

# ТЕМПЕРИ ЛОДЖИСТИКС ЕООД TEMPERI LOGISTICS LTD



# Член на Търговско-Промышлена Палата Стара Загора Chamber of Commerce and Industry Stara Zagora member

9000 България, гр. Варна, р-н Младост, бул. Сливница 166A, ет. 6 ап. офис 45 9000, Bulgaria, Varna, district Mladost, 166A, Slivnitsa blv, fl. 6, off 45

Company Registration № (ЕИК): 206032947

VAT Number: BG206032947

Web page: <a href="www.temperi-logistics.com">www.temperi-logistics.com</a> E-mail: <a href="temperilogistics.bg@gmail.com">temperilogistics.bg@gmail.com</a>

# Top 5 largest offshore oil terminals in Europe

Rotterdam. Antwerp-Bruges. Hamburg. Marseille Fos. Haropa.



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# Introduction

Europe has more than 1,200 major and minor ports on sea and river waterways. Three of them, Antwerp (Belgium), Rotterdam (Netherlands), and Hamburg (Germany), together handle 12% of global cargo traffic.

In Northwest Europe, Rotterdam is the absolute leader in crude oil handling and storage. Between 95 and 100 million tons of crude oil arriving in Rotterdam each year is almost entirely destined for refineries in the port itself, as well as in the Netherlands, Belgium, and Germany. In addition to importing and storing crude oil, the port of Rotterdam also offers opportunities as an oil distribution center.

# 1. Oil terminals of the port of Rotterdam (Netherlands)



**The port of Rotterdam** is the largest seaport in Europe. The port owes its leading position to its excellent accessibility for ships.

The total area of the port is 12,464 hectares, and the land area is 7,966 hectares, of which the leased area, including Maasvlakte 2 - 6,260 hectares.

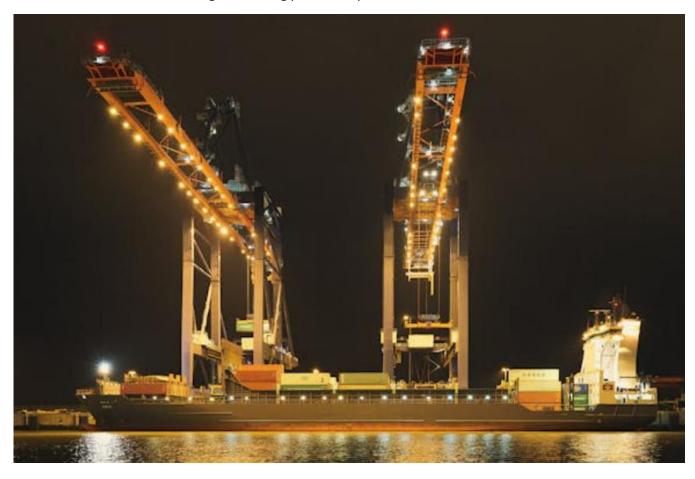
The water area is 4,498 ha.

The total length of the port area of Rotterdam is 42 km. The length of the pier is 79.5 km. The banks (slopes) are 176 km long. Water depth N.A.P. (max) 24 m, depth Eurogeul in the North Sea N.A.P. (max) 26 m.

Oil terminal depth: 12.5 m - 13.7 m. Eurogeul's length in the North Sea is 57 km. Pipelines 1,500 km. Offshore and inland berths: 13 pcs.

Self-contained tank terminals and reservoir storage with a capacity of 31 mln m3. Tanks for storage of petroleum products of about 7.5 million m3 in more than twenty terminals.

Thanks to its ideal location, large storage tanks and considerable in-house production, the port of Rotterdam is an attractive location for handling and trading petroleum products.



Fuel oil, diesel, kerosene, gasoline, naphtha, and bitumen come from places like Russia, the Baltic states, Great Britain, and the refineries in Rotterdam. They are mainly destined for the European market, Asia, and the Middle East.

