

NORTH SEA



BRUNSBÜTTEL ELBE- PORT INFORMATION BOOKLET FOR LNG CARRIERS

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INTRODUCTION

This Brunsbüttel Elbe- Port Information Booklet for the LNG Carriers (hereinafter – the Booklet) provides general information of Brunsbüttel Elbe- Port, existing rules, approaching channel characteristics, procedures, etc. Terminal User is responsible for ensuring that LNG Carrier owner, its master and agent are familiar with the information provided herein prior to LNG Carrier arrival.

The Booklet is prepared on the basis of publicly available information, legal acts and good practice recommendations. The Booklet is for information purposes only, it does not replace, amend or withdraw any regulations issued by Port Authority and international organizations, but merely highlights the most important aspects of these regulations. All respective persons are obliged to make sure they have the latest versions of such regulations at their disposal and may not rely on this Booklet for the correct version of any applicable laws, regulations or international standards or practices. Terminal Operator is not responsible for the accuracy of the data provided.

For most recent and more detailed information, Terminal User, LNG Carrier owner or its master should contact the Port Authority or local agent.

Responsibilities

LNG Carrier master is responsible for obtaining all necessary permits and other documents before LNG Carrier enters river Elbe or Brunsbüttel Elbe- Port.

LNG Carrier master is fully responsible for safe LNG Carrier navigation at river Elbe and Brunsbüttel Elbe- Port and shall inform the responsible authority in the event of any dangerous situation.

LNG Carrier must always have the sufficient number of experienced English speaking crew on board for carrying out the LNG Carrier's operations safely and efficiently, including supervision and recording of cargo operations, and for immediate initiation and maintenance of ship/shore communication in case of emergency situations.

For the avoidance of doubt, Terminal User in relations with Terminal Operator shall be held fully liable for the responsibilities established for LNG Carrier owner or its master.

References to Port Regulations

1. German Traffic Regulations for Navigable Maritime Waterways
2. Local port regulations of Brunsbüttel Ports (Hafenbenutzungsordnung)
3. Requirements for extraordinary large cargo carriers
4. Port regulations for Schleswig- Holstein

Definitions used in this Booklet shall have the same meaning as used in Regulations for Use of Liquefied Natural Gas Terminal approved by the Terminal Operator unless different meanings are assigned hereunder or the context otherwise requires.

LNG TERMINAL CONTACT INFORMATION

Brunsbüttel Ports GmbH
 Elbehafen
 25541 Brunsbüttel
 Phone: +49 (0) 4852 884-0
 Terminal operator:
 Phone: +49 (0) 4852 884-48
 Fax: 49 (0) 4852 884-26
 Email: info-bp@schrammgroup.de

EMERGENCY CONTACTS

Contact	Telephone Number / VHF
Elbe Pilots office	+49 (0) 4852 87 246 Email: LBE-brunsbuettel@elbe-pilot.de
Elbe Pilots (Pilot request)	+49 (0) 4852 87 295 Email: eta.elbe@elbe-pilot.de HF 08 at Elbe approach (Call sign: elbe pilots) VHF 09 in Brunsbüttel (Call sign: elbe pilots)
German Bight Traffic	+49 (0) 4421 489282 VHF 16/ 79/ 80 (Call sign: German Bight Traffic)
Vessel traffic Service Cuxhaven- Elbe- Traffic	+49 (0) 4721 567380 VHF 71 (Call sign: Cuxhaven- Elbe- Traffic)
Vessel traffic Service Brunsbüttel- Elbe- Traffic	+49 (0) 4852 885393 UTB 68 (Call sign: Brunsbüttel- Elbe- Traffic)
Marine Rescue and Coordination Centre	++49 (0) 421 536 87 - 0 (in emergency) VHF 16 (Call sign: MRCC Bremen)
Police	

Emergency Response Centre (European Emergency Number)	
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1. GENERAL INFORMATION OF BRUNSBÜTTEL ELBE-PORT

1.1. Port Location and Description

Brunsbüttel Elbe- Port is located in the southeastern part of the North sea at the northern part of the Federal Republic of Germany in the estuary of river Elbe. The port consist of a river berth just in the middle between Elbe estuary and the Port of Hamburg.

The Port operates 24 hours a day, 7 days a week and provides facilities for cargo handling, storage, and distribution. The Port is at position:

53°53.2'N 009°10.3'E

The fairway boundary at river Elbe is marked by leading lines and buoys. Regular depth surveys and the sedimentation control are arranged by German Waterways and Shipping Agency.

