



BREMERHAVEN
HOME OF INNOVATION



BREMERHAVEN

MARITIME BUSINESS & SCIENCE:
WE HAVE THE FUTURE ON BOARD!

Economic
Development
Company Ltd.



WELCOME TO BREMERHAVEN!

Our vibrant seaport at the mouth of the Weser River

Bremerhaven's past and present are characterized by its ports, shipbuilding, the offshore wind power industry, marine research, and a long tradition in fish and food processing. Marine tourism has also expanded remarkably, and flourishes in the attractive downtown Havenwelten area and the Schaufenster Fischereihafen tourist destination.

Our seaport, home to a thriving economy, will be 200 years old in 2027. It is a young city that has become one of the largest ports in Europe in just two centuries. About 120,000 inhabitants make Bremerhaven the only major urban center on Germany's North Sea coast; it is part of the State of Bremen.

Robust research networks and industrial clusters unmatched in Germany have driven rapid development in recent decades. This is not the first time Bremerhaven has reinvented itself, and it is now steadily positioning itself as a city for research, science, and practical education. Every tenth job is already in these professional areas, in which climate research and the renewable energy sector – meaning the wind power industry and the industrial expansion of green hydrogen usage – play a central role.

The people who live and work in our city enjoy its maritime setting, practice sustainability, and find innovative solutions together.

"Bremerhaven is developing its maritime location with foresight to meet the challenges of the future. This is guided not least by the major issue of climate change, and involves both port development and maritime technologies. Bremerhaven boasts international expertise in the offshore wind power industry; it also focuses on the application of hydrogen technologies in the maritime sector. Our fish and food processing companies have long been committed to sustainability and innovation. Our science and research institutions, in line with our maritime interests, enjoy international standing, and are important cornerstones in this sustainable development.

Our integrated effort, in which the maritime economy works hand-in-hand with science and research, is committed to better protecting the oceans, mitigating climate change, reducing emissions, using resources more efficiently, and making logistics more climate-friendly on the world's oceans. In our dynamic seaport, we are designing these ambitious projects together – where government policy, society, the business community, and science institutions are all involved in these shared interests and work toward common goals. You are very welcome to join us – on course to innovation and ready to discover new horizons!"

"Bremerhaven is a world-class seaport with impressive dimensions and capacities; our ports in the State of Bremen are among the most important hubs for the international exchange of goods. Maritime business and logistics are the backbone of the state's economy. As the senator for science and ports, I am committed to fostering innovative strength in Bremerhaven as well as business development that is sustainable and carbon-neutral. Our Green Economy strategy focuses on resource-efficient industrial and commercial planning and on applied research in hydrogen technology.

Areas of innovation include the new and further development of maritime technologies and technology transfer. Practiced and contracted research at Bremerhaven University for Applied Sciences and other highly reputable institutions, as well as collaborative projects and spinoffs, are important for successfully continuing the development of our Bremerhaven port location into a leading maritime center of excellence. Come and join us!"



Melf Grantz,
Mayor of the City of Bremerhaven



Dr. Claudia Schilling,
Senator for Science and Ports
of the Free Hanseatic City of Bremen



WIND TURBINES, FRESH FISH AND CRUISES

We are the right place for handling all kinds of vessels

Bremerhaven's capacity of eight million TEUs makes it one of Europe's largest container ports and car transshipment hubs. Some two million vehicles per year are transhipped here, making it a leading port in the world for this business. The port's core competence lies in handling containers, vehicles, high and heavy cargo, temperature-controlled goods (including cold storage capacity), and the cruise business.

With waters deep enough for ocean-going vessels, Bremerhaven's harbors in the north and south of the city ensure the best conditions for meeting diverse transportation and logistics requirements around the clock. State-of-the-art handling facilities, ideal overseas and inland connections, and an impressive network of highly specialized logistics and port services offer outstanding operating conditions. Excellent training and further education opportunities in the city further contribute to the success of the seaport's maritime economy. Production located directly on the coast also benefits from short transport chains, allowing goods ranging from fresh produce to industrial commodities to be shipped around the world rapidly and cost-effectively.

