

Ports in Lower Saxony

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1. Introduction

One of the most frequented sea traffic routes in the world is located in the southern part of the German Bight along the Lower Saxony coast of the North Sea. The North Sea itself is an important trade route and serves as Europe’s access to the globalized markets.

The Lower Saxony seaports of Brake, Cuxhaven, Emden, Stade-Bütsfleth and Wilhelmshaven have free accessibility to the interregional sea traffic routes and the open sea via the estuaries of Weser, Elbe, Ems and Jade.

Hinterland connections are well established through an efficient network of roads, railways and inland waterways.

The seaports of Lower Saxony make an essential contribution to the supply of goods and commodities for the Federal Republic of Germany. With an overall cargo handling of 63.7 million t (SEAPORTS OF NIEDERSACHSEN, 2006), they secure the export capacity of the German economy. Furthermore, the sea and inland ports of Lower Saxony ensure a clear employment effect: 74,000 employees – around 2.1 % of all people employed in Lower



Fig 1: Locations of Niedersachsen Ports GmbH

Saxony – directly or indirectly work at the ports in Lower Saxony. (Source: Niedersächsisches Hafenkonzept, Lower Saxon Port Concept).

In addition to the large German container ports in Hamburg and Bremen, the seaports of Lower Saxony maintain an important position in the handling of bulk and general cargo, in special bulk carriers (oil, coal) and of raw materials such as resins and basic chemicals, general cargo and special cargo such as e.g. motor vehicles, forestry products and project cargo (parts of or entire industrial and power plants). A large part of this load is handled within the port system of Niedersachsen Ports GmbH & Co. KG (Niedersachsen Ports).

Niedersachsen Ports, a state-owned private company, is responsible for the construction, the maintenance and the operation of the state-owned seaports in Lower Saxony. Moreover, an important area of activity is the management of the extensive port areas and real estate. The federal state of Lower Saxony has transferred responsibility of 13 state-owned ports to the company. These include Brake, Cuxhaven, Emden, Stade-Bützfleth and Wilhelmshaven, seven island supply ports as well as one regional port.

By the year 2012, the state of Lower Saxony will have invested more than 200 million Euros into the construction and maintenance of the infrastructure in the seaports of Niedersachsen Ports.

Further seaport locations in Lower Saxony are the private port Nordenham as well as the communal ports in Papenburg, Leer and Oldenburg.

2. Locations of Niedersachsen Ports GmbH & Co. KG

2.1 Brake

The seaport Brake is located at the western bank of the Weser estuary 26 km upstream of Bremerhaven. Depths in the navigational channel are sufficient for sea-going vessels. The port has a quay length of 1,700 m, and the port area includes 195 acres of land and 50 acres water surface. Today, ships with a draft of up to 11.9 m (planned development depth: 12.8 m) and a length of 275 m can call at the port of Brake. Pilot-aided passage through the Outer Weser generally takes about 5 hours.

The southern port area serves for the handling of animal feed and grains, the northern port area for the handling of forestry products, iron, steel, machines and sulfur. At the inland port, which can be reached through a lock with a chamber length of 95 m, coasters and sea-going barges servicing the European logistics traffic can be processed. Brake is connected to the European inland waterway network through the Lower and Middle Weser as well as through the Hunte and the Coastal Canal (Küstenkanal). Thereby, inland vessels can reach the port of Brake from all European inland waterways.

Since the port turnover reaches its capacity limit in the existing port area, Niedersachsen Ports is realizing the investment measure "Port Expansion North" with a volume of 37.5 million Euros. By 2009, the construction project will establish an expansion of the port area of approx. 75 acres with a 270 m quay. This offers additional berthing space for one large and one inland vessel together with the necessary connections to the existing traffic infrastructure. Due to an expected high utilization of the port facility Niedersachsen Ports is considering the immediate construction of a second berth which will enable a simultaneous processing of two large ships.



