



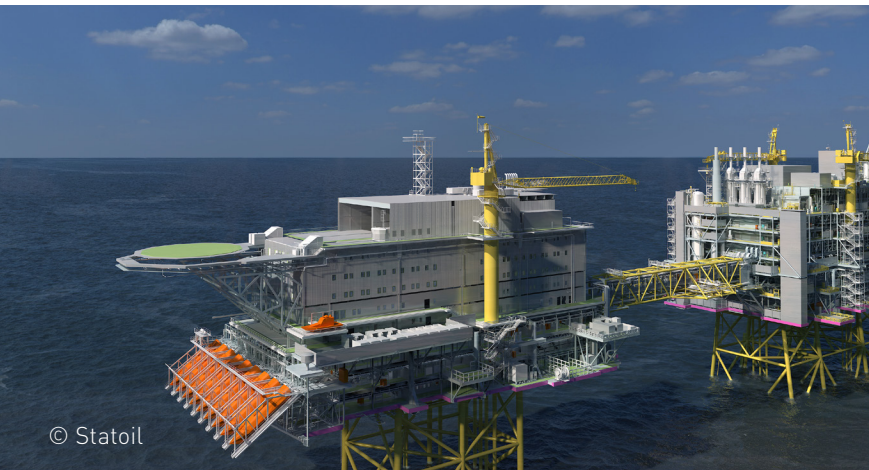
Finnish Marine Industries coordinates the cooperation in industrial and economic policy among the companies at the branch. The association's members include leading marine equipment manufacturers, turnkey suppliers, design offices, software and system providers as well as shipbuilding, ship repair and offshore yards.

Finnish Marine Industries represents its members in the European Ships and Maritime Equipment Association (SEA Europe).

**marineindustries.fi**



© Arctech



© Statoil



**Meriteollisuus  
Finnish Marine Industries**

## Arctic & Offshore

Environmentally sound maritime  
technology from Finland

## Greener vessels for sustainable shipping

The Finnish marine industry is a pioneer in developing environmentally friendly solutions for arctic conditions. **Polaris**, for example, is one of the most environmentally friendly icebreakers in the world. It was **constructed by Arctech Helsinki Shipyard** and delivered in 2016 for the harsh conditions of the Baltic Sea. Polaris is the first LNG icebreaker in the world. It uses both LNG (liquefied natural gas) and low-sulphur diesel as its fuel, which diminishes its emissions and operational costs. The icebreaker aspires the zero-emission principle and does not discharge any waste or polluting substance into the sea.

There are still more features that help conserve the environment: Polaris has the ability to perform oil spill response duties. Moreover, the icebreaker has a design lifetime of 50 years, more than any other Finnish icebreaker.

## Environmental features offer better performance

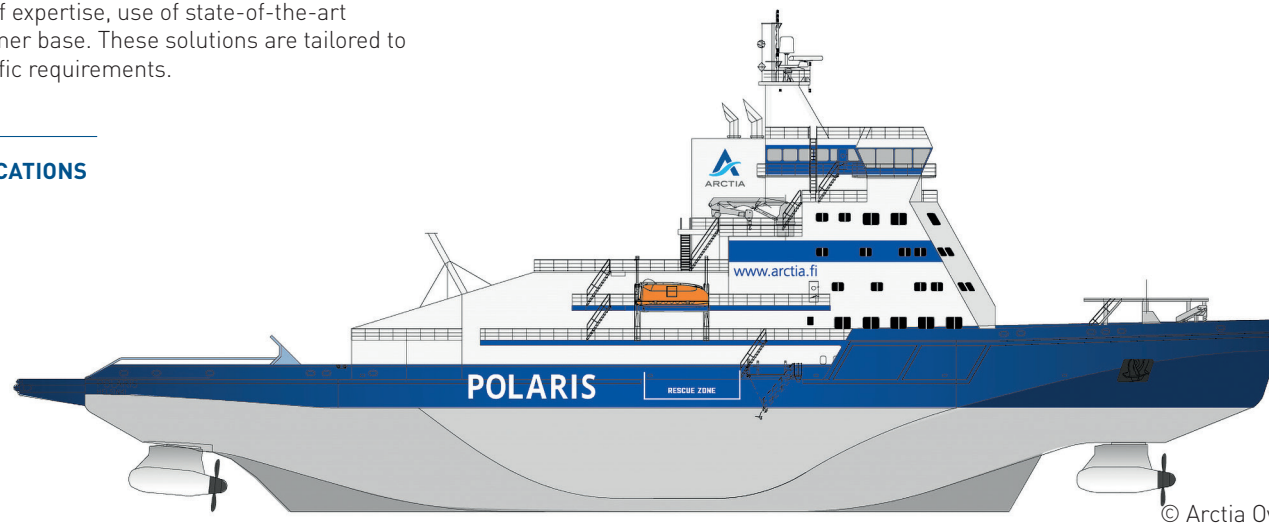
Polaris is the most powerful vessel in the Finnish icebreaker fleet and very maneuverable with three azimuth propulsors. In addition, Polaris is the world's first vessel to fulfill the requirements of the Polar Code, developed to protect the sensitive Arctic waters and nature.