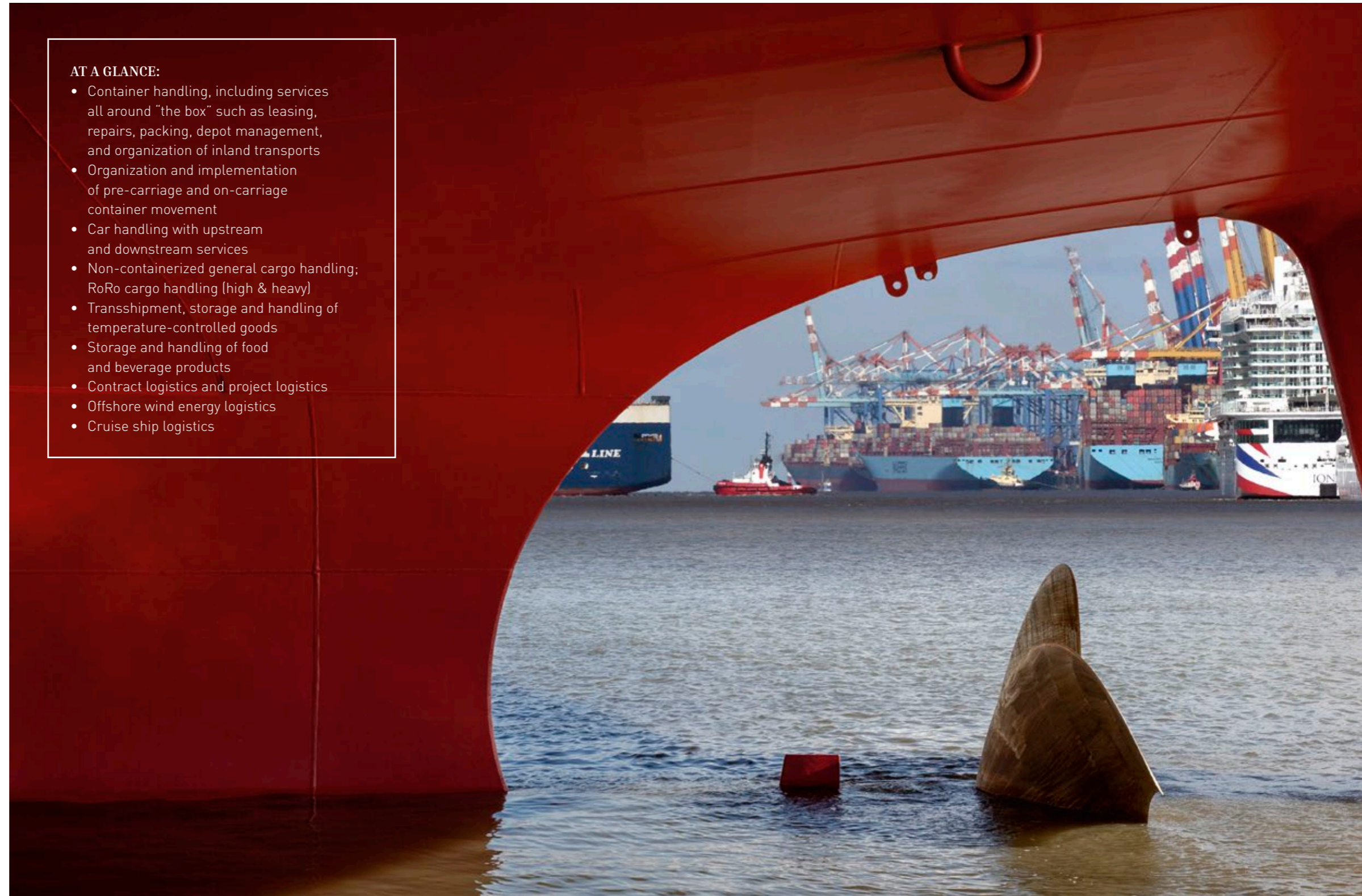
The offshore industry, which relies entirely on sea-going vessels to move personnel and components to and from installations at sea, has access to optimal port infrastructure and commercial sites in Bremerhaven. In accelerating the expansion of offshore wind power in the course of Germany's energy transition, companies can rely on two decades of experience in this industry throughout the entire value chain, plus the expertise of the Fraunhofer Institute for Wind Energy Systems (IWES). The Columbus Cruise Center, a modern and highly efficient passenger terminal for cruise ships, complements our wide range of terminals and harbors.

