



Stena  
**EMAX** *air*

A revolutionary new design of a 15,000 DWT product tanker

LNG-powered with **32%** less bunker consumption  
Redundant Safety

Probably  
the **GREENEST** Tanker  
in the World

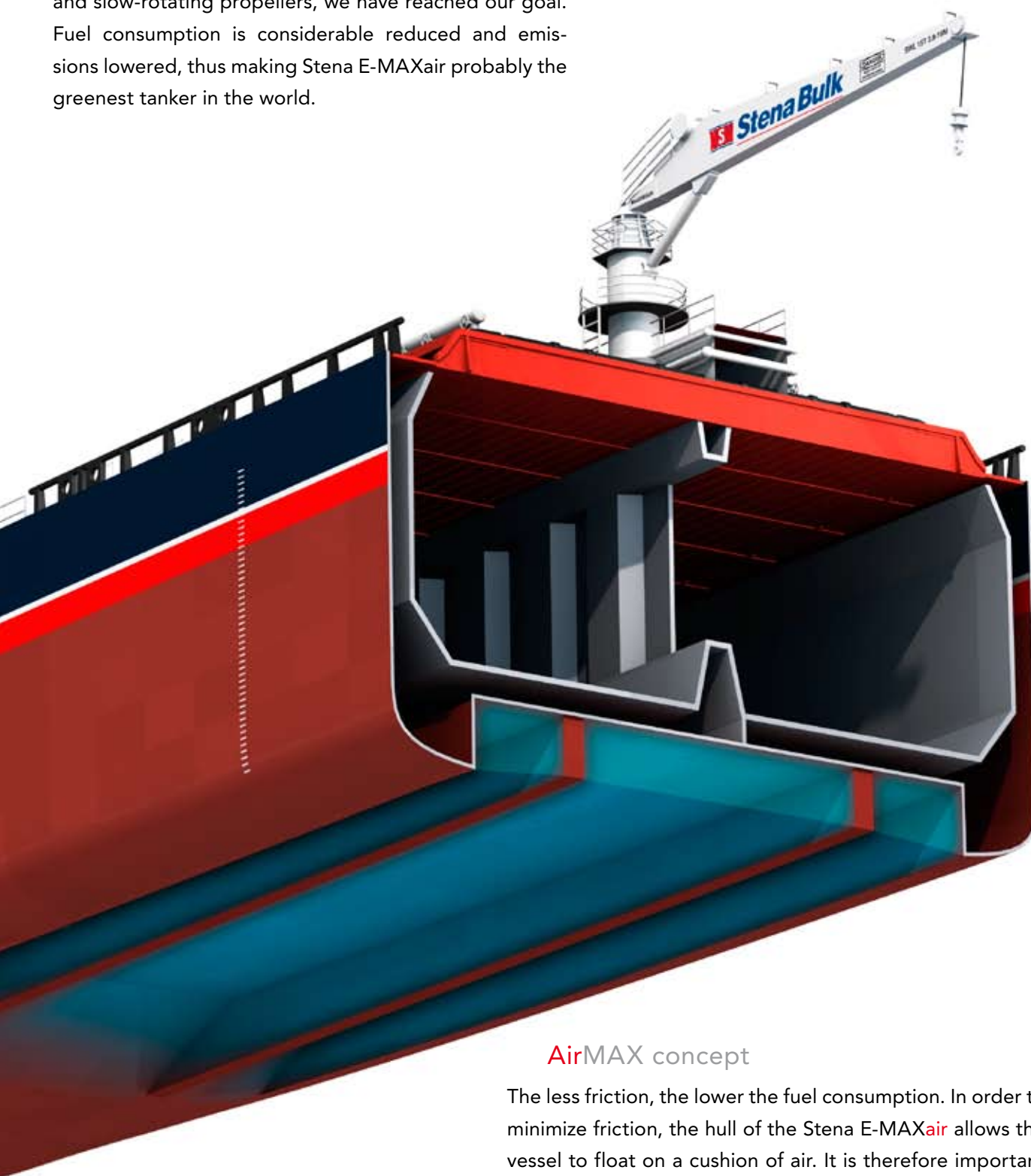
# Probably the **greenest** tanker in the world

The Stena E-MAX<sup>air</sup> is an important step in our common ambition to create more sustainable shipping. Concern for the environment, in combination with extremely competitive transport economy and a maximum of safety, are the entrance tickets to new markets and new business opportunities.

The main focus of the Stena E-MAX<sup>air</sup> concept is on dramatically reduced energy consumption and emissions and full redundancy with double engines, double steering gear and double navigation systems. She will still do an equally good, if not better, job as existing intermediate tonnage and will have ice class 1A. She will, of course, be built in accordance with the Stena MAX concept regarding redundancy, safety and large cargo intake on a shallow draft.



With the help of engines running on LNG, the newly developed **AirMAX** concept, an optimized hull design and slow-rotating propellers, we have reached our goal. Fuel consumption is considerably reduced and emissions lowered, thus making Stena E-MAXair probably the greenest tanker in the world.