1.2. LNG Carrier Arrival

1.2.1.Shipping permit:

This permit defines all requirements for safe navigation and has to be followed accurately. Permits are granted by the shipping office in Cuxhaven:

Address: WSA Elbe- Nordsee Cuxhaven
Am Alten Hafen 2
17472 Cuxhaven
Phone: +49 (0) 4721 567 0

1.2.2.Parameters of navigation channel:

Least depth in the navigation channel and berth alongside FSRU starboard side is provided by the Terminal operator in the following order. Terminal operator shall request regularly information on the available depth of waters in the Port (bathymetric surveys) and shall provide, if and when received, such information to the Terminal User, LNG Carrier owner or its master upon their request. It is understood that Terminal operator shall not be held liable in case such information has not been obtained from German Waterways and Shipping Agency and that Terminal operator only transfers the information obtained from German Waterways and Shipping Agency without any verification on its content, completeness and/or correctness and cannot be held liable for its

content, correctness and/or completeness.

1.2.3. Maximum speed:

between fairway buoy 31 and 55a up to 15kn speed through the water
between fairway buoy 55a and 79 up to 14kn speed through the water
within the limits of Brunsbüttel Elbe Port up to 5kn

1.2.4. LNG Carrier and Cargo Limitations

Underway on river Elbe or in the limits of Brunsbüttel Elbe Port there is no special limited size for LNG Carriers. Such ships have to retain the general limits for all ships which are Length of 400m and draft of 15,2m.

Maximum allowable LNG Carrier draft at LNG Terminal between block 6 and 14 is 13.8 meters, at 0 water level and in the absence of sea swells.

1.3. Port Environment

Current information about the wind, current, water conditions, fog, ice, etc., can be obtained from the Vessel Traffic Service (VTS) via

VHF channel 79/ 80 for the area German Bight at hh+00 min.

VHF channel 71 for the area of Elbe Approach at hh+35 min

VHF channel 68 for the area of river Elbe at hh+05 min

The climate in the region of river Elbe is mildly warm, wet, with comparatively warm and seldom snowy winters. Temperatures below 0°C are observed very seldom.

1.4. Fog

Fog can occur all year round, but two major occurrences are observed: one in the beginning of winter in December and one in spring in April. Fog mostly occurs in autumn and in winter. regarding the last years, fog periods are becoming less and the duration of such periods are rarely longer than one day. Port navigation equipment (pilots navigation complex) allows to navigate vessels in less visibility. Traffic centers are providing shore based radar assistance in case of poor visibility.

According to German Traffic Regulations for Navigable Maritime Waterways, oil-chemical- and gas-tankers are not allowed to enter the river at poor visibility less than 1000m. Also unberthing and entering the river from the ports is prohibited.

1.4.1. Ice

Due to the influence of warm weather and the Gulf stream low temperatures with frost periods normally occur only a few days at the beginning of the year from January to March. Icing of the river happens only about every 10 years for a period of a few days up to 2 weeks.

1.4.2. Current

Tidal currents in the German Bight occur between 1- 1,5 knots. Current velocities of river Elbe may rate up to 3,5 – 4,0 knots during ebbtide, 2,5 – 3,0 knots during flood tide.

The incoming tidal stream starts about 30 – 45 min after local low water, the outgoing current starts about 45 min to 1 hour after local high water, always depending on the present wind conditions. After a longer period of westerly winds higher current speeds during ebbtide can be expected.

1.5. Towage

In accordance with Brunsbüttel Elbe- Port regulations tugs used for LNG Carrier arrival, departure and operations in the Port.

As soon as a LNG carrier enters the river Elbe 4 tugs are set to standby condition in Brunsbüttel. Additional tugs are available in Cuxhaven, but they will need 1 hour notice to start any assistance.

Finally for the mooring maneuver there will be 4 tugs each with at least 70 tons bollard pull made fast at the LNG carrier. The tugs are working with tugs lines, mostly steel wires.

Additionally a safety guard vessel will secure the safety zone around the LNG cargo operation.

For the maneuver of unberthing minimum 2 tugs of each 70 tons bollard pull will be required.

1.6. Pilots and Pilotage

LNG Carriers, oil- and chemical tankers with more than 150m loa or 23m width are obligated to take the pilots in the German Bight, close to buoy E3.

All vessels bound for the port of Brunsbüttel with more than 220m loa or 32m width have to take two pilots on board, one is navigating the ship at the river, the other carries out the mooring at the berth as a docking pilot.