Our ports:
www.bremenports.de



AT A GLANCE:

- Container handling, including services all around "the box" such as leasing, repairs, packing, depot management, and organization of inland transports
- Organization and implementation of pre-carriage and on-carriage container movement
- Car handling with upstream and downstream services
- Non-containerized general cargo handling; RoRo cargo handling (high & heavy)
- Transshipment, storage and handling of temperature-controlled goods
- Storage and handling of food and beverage products
- Contract logistics and project logistics
- Offshore wind energy logistics
- Cruise ship logistics



“ The balanced combination of a genuinely industrial city with premier research centers never fails to inspire me. In Bremerhaven we can get down to work and think! We really do create something together here – and there is more than enough to do. ”

Thorsten Rönner,
Managing Director of the HEINRICH RÖNNER GROUP

DOCKS & IDEAS

Thanks to Bremerhaven's 11 floating and dry docks, the right solution for any ship in almost any condition, whether it's a small boat or huge cruise vessel, can be found at any time. The city also boasts a full range of maritime services.

The HEINRICH RÖNNER GROUP, a family-run business, exemplifies Bremerhaven's many-sided maritime expertise. Thorsten Rönner is an entrepreneur who believes in the high value of Bremerhaven's outstanding business location; he is one of three brothers actively involved in the group, which now includes 20 companies. Even the 80-year-old senior boss still comes into the office six days a week.

Now boasting some 1,800 employees, due partly to the joint acquisition of Lloyd Werft Bremerhaven with the Zech Group, the company works in a diverse range of ship and yacht construction, from new builds, ship conversions, and the repairing and equipping of vessels, to the design of superyachts using new alternative drive systems and fuels. Other areas of activity include hydraulic steel and bridge construction, steel and aluminum structure manufacturing, engineering services, ship machinery and equipment production, and corrosion protection.

Thorsten Rönner has great confidence in Bremerhaven's shipyards. Bredo Dry Docks alone, which belongs to the group, registers more than 200 dockings each year, making it the largest repair yard for merchant ships in Germany.

The port's ideal location at the mouth of the Weser River is a valuable advantage for all Bremerhaven companies in the maritime sector, allowing vessels from all European ports to reach this destination after a quick journey across the North Sea.

Companies located in Bremerhaven:
www.bis-bremerhaven.de



FULL STEAM AHEAD:

Speeding up the energy transition!

Everything is in place in Bremerhaven that makes up 100 percent of the maritime economy: ship and boat building, shipping companies, suppliers, outfitters, services, research institutes, and all kinds of expertise and support to make sure everything runs smoothly. Hardly any other seaport offers such a wide range of proficiency.

For decades, shipbuilding was one of the mainstays of Bremerhaven's economy. Today, the city's shipyards focus on ship repair, ship conversion, and special ship or yacht building, with access to a unique infrastructure of floating and dry docks. A dense and efficient network of highly specialized suppliers and services has grown around the major specialists in ship newbuilding, ship conversion, repairs and engines. An interesting diversity of companies is represented here, their activities ranging from plant construction, engineering development and ship outfitting to the all-round supply of state-of-the-art hardware from relevant equipment businesses.

The maritime network includes many high-performance specialist enterprises active especially in electrical, plant and mechanical engineering, surface treatment, interior decorating and metalworking, plus engineering and construction contractors.

In a very short time, the seaport has developed into a science and competence center for offshore wind power, in which the maritime industry has played a crucial role. Building on this experience, the city is now positioning itself as a leading hydrogen competence center. The Fraunhofer Institute for Wind Energy Systems (IWES) in Bremerhaven will begin operating a test site in 2023 for using green hydrogen on an industrial scale.

To find out more about
Bremerhaven's Hydrogen Lab, visit:
www.wind-wasserstoff-bremerhaven.de



“Close cooperation brings out the best ideas, and we experience this par excellence with the maritime industry in Bremerhaven. Our long-standing relationships ensure us optimal dialogue on how to successfully create a sustainable future. Whether it’s about maintaining our ships, or animal welfare in aquaculture systems, we move forward together.”

Antje Boetius,
Director of the Alfred Wegener Institute (AWI)

OCEANS & RESEARCH



Prof. Dr. Antje Boetius is Director of the Alfred Wegener Institute – Helmholtz Center for Polar and Marine Research (AWI), which is headquartered in the seaport and has field offices in Potsdam, Oldenburg, Heligoland and Sylt. The AWI in Bremerhaven focuses mainly on polar and marine research.