### **AirMAX** concept

The less friction, the lower the fuel consumption. In order to minimize friction, the hull of the Stena E-MAXair allows the vessel to float on a cushion of air. It is therefore important to maximize the flat bottom area, providing a generous air-surface. The patented bulb (Patent no. PCT/SE2008/051050) of the Stena E-MAXair minimizes the turbulence that could interfere with the air cushion.

## Stena MAX-concept

The MAX concept, combining innovation with the latest available technology, has become a global concept for safety at sea and superior transport economy. Just like an aircraft, proactive safety is the main issue. All systems for propulsion and maneuvering are doubled and function independently. At sea, safety is ultimately an environmental issue.

## Stena E-MAXair - a new dimension in fuel economy

### 1 Optimized hull configuration (Patent no. PCT/SE2008/051050)

The hull is optimized for the water flow when cruising at 13 knots. In combination with two large, slow-rotating propellers, this reduces fuel consumption.

### 2 AirMAX – the Stena EMAXair floats on air

The hull construction allows the Stena E-MAXair to float on a cushion of air. The air pocket under the vessel is extended forward with help of the newly developed bulbous bulb (Patent no. PCT/SE2008/051050). Air pressure is maintained by compressors and since friction between water and air is lower than between water and hull, resistance is reduced.

### 3 LNG – Clean and efficient

LNG, liquefied natural gas, is by far the cleanest and most effective fuel available for vessels today. The overall economic picture is actually even brighter as burning LNG reduces the need for engine maintenance.

### 4 The Stena EMAXair sails with air

When winds are favorable, the Stena E-MAXair can reduce fuel consumption even further by using the specially designed “kite sail”.



### Why the Stena E-MAXair is economically superior to a conventional tanker of comparable size

Stena E-MAXair	Metric tons of fuel /day
1. Optimal configuration of the hull	saves 2.5
2. AirMAX concept	saves 1 – 1.5
3. LNG energy density	saves 2
4. Kite sail	saves 0.5 –1
<b>Total savings:</b>	<b>7 metric tons of fuel /day</b>

Cruising at a speed of 13 knots, the Stena E-MAXair consumes 15 mt of LNG fuel per day while a traditional tanker of the same size consumes 22 tons of fuel oil at normal service speed, an astonishing 32% reduction! Lower fuel consumption makes a great difference – it benefits the environment and improves transport economy.



Patent no. PCT/SE2008/051050



# LNG Clean efficiency for a sustainable environment

The Stena E-MAX<sup>air</sup> is designed to run on LNG, liquefied natural gas, however, the main engine as well as the auxiliary engines can also run on regular diesel fuel. Today, LNG is without a doubt the cleanest fuel for vessels.

With its engines running on LNG, the Stena E-MAX<sup>air</sup> produces 35-40% less carbon dioxide than a conventional vessel of comparable size, 90% less nitrogen oxide, no sulphur oxide and 99% fewer particles – and all this without using catalytic converters!

Fully bunkered with LNG, the Stena E-MAX<sup>air</sup> can sail non-stop for 22 days. Unless trading in an area where LNG bunker is available, the vessel can use regular fuel oil. Running on LNG has secondary economic effects, as it reduces the need for maintenance of both the main and the auxiliary engines.



*Oil should always travel first class!*



## MAIN PARTICULARS

Classification	DNV
Class notation	DNV [or similar LR] + 1A1, Tanker for Oil Product, ESP, Tanker for Chemicals (IMO 2), NAUTICUS (Newbuilding), ICE 1A, LCS-DC, RP, NAUT-AW, ETC, CCO, E0, VCS-2, TMON, CLEAN Design, BWM-T, BIS, Flag: EU



## PRINCIPAL DIMENSIONS

Length, overall	158 m
Length, between perpendiculars	148 m
Breadth, moulded	23 m
Depth, moulded	10.8 m
Draft, design (brackish water)	7.5 m
Draft, scantling (abt)	8.2 m
Deadweight, design (brackish)	14,300 tons
Deadweight, scantling	16,400 tons
Liquid volume (100%)	18,200 m <sup>3</sup>



## MACHINERY

Main engine power output (MCR)	approx. 1 x 5.7 MW
Aux engine power output (MCR)	approx. 2 x 2.7 MW
Bow thruster power output	1,000 kW
Propulsion electric motor	2 x 3 MW @ 6600 V – 50 Hz



## CARGO ARRANGEMENTS

Tanks	7 x 2 Cargo tks + Slop tk + Drain tk
Tank coating	Phenolic Epoxy
Tank heating	Steam, deck heaters



## ENVIRONMENTAL

Bunker consumption at design draft	15 mt LNG/d or 17 mt HFO/d
CO <sub>x</sub>	35-40% less
NO <sub>x</sub>	90% less
SO <sub>x</sub>	None
Particles	99% less