All inbound ships taking the Pilot at buoy "E3" have to order pilots at least 24 hours before reaching the pilot boarding area. The given ETA must be confirmed 12 hours before.

Two hours before reaching the pilot boarding area the ship shall get in contact with the pilot station via VHF CH 08.

Contact:

phone +49 (0) 4852 87295

Email: eta.elbe@elbe-pilot.de

Data to be transmitted:

ETA: dd/hh/mm (requested pilot boarding time)

requested boarding area: „E1“, „E3“, „ST“ buoy, Roads

Ships particulars: /Length, Beam, Draught)

Destination

freeboard to pilot access point

Approach via German Bight boarding Station („E3“)

24/12 hours prior to arrival at „E3“ buoy Mail, same data as above!

2 hours prior to arrival „E3“ buoy via VHF CH 08 confirmation of ETA

In addition boarding in all North European ports is available upon request 24 hours prior to sailing

1.7. Pilot boarding arrangement

Most of the pilot boardings are carried out by catamaran pilot tenders. These tender have a freeboard of 3 meters and a platform of 4,5m above the waterline.

Ships being served by the tenders have to prepare a pilot ladder 3,5m above the waterline at the leeside of the vessel.

Vessels with a high freeboard should rig a combination. In these cases the platform of the gangway should be minimal 8 meters above the waterline.

~~At times of very high swell and strong winds more than 55–60 knots incoming~~ ships can be served by helicopter. In these cases an approved and marked landing or winching area is required.

2. LNG Carrier Anchoring Place

2.1. Elbe Approach Anchorage

Approaching large vessels bound for river Elbe should use the “Elbe Approach Anchorage” southerly of “Helgoland” at position 54°03,6’N, 007°43,6’E. This anchorage is formed as a triangle from the mentioned position with an expansion of 2 nm to the north and 3,8nm to the east. The water depths in this area are between 30m and 40m below LAT.

Anchoring vessels at “Elbe Approach Anchorage” do not have to keep a pilot on board, but the pilot can board the ship at anchor if necessary.

2.2. Outer Elbe Anchorage

The closest anchorage to Brunsbüttel for large LNG carriers is the “Outer Elbe Anchorage” northerly of VTS “Elbe Approach”.

This anchorage is marked with buoys at Position

54°03,5’N, 008°06,9’E

54°01,8’N, 008°06,9’E

54°03,5’N, 008°09,9’E

54°01,6’N, 008°13,5’E.

With a depth between 15 and 20 meters below LAT and dimensions of 1,6nm by 3,5nm “Outer Elbe Anchorage” is being used by ships for all purposes.

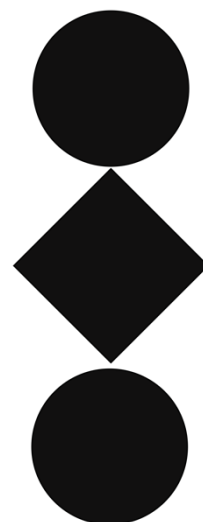
Ships which are obliged to take the pilot already in the German Bight have to keep the pilot on board in this area.

Besides emergency cases there is no anchoring area for large LNG carriers with more than 7,5m draft in the inner part of the river. In cases of intermediate unberthing from the berth the ship has to leave to the Elbe estuary and may anchor at “Outer Elbe Anchorage”, or move further out to “Elbe Approach Anchorage”.

3. Flags and Signals

Within Port limits, from sunrise to sunset, all LNG Carriers shall fly their national flag and the national flag of Germany. In addition, during stay in Port, LNG Carriers shall, comply with the International Code of Signals and display flags, shapes and lights as required by the International Regulations for the Prevention of Collision at Sea. While entering the river all vessels not declared by customs must hoist the third substitute until declaration.

All vessels with more than 330m loa or 45m width are respected as extraordinary large ships and have to show the shapes ball-diamond-ball, during darkness signal lights red-white-red.



4. Ship Agencies

The LNG Carrier's agent is responsible for ordering and coordination of the pilots, tugs and any other services for the LNG Carrier.

The LNG Carrier's agent should advise the LNG terminal Operator of any other activities that the LNG Carrier may request to be permitted while at the Terminal, including:

planned storing activities;
 crew changes;
 visitors to the LNG Carrier;
 cargo surveyor arrangements;
 other planned activities.