An internationally recognized center of competence in polar and marine research, the AWI is one of the few science institutions in the world that is active both in the Arctic and Antarctic. Its excellent infrastructure is accessible to national and international science, with resources including several research ships, aircraft, and research stations in the Arctic and on Antarctica.

The AWI coordinates Germany’s polar research, and also does research in the North Sea and its German coastal regions. To better understand the planet and its climate patterns as an integrated whole, scientists from a wide range of research backgrounds work together and across disciplines to investigate Earth’s climate, biology and physical geography systems. Drawing on its innovative research, an excellent science infrastructure, and long-standing expertise, the AWI investigates practically all aspects of understanding the Earth as a system – from the atmosphere to the bottom of the sea.

Over 1,300 persons are employed by the AWI, of which 1,000 work in Bremerhaven. The AWI campus is seeing constant growth and is located in several building complexes and other buildings around the city. Its research vessel, Polarstern – famous the world over ever since its MOSAiC expedition – is based in Bremerhaven. The AWI is both a significant employer and an important contractor for the maritime economy in Bremerhaven and the region.

A cluster of innovative, technology-oriented enterprises has sprung up around the AWI and evolved into a research and development campus. For the AWI, technology transfer, spinoffs, and even the events it organizes for experts and laypersons alike means it has an important conversation with business and society. Its commitment in these areas is diverse – in the region and beyond.

Alfred Wegener Institute (AWI):
www.awi.de



Bremerhaven's direct location on water virtually obliges it to give top priority to this resource as a life-line for humans, animals, and plants. The maritime industry works together with science and research institutes to find the best ways to reduce the impact of shipping and fishing on the marine environment.

The world's oceans are a sensitive ecosystem, and protecting them is of enormous importance. Protective measures are applied in such diverse areas as offshore wind power and marine energy (which includes both wind energy and green hydrogen), fishery ecology, mariculture, coastal protection, hydraulic engineering, and maritime technology for measurement, environmental protection, and safety. Many companies see the new and further development of maritime technologies as an important future market, and Bremerhaven University of Applied Sciences offers a bachelor's degree in this field. Prestigious research institutes such as the Alfred Wegener Institute (AWI), the Fraunhofer Institute for Wind Energy Systems (IWES), and the Institute for Windenergie (fk:wind) at the university are involved in this effort, ensuring practical relevance and topicality in education and training in marine technology, wind power, and marine energy. New fields of research in marine technology are emerging in which young and technology-based companies are increasingly specializing.

The further development of offshore wind power and the use of green hydrogen together offer major opportunities for Bremerhaven's industrial location on the whole. IWES, the university, and the Bremerhaven Technologie-Transfer-Zentrum (ttz) already play a key role here.

Cutting-edge research on anything to do with water has a decades-long tradition in Bremerhaven; nearly 2,000 highly qualified employees now work in the city's science institutes and research clusters. These include the German Aerospace Center (DLR), the Institute of Shipping Economics and Logistics (ISL), and the THÜNEN Institute of Sea Fisheries as well as the THÜNEN Institute of Fisheries Ecology. Companies in the maritime industry, the wind energy sector, and logistics all benefit, as do leaders in Germany's fish and food industry, among them Frosta, Deutsche See and Frozen Fish International. Boasting some 4,000 employees, this sector is an important cornerstone in Bremerhaven's economy, where half of Germany's fresh fish is processed.

COMMITTED TO MITIGATING CLIMATE CHANGE

Water is our future – from measurement technology to shellfish



Prof. Dr. Alexis Papathanassis has been Rector of Bremerhaven University of Applied Sciences since February 2021 and sees the university as an integral part of the value chain in the city's maritime industry. On the one hand, activity continues to focus on building or remodeling large ships, while on the other hand, it's about consuming less energy and fewer resources, and substantially reducing pollutant emissions. Environmentally friendly propulsion systems, new kinds of materials, intelligent logistics for the global flow of goods on the world's oceans, and less packaging waste in the waters are just a few of the core subjects in the university's curricula.