The Port of Rotterdam is literally in the path of many international trade's flows for the transshipment of petroleum products. The port of Rotterdam has pipelines, barges, and rail transport for transit to Europe. The five refineries of BP, ExxonMobil, Gunvor, Shell, and Vitol in the port area, as well as refineries in the interior, are major producers of petroleum products.

The port of Rotterdam is a very convenient choice for the supply and transit of crude oil in Europe. Crude oil arrives in Rotterdam mainly from the Middle East, the North Sea region, and Russia. Because the tank terminals are located right on the deep sea, and Rotterdam has no locks or tides, Rotterdam can accommodate even the largest oil tankers, such as ULCC and supertankers, with 500,000 tons deadweight.

Through an extensive network of pipelines over 1,500 kilometers long, crude oil is transported efficiently and safely to the refineries.



In Rotterdam, oil tankers unload crude at the crude terminals at Europoort and Maasvlakte. There, the crude is blended according to refinery specifications, which is called blending. The crude terminals then pump the crude oil to the refineries through a network of pipelines. Half of it is transported to BP, ExxonMobil, Shell, and Vitol refineries in the port of Rotterdam. The other half is transported to refineries in Flissingen, Antwerp, and Germany.

At the refineries, crude oil is refined into various petroleum products such as gasoline, diesel fuel, LPG, fuel oil, and naphtha.

# Oil refinery plants

The five refineries in the port of Rotterdam form the core of the petrochemical cluster in the port area. The refineries produce products such as gasoline, diesel fuel, kerosene, heating oil, and raw materials for the chemical industry. The total capacity of the refineries in the port is 58 million tons. In the Netherlands, Belgium, and Germany another five refineries are supplied with (crude) oil by pipelines from the port of Rotterdam.

# Oil refinery plants in the Port of Rotterdam:

- Shell Nederland
- <u>ExxonMobil</u>
- <u>Vitol</u>
- BP
- Gunvor Petroleum Rotterdam

The refineries in the port of Rotterdam receive crude oil by tankers from regions including the North Sea region, Russia, and the Middle East.

The port of Rotterdam has the advantage that even the largest oil tankers can enter the port, loading, and unloading in one visit at the oil terminals. Crude oil is transported by pipeline to the refineries in Rotterdam and to outlying areas.

#### Cluster with Flissingen, Antwerp, and Germany

The petrochemical cluster in Rotterdam is not isolated. Together with the Total/Lukoil refineries in Flissingen, Shell in Godorf, BP/Rosneft in Gelsenkirchen, and Total and ExxonMobil in Antwerp, the port of Rotterdam forms one of the three largest fuel hubs in the world.

Excellent sales opportunities in Europe and abroad, and a wide range of storage tanks, ensure large-scale fuel trading in Rotterdam.

# Fuel and chemical raw materials production

Refineries refine crude oil into a variety of products. About 85 percent of production consists of diesel, gasoline, gasoil, heating oil, and liquefied petroleum gas for the European market or world trade. The remaining 15 percent consists of naphtha, base oils, and bitumen. Naphtha is converted into aromatic hydrocarbons or alkene and serves as a chemical production feedstock. Oils are processed into lubricants, and bitumen is the raw material for products such as asphalt.

# **Contacts:**

Jaap van Dalen
Business Manager Oil and Refining
+31 (0)10 252 1230

# Storage of fuel oil, gasoline, diesel, naphtha, and kerosene

The tank terminals are the heart of commerce in Rotterdam.

Petroleum products such as fuel oil, gasoline, diesel, naphtha, and kerosene can be stored in storage tanks until they are sold or shipped at the right price and in the right quantities. In addition, the location of the fuel storage tanks provides access to the European and Rotterdam pipelines, to which various airports, for example, are also connected. Most of the European market can be reached via river tankers. In Rotterdam, independent tank terminal operators together offer around 7.5 million m3 of petroleum product storage capacity in more than twenty terminals.