5. Local Holidays

Event	Date
New Year's Day	January 1
Easter	First Sunday and Monday of spring with full moon
International Labor Day	May 1
Ascension	May 18
Pentecost	May 28, 29
German reunion	Oktober 3
Christmas eve	December 24
Christmas	December 25 and 26

6. Approach of river Elbe

All ships carrying dangerous cargo with more than 10.000 tons loading capacity are obligated to use the "German Bight Western Approach".

After passing the VTS "East Friesland" and the lightfloat "GW/ Ems" in Position 54°10,0'N, 006°20,8'E the incoming LNG carrier is reaching the VTS "German Bight Western Approach".

Following VTS "German Bight Western Approach" over a distance of 43nm with 088° the vessel will pass buoys "GW/A", "GW/B", "GW/C" and lightfloat "German Bight" (GB).

At this position the course is to be altered to 119° for a distance of 12,5 nm. After passing buoys "E1", "E2" and "Elbe Approach Anchorage" the ship reaches the pilot boarding area 2nm WNW of lightbuoy "E3", marked in the seachart.

From that position the carrier is passing one of the busiest areas in the world with ships approaching and leaving the rivers Elbe and Weser underway from and to Bremerhaven, Hamburg and the "Kiel Kanal".

After following SE'ly courses for 8,5nm from Lightbuoy "E3" to the westerly border of TSS "Elbe Approach" the ship reaches river Elbe.

The distance between lightbuoy "Elbe" and Cuxhaven the Brunsbüttel Elbe- Port amount to 42nm.

Passing Light float "Elbe" the remaining distance to Cuxhaven is 25nm and further on another 17nm to Brunsbüttel Elbe- Port.

Reaching river Elbe at lightbuoy "Elbe" the LNG carrier is passing the dredged channel, located mostly in the center of the fairway, with a depth of minimal 14,8m below chart datum and a width of 400m.

7. Special rules and regulations

During poor visibility, less than 1000m, all tankers and gas- carriers are not allowed to enter the river

Large LNG carriers will be respected as extraordinary large cargo carriers with right- of- way. Thereby they have to follow some special rules.

During the passage on the river, the LNG carrier must keep a distance of at least 3nm to any other extraordinary large cargo carrier, except head on situations.

Stretches of water where the overtaking of right-of-way vessels and of extraordinary composite units as well as between extraordinarily large vessels is prohibited:

- the area of the Mittelrinne between Buoys 15/16 and 19/20,
- the area of Altenbruch between Buoys 35, 36 and 41, 42,

Stretches of water where the overtaking is prohibited of 3 or more vessels subject to compulsory reporting, at least one of whom is constrained by her draught to take the dredged middle of the fairway:

- the area of the Mittelrinne between Buoys 13/Neuwerk-Reede 1, 14 and 23, 24/LL12,
- the area between Buoys 23, 24/LL12 and 29, 30,
- the area of Altenbruch between Buoys 35, 36 and 41, 42,

Stretches of water where no head-on situations are permitted to develop between extraordinary composite units nor between extraordinarily large vessels:

- the area of Altenbruch between Buoys 35, 36 and 41, 42,

8. Reporting points

Inbound:

Entering the inner part of German Bight
using TSS "German Bight Western Approach" from the west:

Position	Report to
While approaching TSS "German Bight Western Approach" from the west: Abeam lightbuoy "GW/B"	„German Bight Traffic“ VHF Ch 80
nm westerly of lightbuoy "GW/C"	„German Bight Traffic“ VHF Ch 80
2 hours prior arrival at pilot boarding area	„Elbe- Pilot“ VHF Ch 08

Entering the inner part of German Bight from the north:

Position	Report to
Passing latitude 54°15,0'N abeam of island Helgoland	„German Bight Traffic“ VHF Ch 80
2 hours prior arrival at pilot boarding area	„Elbe- Pilot“ VHF Ch 08

After boarding of pilots, approaching river Elbe:

Position	Report to
Passing longitude 008°00'E	„Cuxhaven- Elbe- Traffic“ VHF Ch 71 (carried out by pilots)
Passing lightbuoy 53	„Brunsbüttel- Elbe- Traffic“ VHF Ch 68 (carried out by pilots)

During the whole passage of the ship between buoy "E3" and the berth all external communication and reports can be carried out by pilots.

While being underway on the river between the area of TSS "Elbe Approach" and Brunsbüttel LNG carriers are sailing continuously under shore based radar assistance.