The Finnish marine industry spends a vast amount of resources in developing green technology. The industry has prepared for customers' new requirements by developing state-of-the-art solutions such as scrubbers and engines using low-sulphur fuels. Many Finnish companies develop groundbreaking fuel saving systems. Other green products include marine water management systems and waste heat recovery systems, to mention some.

Ecologically sustainable products are some of the countless success stories of the Finnish marine industry, all of which include the same ingredients: continuous development of firms staffed by employees possessing the highest levels of expertise, use of state-of-the-art technology, and a global customer base. These solutions are tailored to the individual customer's specific requirements.

### POLARIS TECHNICAL SPECIFICATIONS

Length 110 m  
 Breadth maximum 24 m  
 Draught 8 m  
 Installed power 21 MW  
 Propulsion power 19 MW  
 Speed 16 knots  
 Speed at 1.2 m ice 6 knots  
 Crew 16 + 8  
 Range 30 days  
 (10 days on LNG and  
 20 days on fuel oil)



### FINNISH MARINE INDUSTRIES' MEMBERS THAT PARTICIPATED IN THE DESIGN AND CONSTRUCTION OF POLARIS:

ABB  
 Aker Arctic  
 Alfa Laval Aalborg  
 Allstars Engineering  
 Antti-Teollisuus  
 APX-Metalli  
 AQ Trafotek  
 Caverion Industria  
 Deltamarin  
 Elomatic  
 Foreship  
 FSP Finnish Steel Painting  
 Halton Marine  
 Helkama Bica  
 (Arctech) Helsinki Shipyard  
 Insinööri-toimisto Comatec  
 Kavika  
 Kemppi  
 KONE  
 Laivasähkötyö  
 Lamor Corporation  
 Lautex  
 Metalliasennus Huuhka  
 Mobimar  
 NAPA  
 Onninen  
 Paroc  
 Piikkio Works  
 RR Site Service  
 Saajos  
 SBA Interior  
 SSAB Europe  
 SDS Aura (Etteplan)  
 Tebul  
 Wärtsilä

### OTHER FINNISH MARINE INDUSTRIES' MEMBER COMPANIES WHICH SUPPLY SMART AND ENVIRONMENTALLY SOUND TECHNOLOGY:

ALMACO Group  
 Atexor  
 Beacon Finland  
 Bertel O. Steen Power Solutions Finland  
 Bluetech Finland  
 Cadmatic  
 EIE Maskin  
 Emmanoa  
 E.U.-Adhoc Project  
 Evac  
 Furuno Finland  
 IBM Finland  
 I.S. Mäkinen  
 ISOVER (Saint-Gobain Finland)  
 Jalmare  
 Jukova Corporation  
 Kaefer  
 Koja  
 Kongsberg Maritime Finland  
 Kvaerner Finland  
 Machine Technology Center Turku  
 MAN Energy Solutions  
 Marioff Corporation  
 Merima  
 Mesekon  
 Metos  
 Meyer Turku

NIT Naval Interior Team  
 nora flooring systems  
 Norsepower

Oilon  
 Orsap

Parmarine  
 Pemamek  
 Pinja Industry Solutions  
 Pori Offshore Constructions  
 Prizztech  
 Promeco Group

Rauma Marine Constructions  
 R&M Ship Technologies Finland

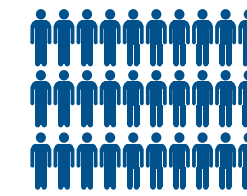
S.A.Svendsen  
 SeaKing  
 Seaside Industry Park  
 Rauma  
 Shipbuilding Completion  
 Steerprop  
 Stelio  
 Suomentahden Telakka  
 TEVO Lokomo  
 The Switch Engineering  
 Turku Repair Yard

Uki Workboat

Vallita Marine  
 Valmet  
 VTT SenseWay

Wiima Logistics

## Finnish Marine Industry in the Finnish Society



Finnish marine industry employs 31 000 people



Annual turnover 9 billion €



1 100 companies in the industry

Source: Brahea Centre at the University of Turku

## Marine industry consists of:



Marine equipment manufacturers



Turnkey suppliers



Design offices



System suppliers



Software providers



Shipbuilding, ship repair and offshore yards

marineindustries.fi