

NIIGATA AND DEUTZ ITALY

# ALL YOU NEED IS POWER



**T**he Power B.U. of Deutz Italy provides aftersales services to many shipowners, working on various engine brands, from old Deutz KHD to MWM, GE Transportation and Niigata», says Gennaro Vinetto, head of Niigata engines at Deutz Italy. «Our Japanese partner allows us to operate independently, providing excellent technical support. At the moment we're supporting about twenty tugs and OSV (Off-shore Supply Vessel) equipped with main engines and Niigata azimuthal thrusters. I'd like to mention in particular the Dutch shipowner Vroon, which owns a fleet of about 150 ships (mainly OSV, but also bulk carriers, tankers and container carriers) and employs 3000 people on board and on land. The operations of the Vroon

ships located in the Mediterranean - about twenty - are managed by a branch in Genoa. Among these, four OSV are equipped with main engines

Niigata is the main competitor of Wärtsilä on medium speed marine engines for commercial applications. Deutz Italy is a strong partner of the Japanese player in Europe. Let's take a look at two case studies, off Karachi and Venice

delivering 2,400 kWm each at 750 rpm and Niigata azimuthal thrusters. The units are mechanically operated, but equipped with sensors to prevent failures».

Deutz Italy has two supply projects ongoing for Niigata engines, one ended at the beginning of the year, the other is still ongoing. The first project belongs to Augustea Transshipment and is the transformation of a 229-meter bulk carrier, the River King Master (registered in 2010), into a transhipper for the Sea-To-Sea Coal Transshipment.

#### What requirements made Niigata's offer prevail?

Essentially the profile of the groups aligns with three macro-requirements: the engines must be medium

speed, powered by both marine diesel oil and heavy fuel oil (Hfo), and provide a convincing value for money.

As soon as its 'metamorphosis' ended, the ship went to the operational area, opposite the coast of Pakistan: the shallow seabed off Karachi does not allow materials handling through the docks. Deutz Italy provided three 2,000 kW each gensets, equipped with 2,100 kWm at 720rpm Niigata medium speed units (the electric power of the engines is 2 MW), assembled at the Ohta plant in Japan. The 6L28Ahx (BxS 280 x 390 mm), delivering 2,100 mechanical kW at 720 rpm, is the low entry of the AHX range, which also comes in 8 and 9 cylinders, still in line, and 12, 16 and 18-cylinder V architecture, which goes up to 6,570 kWm.

#### Where does the need to increase the ship's power capacity come from?

The need for the additional 6 MW, compared to the pre-existing electrical power available, stems from the requirements of three Liebherr cranes and two Bedeschi conveyor belts. The second project is also very interesting. As it is a pioneering application in the Mediterranean, the mission profile is that of LNG bunkering. Niigata provides the Marpol propulsion engines Dual Fuel, TIER III Annex VI for a tugboat.

The ship will operate in front of the Venice Lagoon. Again we find a medium speed, the 8L28Ahx-DF, 2,560 kW at 800 rpm, marine dual fuel (diesel - LNG), four stroke,

## ABOUT NIIGATA

Niigata is one of the brands of IHI Power Systems, which is part of IHI Corporation that celebrated in 2019 the centenary of its first diesel engine and the 50th anniversary of the first Z-Peller® azimuthal engine. Niigata is the main competitor of Wärtsilä, boasting a 16% market share in the medium speed segment between 1,500 and 5,000 kW compared to 20% of the Finnish brand. Marine applications include boats for commercial use, medium speed diesel within 500 – 6,700 kW power range, while the dual fuel range delivers from 1,900 to 2,900 kW. Z-Peller® azimuthal engines are also part of Niigata marine range, featuring both FPP (fixed pitch) and CPP (variable pitch) propellers, bollard pull (push/pull) from 25 to 110 tons and 700 – 3,300 kW power range. Coming to stationary engines, the range includes both diesel and gas medium speed, ranging from 2,200 to 6,600 kW.

#### Koji Yahagi, Niigata President and CEO:

«On June 2, 1919 Niigata successfully completed the in-house development of Japan's first marine diesel engine, the M4Z (...) As always, we adhere to our basic corporate philosophy of making continuous efforts to meet the needs of the times.»

Miller cycle with VIVT system (variable intake valve timing), micro-pilot direct injection ignition (marine diesel oil or diesel lean gas), burn system. Niigata also provides the FGGS system (Fuel Gas Storage System). The tugboat is used to tow a barge equipped with tanks to store 4,000 cubic meters of LNG and 1,000 cubic meters of diesel, and to power the electric services of the barge. Propulsion units must respond promptly to changes in load, even in harsh weather conditions. The engine starts and stops on diesel and automatically switches from gas to diesel in emergency situations to meet higher demand for power. When working on diesel, it's IMO-Tier III compliant, also thanks to the two SCR installed.