

Everllence



Methanol retrofits
reducing containership
CO₂ Emissions
up to 90%

Maersk Halifax makes maritime history as the world's first large containership to be converted to methanol fuel. Its innovative dual-fuel engine allows the vessel to switch seamlessly between conventional fuels and green methanol, drastically improving its carbon intensity and setting a new shipping industry standard for sustainability.

Completed
on schedule in 88 days

Future-proofing today's Very Large Container Vessels for a green future!

"If you need to change the world fleet just by building new vessels able to sail on low-emission fuels, it will take too long," says Ole Graa Jakobsen, Vice President and Head of Fleet Technology at A.P. Moller - Maersk. "Retrofitting is critical in order to decarbonize the world fleet." Maersk opted to lead the way with its groundbreaking conversion of the **Maersk Halifax** to a dual-fuel Everlence B&W ME-LGIM engine.

Sustainable two-stroke engine retrofits

For decades at Everlence, our engines have been the backbone of the maritime industry,

its business by 2040, a decade ahead of international mandates from the IMO. While newbuilds play a crucial part, Maersk has also considered the role of existing container

meters long – into a more environmentally efficient ship while maintaining its full operational capabilities and minimizing downtime.

"Retrofitting is critical in order to decarbonize the world fleet."

Ole Graa Jakabson, Vice President, Head of Fleet Technology at Maersk Line

moving big things across oceans – and we're committed to supporting our customers' decarbonization journey to move those big things with little or zero emissions. Already today, we offer dual-fuel retrofit packages to convert two-stroke marine engines for operations on low-carbon fuels such as methanol, methane, ethane and LPG. Our Everlence B&W two-stroke engines provide unrivaled power and fuel flexibility to navigate the future of shipping.

Accelerating the maritime energy transition

Maersk has set an ambitious goal to achieve net zero across



ships like the **Maersk Halifax**, which has an operational lifetime that spans another 15 years. The challenge lay in transforming this 15,000-TEU container vessel – over 350

Greater long-term value for the Maersk Halifax

When embarking on this transition, Maersk worked with our team of Everlence specialists

from the outset. We proposed a full retrofit of the **Maersk Halifax's** Everllence B&W 8G95ME-C9.5 engine to a dual-fuel Everllence B&W 8G95ME-LGIM engine, allowing the ship to run on methanol and significantly cut emissions.

At the Asia Pacific Dockyard in Zhoushan, China, the **Maersk Halifax** was retrofitted for dual-fuel over 88 days and elongated during the process to accommodate methanol tanks and create additional space for containers, changing the length of the vessel to 368 meters and expanding its capacity to around 15,690 TEU. And our team worked closely with Maersk throughout the

this," says Graa Jakobsen, "and we're aware that many people are watching – we're the first movers doing a methanol retrofit, and it's important this becomes a success."

Maximize your decarbonization with dual-fuel retrofits

The **Maersk Halifax** conversion paves the way for similar projects across the global fleet. Our scalable retrofit solutions at Everllence can be applied to various vessel types, enabling faster and more cost-effective decarbonization.

"Our retrofit solutions for Everllence B&W two-stroke engines provide unrivaled fuel flexibility to navigate the existing world fleet toward a net-zero future."

Benjamin Attumaly, Project Sales Manager, Two-Stroke Solutions, Everllence PrimeServ

process to make sure the engine could operate on methanol. From detailed planning and component removal to the installation of dual-fuel parts, integration of the methanol fuel supply system, and final testing. The vessel now runs with the same load responses as before, but with less emissions and far greater long-term value.



Seamless fuel switching between diesel and methanol

One of the advantages of this system is a seamless transition between different fuel types. The **Maersk Halifax** can easily switch between single-fuel mode (fuel oil or diesel), and dual-fuel (methanol) mode for continuous and smooth operation. This allows Maersk more flexibility on fuel choice, taking advantage of optimal fuel prices.

Maersk: a global leader in shipping

Founded in 1904, A.P. Moller - Maersk is a global leader in container logistics and vessel operations. With a fleet of over 700 vessels, the company is a pioneer in proactively reducing emissions and setting new industry benchmarks. "It's a huge undertaking to make a retrofit like

Our dual-fuel retrofit solutions alone could slash the industry's global greenhouse gas emissions by ca. 20 percent.

And as with the **Maersk Halifax**, we take care of the full retrofit process of the engine for our customers, starting with R&D and engineering and moving right down to sea trials, crew training and certification. An engine is like the heart of a ship, and we take full care of the heart during the conversion. **Choosing retrofits is the most cost-effective way to build a dual-fuel fleet today, maximizing decarbonization per dollar spent.**

Learn more about how our solutions can benefit your fleet. Contact us via RetrofitDK@everllence.com for a vessel-specific consultation.

CO₂ emission savings

approx. 50,000 tons per year

Principal ship particulars

Including tonnage and size for the **Maersk Halifax** before and after the retrofit and upgrade:

SHIP example	Maersk Halifax
IMO Number	9784271
Vessel type	Container / Post Suezmax
Flag	Singapore
Gross tonnage	185,317 tonnes (originally 178,257)
DWT	15,690 TEU (originally 15,000)
Length	368 meters (originally 353)
Breadth	54 meters
Max draught	16 meters
Original engine	Everllence B&W 8G95ME-C9.5
Retrofitted engine	Everllence B&W 8G95ME-LGIM Mk9.5
Year of build	2017
Builder / shipyard	Hyundai HI (Ulsan) – extended and methanol retrofitted at Xinya, Zhoushan
Classification Society	ABS
Home port	Singapore
Owner and manager	Mærsk



Why dual-fuel retrofits are a sustainably sound choice

Lower carbon footprint

The conversion substantially reduces CO₂ emissions, supporting Maersk's decarbonization efforts to reach net zero by 2040.

Fuel flexibility

The retrofitted engine can run on both conventional fuel and methanol, ensuring adaptability in a changing fuel landscape.

Faster sustainability gains

Retrofitting existing vessels accelerates the adoption of dual-fuel technology without waiting for newbuilds, and retrofitting vessels emits 35 times less CO₂ compared to constructing newbuilds.

Efficient execution

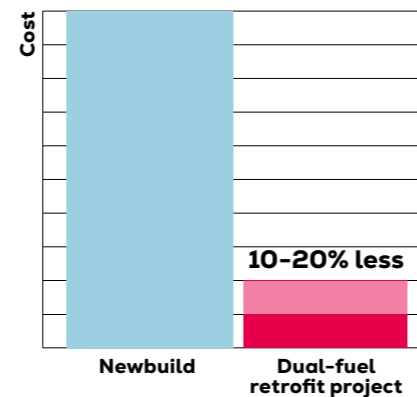
The conversion was completed on schedule November 2024, over 88 days, within budget and with minimal operational disruption.

Regulatory readiness

The updated engine meets current environmental regulations and is ready for future requirements, including relevant regulations, such as CII, FuelEU Maritime and IMO MEPC 83.

Newbuilds vs. retrofits:

A cost-effective way to onboard dual-fuel tonnage



Retrofitting lets you acquire dual-fuel tonnage at 10-20% the cost of a dual-fuel newbuild.

"Retrofitting is a practical pathway to decarbonization, offering shipowners a scalable solution for dual-fuel operations"

Martin Lyager Hansen, Head of PrimeServ Marine & Power China, Everllence



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