

Pressemitteilung

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The new Polarstern: Contract for new German research icebreaker awarded

Good news for the German research fleet, German shipbuilding, and international polar research alike: the new Polarstern will be constructed in Wismar by thyssenkrupp Marine Systems. The company received the official contract to construct a new research icebreaker from the Alfred Wegener Institute (AWI) today, marking the end of a two and a half-year-long Europe-wide call for tenders. The new flagship of German climate research will cost an estimated 1.185 billion euros. Following five years of construction, she is to be handed over to the research community in 2030.

Federal Research Minister Cem Özdemir explains:

"Yesterday, the Bundestag's Budget Committee cleared the way for the construction of one of the most modern research vessels in the world. I am very pleased that the Polarstern II is expected to be put into service for polar and marine research at the end of the decade. Its predecessor, the Polarstern I, has already provided us with essential findings in research into the consequences of climate change for the Arctic Ocean and our planet. We cannot do without these research results if we want to understand climate change and anticipate its consequences. That's why we need Polarstern II."

To ensure that polar and marine research could continue to be pursued at the highest scientific and technological level, in 2022 Germany's Federal Ministry of Education and Research (BMBF) enabled the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), to announce a call for tenders and coordinate the construction of a modern, high-performance and sustainable successor ship. Ever since, the roughly 20-member project team at the AWI, led by Detlef Wilde, has been working to make that happen.

According to Kathrin Moosdorf, Senator for Environment, Climate and Science, Federal State of Bremen: "The fact that the AWI will receive a new research vessel is very good news for our science hub. Supporting climate protection and nature conservation on the basis of the best available science is particularly important to me. With the new Polarstern, this research will continue to produce impacts at the highest international level, and Bremerhaven and Bremen will benefit from the attention that such a modern research icebreaker attracts."

"We're delighted that the construction phase finally begins," says Prof Antje Boetius, Director of the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI). "We had to wait a very long time for this moment. As much as we love our old Polarstern, the scientific community urgently needs a new research vessel capable of employing current technologies. Thanks to the planned onboard assets, such as underwater robots, unmanned drones and new drilling technologies, we will be better equipped to tackle new and pressing research questions. I'm also very pleased that in this way Germany will be able to provide outstanding support for the new UN Decade of Action for Cryospheric Sciences and the International Polar Year."

Measuring approximately 160 metres long, more than 27 metres wide and over 14 metres tall, on every cruise the new Polarstern will make it possible for 60 to 90 researchers from around the globe and a crew of 50 to bring essential insights into the impacts of climate change, the functions of polar biotic communities, and environmental protection

back from the polar regions. To support interdisciplinary Earth system research, the ship will include labs and equipment to meet the needs of various fields: from geology and geophysics to biology and oceanography, to sea-ice and atmospheric research. The new Polarstern will be capable of sailing more than 300 days a year, under changing ice and weather conditions.

"We're very pleased about being awarded the contract to construct the 'Polarstern II' at our facilities in Wismar," says Oliver Burkhard, CEO of thyssenkrupp Marine Systems. "The decision is a vote of confidence in thyssenkrupp Marine Systems to demonstrate its capabilities in the civilian Division as well. In addition, today's announcement shows that we can offer outstanding technological products at internationally competitive conditions. Using sustainable propulsion technologies to advance shipbuilding is a major undertaking, and one we look forward to. For our Wismar site, today's decision is an important signal for tomorrow: realistically speaking, to work at maximum capacity both above and below the waterline, we could create ca. 1,500 new jobs."

For one thing, the new research vessel will offer higher ice-breaking performance than her predecessor – with a "Polar Class 2" rating, which means she'll also be able to penetrate areas where the ice is too thick for today's Polarstern, like the southern Weddell Sea in the Antarctic. As a multidisciplinary research platform, the new Polarstern will feature cutting-edge heavy equipment on board, including helicopters and drones, as well as robots for diving below the dense Antarctic ice or for deep-sea sediment drilling. In this regard, the ship's "moonpool" is a valuable resource – a protected opening in the hull that allows advanced diving robots to also be used below the ice. The robotic systems can be deployed at depths up to 6,000 metres.

The new Polarstern, which like her predecessor will sail under the German state flag, will also continue to resupply the Neumayer Station III in the Antarctic. The station serves as the point of departure for Germany's land-based Antarctic research efforts. The new Polarstern will offer a service life of at least 30 years and be capable of overwintering in the ice. "The new Polarstern will be one of the most ambitious infrastructure projects in the history of the Helmholtz Association. With this ship, we are setting completely new standards in the exploration of the Earth system and helping to ensure that the Alfred Wegener Institute remains a top global location for international polar and marine research," says Prof Dr Otmar Wiestler, President of the Helmholtz Association. "The project is also an important measure to promote the economy, especially in these times, and shows how science can become a driving force for sustainable future technologies."

The shipyard for the first ten years of service will – just as it was for the first Polarstern – be Reederei F. Laeisz. With 200 years of experience in shipping and 30 years in polar waters, the company is ideally qualified for the upcoming construction supervision and subsequent shipyard support. According to Niko Schües, owner and CEO: "Our crew can offer outstanding seamanship and expertise when it comes to duty in the polar regions, and we're looking forward to working with a high-tech ship. It will mean having a front-row seat for absolutely top-flight research – who wouldn't be happy?"

As one of the environmentally friendliest icebreakers in the world, the new Polarstern will be an ambassador of innovative technological solutions and materials to promote sustainability, e.g. its new propulsion system, which can run on green methanol. Harmful exhaust emissions will be reduced to the greatest extent possible; the new ship will be equipped with cutting-edge particulate matter filters, catalytic converters, and a urea injection system to reduce nitrogen oxide emissions.

The requirements profile used in the call for tenders was based on the lessons learned from the Polarstern's more than 40 years of service. Commissioned on 9 December 1982, for the past 42 years the original Polarstern has been the only German research icebreaker to ply the Arctic and Antarctic alike – and still holds a classification (technical certification) through 2027. To support polar and marine research in the transitional period until the new Polarstern's commissioning, the classification is to be extended accordingly. To date, the Federal Republic of Germany's research flagship has travelled roughly 1.9 million nautical miles.

When the federal budget for 2022 was approved by the German Bundestag, nothing stood in the way of launching the Europe-wide call for tenders on 3 June 2022. The AWI project team led by Detlef Wilde will now oversee the construction of the new research and resupply vessel until the handover, at which point the new Polarstern will become the property of the AWI.

URL zur Pressemitteilung: <http://polarstern.awi.de/en> Link to the website

URL zur Pressemitteilung: <http://www.awi.de/en/about-us/service/press.html> Link to the press release

URL zur Pressemitteilung: <https://we.tl/t-EatrXrZuIo> Link to Video footage of the current Polarstern

URL zur Pressemitteilung: <https://we.tl/t-27pFnhbFaI> Link to animations of the new Polarstern



3D view of the planned new construction of the Alfred Wegener Institute's icebreaking research and supply vessel Polarstern

thyssenkrupp Marine Systems

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