Fig. 2: Brake (53° 20' N, 8° 29' E)

2.2 C u x h a v e n

Being located at the junction of the maritime traffic lanes from the North and Baltic Sea, Cuxhaven has good transport connections. Moreover, its location approximately 104 km downstream of Hamburg at the mouth of the Elbe, the busiest maritime route in the world, makes the seaport the starting point for sea-bound traffic to Great Britain, Scandinavia and the Baltic Sea region. At the Elbe estuary with a navigational channel, which is deep enough for deep-drawing ships, an access to the port with a maximum allowable draft of 14.5 m is guaranteed.

The port is connected through an access road to the autobahn roundabout with branches of the autobahn A 27 and the highway B 73 both going towards Hamburg. A two-track railway line to a major junction at Hamburg/Maschen is the most important connection for cargo trains. The Elbe waterway provides access to the inland canal system towards the hinterland.

The overall surface area of the universal port is 788 acres, 571 acres of which are on land and 217 acres are expanses of water. As an important turnover port for Roll-on/Roll-off traffic (Ro-Ro) and for the turnover of general cargo, steel products, project cargo and cars, Cuxhaven has become an important logistics hub at the North Sea coast.

In the eastern part of the 'Amerikahafen' with a total quay length of 840 m, a multi-purpose handling facility with a total of four berths is located. Handling and equipment quays for general cargo and small bulk carriers as well as for large cruise ships complete the picture of a versatile America port.

Another part of the port accommodates a handling and equipment quay for fishing boats (Alter Fischereihafen/Old Fishery Port), some other equipment quais for fishing boats

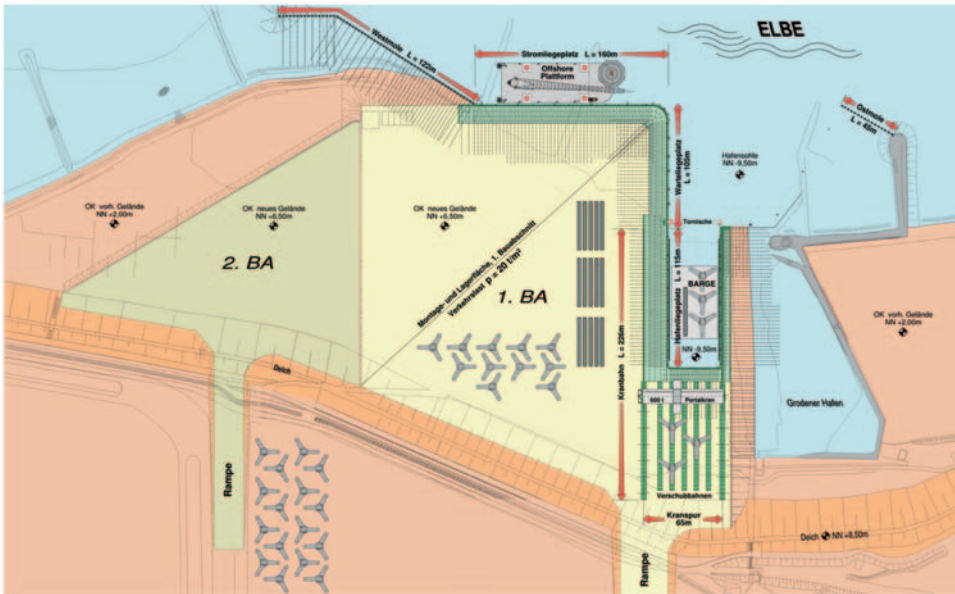


Fig. 3: Cuxhaven (53° 52' N, 8° 42' E)

(Neuer Fischereihafen/New Fishery Port) as well as the Old Port and the 'Ritzenbütteler' Lock Gully serving as a multi-purpose harbour for shipyards and smaller passenger vessels servicing the islands (MINIST. F. WIRTSCHAFT, ARBEIT U. VERKEHR DES LANDES NIEDERS., 2007).