Coming from a maritime tradition, degree programs continue to focus on industrial plant, process and logistics engineering as well as on sustainable energy and environmental technology, and wind energy technology. However, the university is already thinking ahead by offering new degree programs in cruise tourism management, new company founding, innovation, leadership, food technology and business, and social work – all of them giving momentum to the search for solutions to societal challenges.

In the center of the city, its campus directly on the river, the university impresses with its personal atmosphere. Its current population of 3,000 students is at the center of attention. The approach to learning has a strong practical focus on the direct application of new knowledge. Students are supervised personally. Flexible attitudes and innovative courses of study align with important areas of business in the city and make cooperation with the local economy easy. Prof. Papathanassis believes that short distances are in every way an essential part of the university's success in training young people locally to become highly qualified – not only for the maritime economy.

Bremerhaven University of Applied Sciences is an influential driving force in research to advance development in the economic region – especially in marine energy (wind energy and green hydrogen), protection of the marine environment, biotechnology, and maritime logistics.

Programs of study at Bremerhaven University of Applied Sciences:
www.hs-bremerhaven.de



EDUCATION & FARSIGHTEDNESS

Alexis Papathanassis,
Rector of Bremerhaven University of Applied Sciences

“ We teach, research and learn here, right where all things maritime are at home – for example, here in our engine room for training engineering officers. We are enthusiastic about exploring new perspectives at Bremerhaven University for Applied Sciences. Our city is characterized by a spirit of enterprise – and that inspires us every day! ”

DIGITIZATION, INNOVATION, SUSTAINABILITY

Exemplary solutions for the world —
made in Bremerhaven!



TRAGVIS – Optical viewing systems

The project run by the Bremerhaven Institute for the Protection of Maritime Infrastructures (DLR), together with the German Maritime Search and Rescue Service (DGzRS) and the OptoPrecision company, is developing a portable active range-gated viewing system for maritime search and rescue operations.

Optical viewing systems are especially important for monitoring maritime work areas such as ports, container terminals, and offshore wind farms, and they help improve safety for people working at sea.

ISABELLA 2.0 – Handling cars with AI

Together with 28Apps Software and the Bremer Institut für Produktion und Logistik (BIBA), the BLG Logistics Group has been investigating how to optimize the handling of vehicles in the terminal. The research project wants to use artificial intelligence to make port operations more efficient. The first step has been to simulate on-site logistical flows to better plan and manage this

process. The second step will integrate movement data from modes of transport such as trains, ships and trucks, on which vehicles will be tracked by smartphone. The project is expected to result in a smart ship and finally a fully digitized smart port.

OBELiSK – Efficient port lighting

Bremerhaven's container and car terminals cover an area of more than five square kilometers, and thousands of lights illuminate the area in the dark. This nighttime lighting incurs high energy costs and pollutes the environment. A joint project coordinated by EUROGATE was designed to regulate floodlights

to switch on only when needed, reducing the use of energy by 20 percent. The other partners were 28Apps Software, the Bremer Institut für Produktion und Logistik (BIBA), AutoTerminal Bremerhaven (BLG Logistics Group), and Philips Lighting.

redSF – Climate-friendly container fumigation

In the redSF joint project, researchers at Bremerhaven University of Applied Sciences, in cooperation with HARACO Offshore and the Bremerhaven Economic Development Company (BIS), are looking for technical and, above all, climate-friendly ways to treat goods when they arrive in the port to prevent the importation of pests. The insecticide sulfuryl difluoride is currently used for this purpose in containers, and some

of this harmful greenhouse gas is released into the atmosphere during the process. No technology is yet in place to prevent the escape of these emissions. HARACO prefers not waiting until stricter regulations take effect and wants to be prepared. Development of a more environmentally friendly gas scrubbing system is much better for the climate – and would also add to the competitiveness of Bremerhaven's ports.

Rang-E – Optimizing shunting operations

Bremerhaven, with terminals and a port railway, is the right place to find out how to optimize and automate shunting in seaports to improve efficiency. Bremerhaven's inland boasts a very dense railway network. A feasibility study was carried out to investigate various levels of automation, even up to the complete autonomy and self-control of shunting units. The study also looked at the extent to which diesel-independent shunting operations using electric accumulators would be feasible. This analysis assessed the conditions in the seaport needed to make improvements.

The Rang-E study incorporated the expertise of companies in the port area and their strategies for digitization, such as the Internet of Things (IoT) and Logistics 4.0.

