



1. SH Group's containerized battery solutions are key to Maersk's emission-reduction commitments



Containerized battery solutions

Electrically powered peak shaving is helping an offshore drilling service provider cut carbon emissions, and is contributing to meeting climate ambitions

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According to the United Nations, climate change is the defining issue of our time, and few would venture to disagree. Action is needed to counteract the global impacts of climate change. Many of the impacts are directly caused by greenhouse gas emissions, so reducing these emissions is therefore crucial. In its climate action plan, offshore drilling service provider Maersk Drilling is targeting a 50% emissions intensity reduction by 2030. As part of the work toward reaching this climate goal, the company has upgraded several of its I-class jack-up drilling rigs to low-emission rigs with a range of emission reducing features, including the use of containerized battery solutions to run generators more efficiently and less frequently. At the time of writing, this solution, developed by SH Group, is currently in the process of being installed on the Maersk Invincible.

Counteracting load fluctuations

On a drilling rig, power demand fluctuates greatly, peaking when cranes hoist the drill string out of the borehole, but remaining much lower at other times. As there must always be power available to cover all scenarios, crews have traditionally run the onboard generators continuously. As they mostly run at low loads, however, they can at times run inefficiently, consuming fuel and emitting carbon dioxide to little effect.

With batteries on board, it is a different story. These help the generators cover power demand peaks - when demand is low, one or more generators can simply be switched off, or they can be used to recharge the batteries, enabling them to run at their optimal duty point, where they produce the most power for the least fuel.

"Today we often run three generators at around 40% load," explains Maersk Drilling project manager Per Wentzel

2. The container solution is a self-contained, complete power solution system
3. Though there are cables and pipes to be connected, installation is remarkably simple to complete
4. Having the batteries in place enables more efficient operation of generators on the Maersk Invincible



Stochholm, who is in charge of selecting and installing the SH Group solution. "With the batteries, we will run two generators at around 70% load instead. This reduces maintenance because we're running fewer generators, and it optimizes our operating economy because we save fuel."

Saving fuel, by extension, means a reduction in emissions.

"With the full set of emission reducing features, including the batteries, we have reduced carbon emissions by 25% compared

with the rigs' baseline," says Maersk Drilling lead mechanical engineer Jan Høffner.

Plug-and-play solution

The containerized solution from SH Group is based on the company's extensive experience with electrification solutions for marine and offshore applications. It consists of a gas-tight, A60 insulated deck house complete with batteries, full HVAC system, fire extinguishers and battery management. The solution is ready to be craned aboard the rig and connected to onboard systems.

Having everything in one container increases flexibility and reduces onboard installation work. Even though many cables and pipes need to be connected, installation is "more or less plug-and-play", according to Stochholm. The SH Group solution complies with the newest DNV GL regulations and the Norwegian NORSOK standards.

SH Group was selected to deliver the battery solution for the Invincible because of the high quality of the company's products - and the fact that Maersk Drilling found SH Group easy to work with.

"We've had great cooperation with SH Group for a number of years," says Stochholm. "It delivers on time, and the quality is good. And it doesn't try to overcomplicate things!"

"SH Group is solution-oriented, and has some great guys working on this project," adds Høffner. "We talk about what we need and find solutions together."

On the Invincible project, this has included weekly status meetings to ensure

that everything is on track, making project management a joint effort.

An important step

Oil and gas will be a considerable part of the energy supply for many years to come. By reducing the carbon intensity of its operations, Maersk Drilling aims to contribute to extracting these natural resources in a responsible way. The containerized batteries on the Invincible are a step in the right direction for Maersk Drilling - and for the climate.

"We know that this will not take us all the way to our 50% target, but the solution from SH Group is an important step toward realizing our sustainability strategy," explains Høffner. "It's also something that our customers increasingly expect. In the oil and gas industry, there is increased interest in saving fuel in order to reduce emissions."

For SH Group, the project showcases a logical continuation of the company's efforts to reduce carbon emissions at sea.

"We have been working with marine electrification for years, and we are extremely happy to contribute our know-how and experience to reduce emissions with one of the leading players in the industry," explains Flemming Slumstrup, head of electrical service at SH Group.

Stochholm is confident that the SH Group solution has very real consequences for the operation of the Maersk Invincible, and for the climate.

"It's not just hot air," he concludes. "It really does have an effect." +