In addition to the increasing Ro-Ro traffic, Cuxhaven has a long tradition as a fishing harbour and cruise ship centre. Moreover, the port will secure a future market segment with processing and servicing offshore windpower installations. As an example, the heavy-duty platform recently built by Niedersachsen Ports will be the basis for loading wind power generator units fully assembled with a weight of up to 2000 tons. The 1,580 m² assembly hall is planned to be operational in spring of 2009 (Verlag Kommunikation u. Wirtschaft, 2007), a production facility for foundation elements for offshore wind power generators in the direct vicinity is under construction.

In order to meet the urgent need of additional port capacity, Niedersachsen Ports is planning on building another berth with a length of 240 m and 21 acres port operation area towards the East of the new heavy-duty platform.

2.3 Stade-Bützfleth

The port of Stade-Bützfleth is directly located at the Elbe between Hamburg and Cuxhaven. The access route from the open sea to the port via the Elbe has a length of around 60 nm.

The port includes the 345 m long North Pier, at which on the river side ships with a length of up to 270 m long and a draft of up to 14.5 m can berth. On the land side of the pier (North Port), the maintained depth is 7 m.



Fig. 4: Stade-Bützfleth (53° 39' N, 9° 31' E)

Together with a berth for ships on stand-by, the South Pier is 380 m long. On the river side, sea-going vessels with a length of up to 270 m can be serviced; on the land side, ships with a length of up to 155 m and a width of up to 28 m can berth. Navigable depth in the South Port is 10 m. There, two quay facilities for ships with a length of up to 200 m and 33 m width are located.

The Northwest Kai/Northwest Quay is currently being expanded from 90 m to 315 m length by Niedersachsen Ports. This will add 9 acres of port space near the quay.

The port of Stade-Bützfleth offers handling and storage of bulk and general cargo on a fortified and flood-protected area with tide-independent access of sea-going vessels. The port is closely integrated into the regional industrial structure and possesses a particular competence and experience in the area of hazardous materials and the handling of solid and liquid bulk materials. Therefore, the Stade location is highly recommended and accepted by authorities, private industry and people.

2.4 E m d e n

The state-owned seaport in Emden is the most western harbour in Germany. It is located approx. 38 nm south-east from the open sea at the Ems estuary. The port consists of two parts: the outer port under tidal influence as well as the tide-free inland port which is accessible through two sea locks.

The handling facility in the outer port has a total quay length of 1,715 m (outer port

1,190 m, Ems quay 275 m, Ems pier 250 m). The water depth in the outer port and at the Ems quay is 8.5 m, at the Ems pier 9.5 m below mean sea level. The quay storage space adds up to a total of more than 90,000 m²; in addition, there is a spacious retral warehouse and storage space available (Source: Niedersächsisches Hafenkonzept).

Depending on the tide, access for vessels with a draft of 10.67 m is possible.

The port facilities are capable of handling heavy loads and are connected to both the railway network of Deutsche Bahn and the German and Dutch road network by autobahn A 31. Canals towards the hinterland provide the connection to the German as well as to the Dutch waterway and canal network.

New cars directly from the factory and destined for export constitute an important part of the cargo handled in Emden. Hence, the area of logistics services for the automobile industry has developed in an important manner.

In addition, the port is an important transshipment place for goods and products of a wide variety such as forestry products of all types, liquid chalk/Kaolin, components for offshore wind power plants, minerals, magnesium chloride and liquid fertilizers as well as project cargo. Port facilities include 12 Ro-Ro berths, a floating Ro-Ro ramp (100 t) for versatile deployment at various quays, a container terminal and a high capacity handling bridge (SEAPORTS OF NIEDERSACHSEN).

The relatively new classification of the sea port has its origins in the structural change of the past 25 years. Emden has developed to become a universal port with an emphasis on general cargo whose share has substantially increased. Port areas freed up by the re-structuring process have been allocated for the settlement of new companies and for expansion.