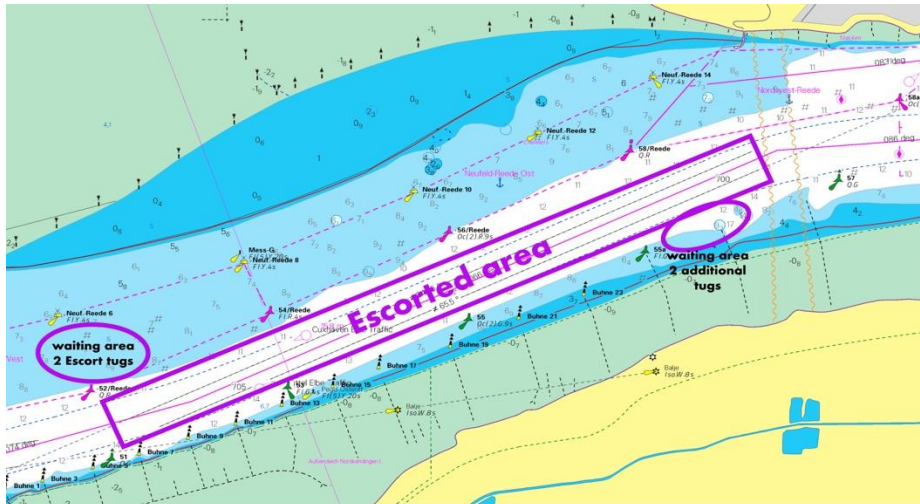
Outbound:

Position	Report to
Passing lightbuoy 54	„Cuxhaven- Elbe- Traffic“ VHF Ch 71 (carried out by pilots)
Passing longitude 008°00'E	„German Bight Traffic“ VHF Ch 80

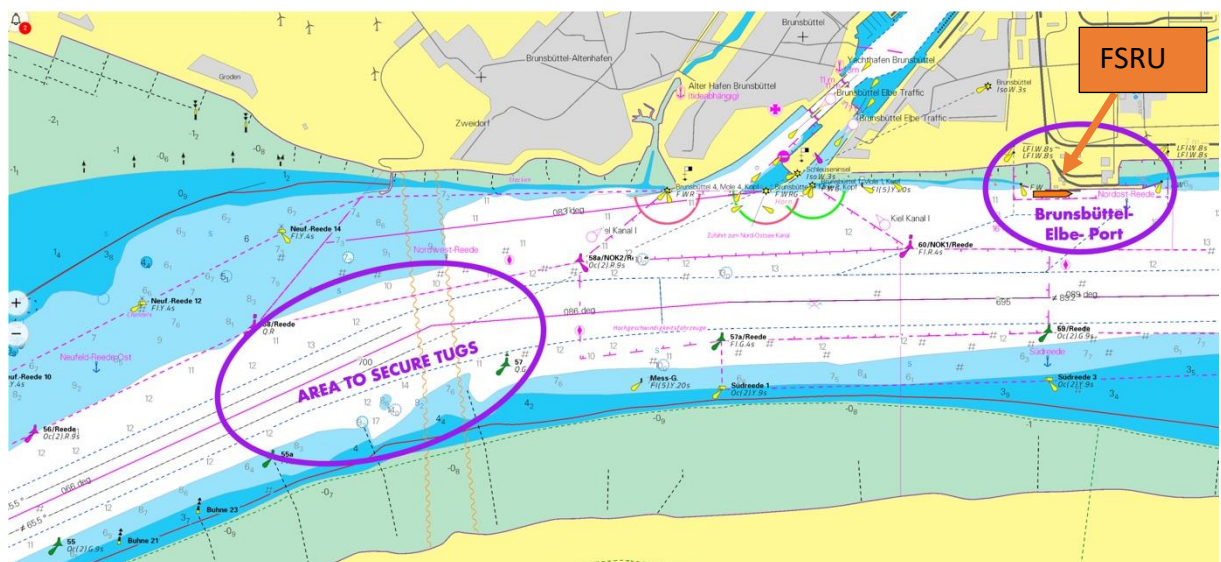
9. Berthing in Brunsbüttel

While entering the inner part of river Elbe LNG carriers are using the dredged deepest part of the fairway with a minimum width of 400m and a water depth of minimal 14,8m below LAT chart datum. The ship is using the incoming tidal wave, therefore a tidal water level of approx. 3,3 m can be added.

During berthing large LNG carriers will have to use 4 tugs of each 70 tons bollard pull.



Passing lightbuoy 55a all 4 tugs should be fastened. At this time the carrier should have a speed less than 7,0 knots.