Project partners for the feasibility study were the Bremer Institut für Produktion und Logistik (BIBA), the Institute of Shipping Economics and Logistics (ISL), and the Institut für Verkehrswesen, Eisenbahnbau und -betrieb (IVE) [institute for transportation, railway construction and management].

ZIM-Netzwerk Antifouling – Controlling underwater fouling

Twenty-one small and mid-sized companies, and research institutes including Bremerhaven's Alfred Wegener Institute for Polar and Marine Research (AWI), have joined forces to find innovative ways to deal with biofouling. Ship hulls and other underwater structures such as locks are often subjected to fouling from microorganisms, plants, algae and animals. Biofouling introduces non-native species into the waters and in-

creases the flow resistance of ships, leading to higher fuel consumption. ZIM-Netzwerk's research focuses primarily on the fouling of underwater surfaces on ships and offshore installations. The network's goal is to develop environmentally friendly materials and methods and systems for preventing fouling and removing fouling debris from these surfaces.

KrustInUVa – Identifying crustacean species

Bremerhaven's THÜNEN Institute of Fisheries Ecology is working together with the Max Rubner-Institut (MRI) to identify shellfish species. Although aquaculture supplies over 50 percent of the shellfish on the world's markets, fisheries still put very high pressure on wild shellfish populations. Shrimps, lobsters, crabs and crayfish are traded globally; these foods are easy to prepare and meet the needs of modern diets because they are low-fat and protein-rich. Total annual production was put at 13.8 million tons in 2014.

The overfishing of crustacean species is a global problem and commodity flows can make this situation worse if there are no viable tracing and control systems along the value chain. The KrustInUVa project is developing various DNA and protein-based analytical methods to identify crustacean species and potentially allergenic proteins to enable commercial enterprises (in self-monitoring) and investigative authorities (in official inspections) to effectively verify shellfish species.

Mak-Pak Scale-Up – Packaging from macroalgae

The project's name is short for "industrial implementation of a production process for sustainable packaging made from macroalgae for the food sector." The project's purpose is to optimize algae production on a large scale for food packaging that is sustainable, com-

postable and at best edible. Bremerhaven University of Applied Sciences, AWI, and RO-V-AL are involved in the project as are the Nordsee, Pulp Tec and Hengstenberg companies.

Find out more about Bremerhaven's diverse research and science institutes, stakeholders, and projects:



3 QUESTIONS...

...answered by the Managing Director of the Bremerhaven Economic Development Company (BIS)

What does BIS offer to interested businesses?

BIS offers a wide range of consulting and support services as well as the targeted financial support of investment and innovation. We create incentives for the development of new products and services and we support research projects. As a matter of course we also help you find the right commercial property or land for your company if you are interested in relocating, and we support you and your employees when they come on board in Bremerhaven.

What does the Bremerhaven location offer?

Companies located here benefit from close links between business, science and research in a quintessentially maritime environment. Living, studying and working in Bremerhaven shape the maritime life – 100 percent!

People working in all sectors along our coast appreciate the city's positive spirit and friendly atmosphere. Distances are short and networks are strong. Well-grounded and relevant training and education, degree programs at the university tailored to the needs of specific industries, continuing education and qualification, finding and keeping skilled workers – in the course of our networking, we at BIS address these concerns in depth. With an eye for detail, we are committed and passionate about developing our location in a comprehensive way to pilot our economy and science safely into the future.

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Follow and connect with us!



What about the city's image?

Bremerhaven has seen enormous change in its image in recent years. The city is expanding, new neighborhoods are springing up, and it has a lot to offer culturally. Living here means you can enjoy your lunch break on the dyke or pick up some fresh fish on your way home.

After work, you can leave your lab or assembly plant and head straight to the beach on the Weser River. You can even train for a boating license after the day's work is done. The international SAIL windjammer festival and the Maritime Days are great events for enjoying quality time with family and friends as you stroll around the Havenwelten and Schaufenster Fischerei areas to see sailboats close up and visit open ships, or watch big boats glide past – that's what the good life in Bremerhaven looks like!

So dock with us in our wonderful city – the team at the Bremerhaven Economic Development Company (BIS) is ready for new things and looking forward to welcoming you and your enterprising ideas!



