumption for each equipment type.

How to electrify container handling equipment?

For electrification of container handling equipment and other port equipment, it is important to not only look at the investment costs and total costs of ownership, but it is also important to regard the electricity grid capacity within port areas. If this is not possible, contact with the electricity network operator is necessary on forehand.

How much energy does a port use per year?

We then applied these adoption rates to the annual energy consumption calculated for the top-25 U.S. ports. In a 100% electrification scenario in 2035, the annual energy consumption for all top-25 ports ranges from 1.61 to 2.03 TWh.



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