

With the marine industry striving to drive down emissions, recent tests promise a bright future in marine use for biodiesel

# Cleaner marine shipping with advanced biofuels

**M**aritime transport is looking for new ways to reduce carbon dioxide and sulphur emissions. At the beginning of 2017, the Marine Environment Protection Committee of the International Maritime Organization (IMO) adopted a global sulphur cap requiring all ships to use fuels with a maximum 0.5% sulphur content, as of 1 January, 2020.

Recent tests on a diesel-powered dredger in the Netherlands yielded promising results for UPM BioVerno diesel. The tests were performed by dredging and marine specialist Boskalis and GoodFuels Marine, a provider of sustainable marine biofuels.

“This was the first time that UPM BioVerno was tested in a marine vessel. So far, it has been used in road traffic, where it performed excellently in all diesel engines,” says Sari Mannonen, head of UPM Biofuels. UPM BioVerno is produced at UPM’s Lappeenranta Biorefinery, Finland.

## Shrinking carbon footprint

GoodFuels, Boskalis and marine engine manufacturer Wärtsilä have established a consortium running a two-year pilot programme to accelerate the roll-out of sustainable biofuels in the marine industry. UPM BioVerno is the first wood-based biofuel to be tested in

an operating marine vessel.

“We are extremely proud to bring in UPM as a new partner in our ground-breaking test programme. This co-operation will help to further accelerate the supply of sustainable biofuel to the global maritime industry,” says Dirk Kronemeijer, CEO at GoodFuels Marine.

The marine industry is currently looking for cost-efficient ways to reduce shipping emissions in compliance with new international regulations. Sulphur emissions can, for instance, be reduced by equipping the vessels with sulphur scrubbers, but this is a costly investment.

“UPM BioVerno is a sustainable, competitive fuel that can be used in marine engines without any additional investments, which makes it a cost-effective alternative in reducing shipping emissions,” notes Mannonen.

Sustainable biofuels enable shipping companies to reduce the CO<sub>2</sub> emissions of their vessels by up to 80-90%. Biofuels also eliminate sulphur oxide emissions, and reduce nitrogen oxide emissions by approximately 10% and particulate matter emissions by 50%. Current estimates predict that biofuels could account for 5-10% of all marine fuels by 2030.

“The successful test is an important step for us, as it opens up a new customer segment for UPM BioVerno in the future,” says Mannonen.

## The Netherlands leads the way

The Netherlands is a frontrunner in the reduction of CO<sub>2</sub> emissions. The Dutch environmental organisation Natuur & Milieu is encouraged by the test results achieved by GoodFuels and Boskalis. “This project is a true example

for both the shipping and the biofuels industry of the successful utilisation of waste- and residue-based biofuels,” says Maarten van Biezen, mobility policy director at Natuur & Milieu.

The test was performed in the first half of 2016 during dredging operations for the Marker Wadden Eco-Islands landscaping project. The test resulted in a CO<sub>2</sub> saving of 600 tonnes for the duration of the project. Marker Wadden is a large-scale project in the Markermeer in Central Netherlands. Islands and wetlands are being constructed to restore the area’s delicate ecosystem. The wetlands will provide important nesting areas for birds, and the underwater landscaping will create new spawning grounds for fish.

The new nature reserve helps protect endangered animal and plant species. There are also plans to



Boskalis vessel EDAX cutter suction dredger has successfully used biofuel in bio/fossil blends going up to 50%

Source: Straystone / Boskalis

develop the Marker Wadden area as an important destination for nature tourism.

**Marine biofuels promoted in CNN**

In January 2017, a CNN film crew visited UPM Lappeenranta Biorefinery and Mannonen was able to espouse the benefits of using advanced biofuels for the marine sector. They also interviewed Dirk Kronemeijer from GoodFuels. In an Eco Solutions programme entitled 'The sustainable fuel growing on trees', Mannonen discusses the process of making UPM's wood-based diesel fuel. UPM BioVerno diesel is derived from crude tall oil, a residue of UPM's own pulp production, which mostly originates from Finnish forests.

Mannonen explained UPM's commitment to sustainable forestry by saying how



Source: Straystone / Boskalis

Dutch Marker Wadden Eco-Islands in the middle of the Markermeer lake

UPM uses every piece of the wood when a tree is taken out of the forest. The company knows the origin of its wood and plants 50 million new seedlings per year. As some 90% of the trade moves through oceans,

the pollution from the mode of transport affects us all.

Kronemeijer said that the GoodFuels would be working in conjunction with UPM to supply the BioVerno diesel to the shipping industry. He also commented that the

world need to get rid of "dirty" fossil fuels used in marine as soon as possible. ●

**For more information:**

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