Bremerhaven Economic Development Company (BIS): www.bis-bremerhaven.de



PORTS, TERMINALS AND EXPERIENCE

We are the right place for handling your containers, vehicles, general cargo and heavy loads



Commercial and Industrial Areas:

- A. LUNE DELTA – Green Economy sustainable business park
- B. LogInPort industrial zone

Learning, Research and Discovery

- C. Alfred Wegener Institute for Polar and Marine Research
- D. Bremerhaven University of Applied Sciences
- E. German Maritime Museum
- F. Klimahaus Bremerhaven
- G. German Emigration Center

1. LABRADORHAFEN HEAVY LOAD TERMINAL

- West side: heavy load foundation, (up to 70kN/m²), 100 m (length) by 16 m (width)
- East side: Total length of quay: 1,132 m; heavy load foundation (up to 70kN/m²), 76 m (length) by 27 m (width), and 74 m (length) by 15.5 m (width)
- Water depth: 7.6 m
- Lock restrictions: 182 m (length) and 35 m (width)

2. FISCHEREIHAFEN

- Total length of quays: 7,000 m
- Water depth: up to 8.1 m
- Commercial area: approx. 450 hectares
- Total freezer and refrigeration capacity: 498,000 m³

3. CRUISE TERMINAL

- Length of quay: 500 m directly before the terminal
- Water depth: 9.3 m
- Number of passengers in 2019: 250,000
- Parking for about 400 cars is directly at the terminal, with another 500 parking spaces within 1,000 m
- 3 laser-guided passenger boarding bridges

4. + 5. KAISERHÄFEN PORTS II & III

- Length of quay: 3,020 m
- Water depth: 10.5–11 m
- Total area: 240 hectares
- Parking capacity: 95,000 cars; of which is covered: 50,000 cars
- 18 berths for car carriers
- Technical centers: 3
- Paint hall: 1
- Rail sidings and head ramps: 16
- Cars on and off-loaded in 2019: over 2 million vehicles

6. ABC-HALBINSEL OFFSHORE TERMINAL

- Area: 10 hectares
- Length of quay: 2 berths
- Jack-up vessels dock directly next to the heavy load foundation
- Heavy load capability: heavy load foundation with up to 20 t/m² surface load, handling up to 1,000 t heavy components
- Water depth: 10.5–11 m
- Lock restrictions: 305 m (length) and 55 m (width)

7. FRUIT TERMINAL

- Length of quay: 600 m
- Total area: 68,000 m² + 26,000 m²

8. CONTAINER TERMINAL 1

- Length of quay: 450 m
- Area: 25 hectares
- Jack-up vessels dock directly at the quay
- Load-bearing capacity: SLW 60
- Water depth: 12.5–15.5 m
- Lock restrictions: none

9. OSTHAFEN

- Length of quay: 1,200 m
- Water depth: 10.5 m

10. NORDHAFEN

- Length of quay: 900 m
- Water depth (at mean low water): 11 m
- Open area: 470,000 m²
- Covered storage area: 20,000 m²

11. RORO TERMINAL

- 1,350 departures per year to over 200 different ports around the world
- High & heavy area: 340,000 m²

12. CONTAINER TERMINAL

- Length of quay: 4,930 m = 14 berths
- Outdoor operating area: around 3 million m²
- Covered storage area: 30,000 m²
- Freezer capacity: 27,000 euro-pallets
- Container capacity: up to 8 million TEUs per year
- Water depth: 12.6–15 m

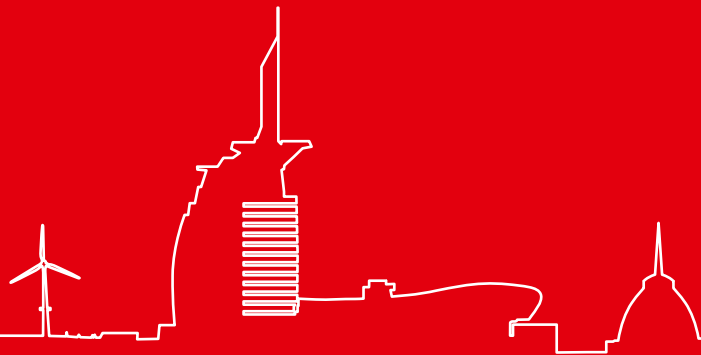
Commercial property in Bremerhaven:
www.gewerbeimmobilienportal-bremerhaven.de/en







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