Fig. 5: Emden (53° 21' N, 7° 12' E)



Fig. 6: Wilhelmshaven (53° 31' N, 8° 08' E)

Emden aims at playing an important role on the emerging market of regenerative energies, in particular wind energy. To the North of the Island of Borkum, the establishment of the first 80 offshore wind power generators will be realized. For this project and further wind parks in the German Bight, Emden will serve as a basis for pre-assembly, transport and maintenance of the facilities.

Emden's potential lies both in the diversity, which is available through the competency and technical equipment on site and on an enormous potential in expansion areas important for future development of the port at the Ems estuary.

2.5 Wilhelmshaven

Wilhelmshaven is Germany's only deep water port, located between the Ems and the Weser on the western side of the Jade estuary. The nautically unproblematic, very short access channel with a length of – depending on the docking point in the port – between 23 and 32 nm – is maintained through regular dredging to guarantee a depth of more than 18.1 m below mean sea level. Depending on the tide, ships can enter with a draft of up to 20 m (outgoing 19 m).

The port consists of two parts: the outer deep water port 'Jade channel' and the tide-free inner port behind a double-chamber sea lock.

The inner port with its characteristic handling bridges is equipped with modern quay facilities for the handling of bulk cargo, containers, refrigerated cargo, food stuffs, general and project cargo (SEAPORTS OF NIEDERSACHSEN).

The port of Wilhelmshaven as a central handling location for fossil fuels is continuously expanded by improving the state-owned handling facility for coal and LNG as well as the preparation of an area set aside for the construction and operation of a coal-fired power plant and the connected coal storage. Thereby, port greatly contributes to the energy supply in Germany.

A good traffic infrastructure between all port areas and to the outside and the hinterland is based on access to interregional road network through the autobahn A 29. The railway network also extends into all port areas.

The advantages of the present port location led to the decision to build the Jade Weser Port, Germany's future deep water terminal for large container vessels of the coming generations. More detailed information can be found in section 5.3 in this issue.

2.6 Norden

A branch of Niedersachsen Ports in Norden manages the island supply ports of Norddeich (starting point of the ferry lines to Norderney and Juist), Bengersiel (starting port of the ferry line to Langeoog) and the island ports of Norderney, Baltrum, Langeoog, Spiekeroog and Wangerooge. This includes the maintenance dredging in the access channel of the community-owned port Juist as well as the operation and maintenance of various port navigation lights.



Fig. 7: Norddeich (53° 36' N, 7° 9' E)

With around 1.5 million tons being handled, more than 10 million passenger transfers and around 80,000 ship movements, the average annual balance of the 14 coastal and island ports between Greetsiel and Harlesiel and Borkum and Wangerooge, respectively, is an essential economic factor in the East Frisian region. Ferry traffic and island supply, fishing boats and pleasure craft reach the capacity limits, especially during the summer months. Based on its individual characteristics, each port is a center of attraction for tourists and a starting point for the passenger ferry and/or island supply traffic to the East Frisian islands. Thus, these ports provide an essential contribution to securing and strengthening the economy of the Lower Saxony coastal region.

The accessibility of the coastal and island ports depends on the natural conditions in and around the tidal flats and the state of maintenance dredging in the access channels. Most ports can only be reached under certain tidal conditions (Tab. 1).

Table 1: Island supply ports in Lower Saxony

From mainland port to island		reachability
Emden	Borkum	independent of tide
Norddeich	Juist	depending on tide
Norddeich	Norderney	independent of tide
Neßmersiel	Baltrum	depending on tide
Bensersiel	Langeoog	independent of tide
Neuharlingersiel	Spiekeroog	depending on tide
Harlesiel	Wangerooge	depending on tide
Cuxhaven	Helgoland	independent of tide
Cuxhaven	Neuwark	depending on tide

3. References

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