The FSRU, alongside at the jetty of Brunsbüttel- Elbe- Port, should be fastened at the jetty with her starboard side and so the LNG carrier is also berthing with starboard side.

The tidal current in Brunsbüttel amounts between 2,5 and 3,0 knots.

At the timing of berthing in Brunsbüttel with a ship of 300m loa slack water is preferred to avoid too much dynamic movement caused by the current.

The normal time, the tidal current is changing and slack water occurs is about 00:45 to 01:15 after high water time, depending on wind directions and forces.

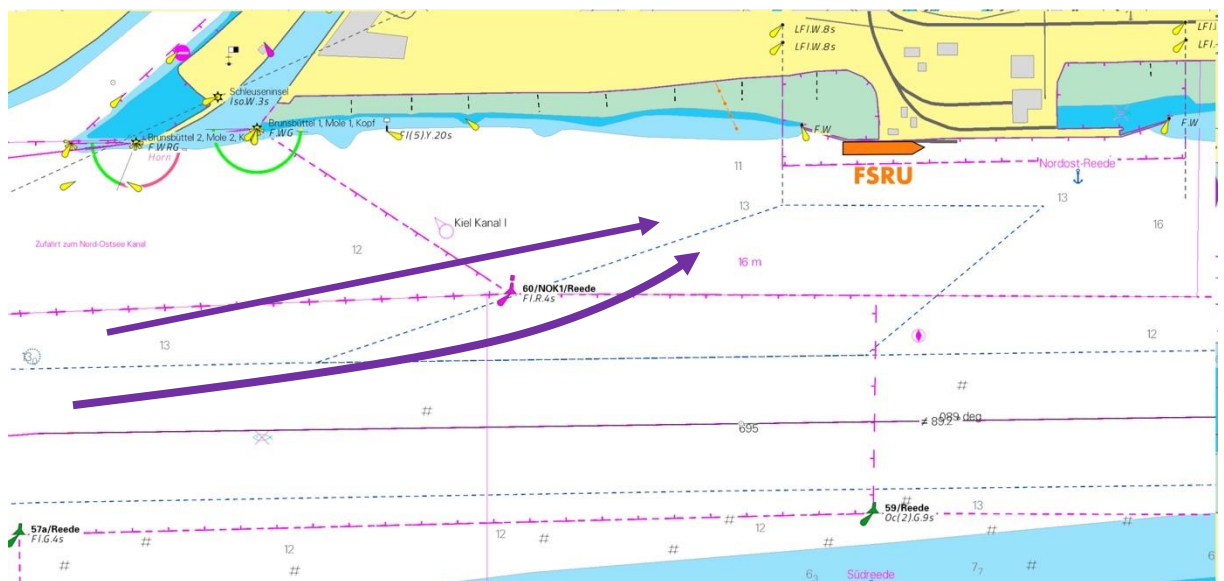
To enter the NO- anchorage just in front of the jetty there are two options.

Lightbuoy “60/NOK1/Reede” can be kept at the starboard or at the port side.

Passing southerly means to pass a region of 16 m below LAT

Passing northerly provides a water depth of 11,0m to 13,0m.

Both water depths can be rectified by 3,0 m tidal range, regarding, that the berthing maneuver will take place just after high water.



At the first step the LNG carrier is to be located parallel to the FSRU with no movements in longitudinal direction keeping a distance of minimum 50m between the ships.

At the second step the LNG carrier will be pushed sideways to the fenders along the hull of the FSRU.

10. Leaving the Jetty

To enable the LNG carrier to leave the jetty in any emergency case, one pilot will stay on the carrier during port stay. Furthermore 2 tugs with fire fighting equipment are standby close to the berth.

Besides the first few calls of large LNG carriers in Brunsbüttel the unberthing maneuver will be assisted by minimal 2 Tugs of 70 tons bollard pull each.

Unberthing can be carried out at all tidal situations.

As soon as all lines are cast off, and the carrier has moved away from the FSRU, she will be turned around with very slow speed to a westerly course.

The available space for this turn is more than 1.000 m between the FSRU and the green buoy line at the southern border of the fairway.

Leaving Brunsbüttel large LNG carrier are following the same rules as mentioned before. Underway with 2 pilots under radar assistance the ship has to follow the same regulations as inbound. The pilots will disembark at the marked Position within TSS "Elbe Approach".

After disembarking pilots the ship has to call VTS "German Bight Traffic" VHF Ch 80 when passing meridian 008°00'E.