#### Safe and efficient ship-to-ship transshipment at buoys and dolphins

In addition to storage and handling at tank terminals, the Port of Rotterdam also offers extensive opportunities for safe and efficient ship-to-ship transshipment. The Port of Rotterdam is the only place in the world with so many buoys and dolphins. On these buoys and dolphins, petroleum products can be transferred directly from one seagoing vessel to another or an inland vessel and vice versa.

With 31 buoy and dolphin berths, the Port of Rotterdam offers opportunities for flexible, efficient, and safe ship-to-ship transfers. The berths are an attractive complement to the transshipment possibilities at the terminals and provide a safe alternative to ship-to-ship transshipment on the high seas.

# Third quarter 2022 figures.

In the first nine months of 2022, the Port of Rotterdam handled almost as much cargo as last year: 351 million tons (+0.3%).

For liquid cargo, the increase was 3.9%.

Petroleum products decreased (-13.1%), especially due to lower fuel oil shipments from Russia, but other cargo increased: more crude oil (+5.4%) and other liquid cargoes (+18.4%) were handled.

All categories in the other liquids section show growth: chemicals, biofuels, vegetable/animal oils, and fruit juices.

LNG volume growth was very strong (+73.8%). Much more LNG comes from the U.S. and other countries to replace Russian natural gas, which was previously supplied to Northwest Europe.

Contacts: +31 (0)10 252 10 10

Official website: https://www.portofrotterdam.com/en/logistics/cargo/liquid-bulk/crude-oil

# 2. Antwerp oil port terminals (Belgium)



Antwerp-Bruges is the port of Antwerp, Europe's leading integrated oil, gas, and chemical cluster, a deepwater port available for liquid and bulk carriers with a capacity of 160,000 tons and extra-large container ships with a capacity of 18,000 TEU, receiving vessels with a sea draft up to 16 meters.

Bruges is one of the main entry points for LNG shipments to Northwest Europe.

The Port of Antwerp-Brugge is home to over 7 million m3 of liquid storage, 2 refineries (TotalEnergies and ExxonMobil refineries) from the top 10, 4 steam cracking units and at least 30 companies operating in the petrochemical sector, including at least 10 leading global players.

The Port of Antwerp has more than 1,000 kilometers of intra-port pipeline infrastructure, transporting more than 100 products.



Operator: TotalEnergies (100%)

The TotalEnergies complex is located near the port of Antwerp, in the Antwerp-Rotterdam-Amsterdam (ARA) transport hub serving European oil markets.

The site includes Europe's third-largest refinery processing 338,000 barrels of oil per day, a petrochemical plant, and a polymer plant with an annual capacity of 1.1 million tons of ethylene.

The TotalEnergies complex, which employs about 1,700 people, produces a range of petroleum products, including fuel oil, gasoline, liquefied petroleum gas, diesel, and jet fuel.

It also produces basic chemicals such as olefins, C4 fractions (from butane), and aromatic compounds, some of which are processed into polymers (high-density polyethylene).

These products are used in several consumer and industrial applications, such as packaging and automotive components.

The TotalEnergies complex processes crude oil into gasoline, diesel fuel, liquefied petroleum gas (LPG), and kerosene.

It has 35 units to produce low-sulfur fuels, biofuels, and feedstocks (naphtha, butane, aromatics, propylene) for petrochemical production. It also has two steam cracking units: one to produce ethylene and the other to process pyrolysis oils from plastic waste to produce recycled polyethylene.

TotalEnergies has chartered nearly 2,700 ships to carry 120 million metric tons of crude oil and petroleum products in 2021.

TotalEnergies maintains a steady fleet of nearly 47 chartered vessels and applies one of the oil industry's most rigorous selection standards to each. In 2021, TotalEnergies sold more than 42 million metric tons of LNG by transporting this gas aboard heavy-duty gas tankers capable of maintaining an extremely cold chain (-163°C) between the liquefaction site and the regasification plant.

#### Onshore infrastructure

Access to advanced infrastructure to transport hydrocarbons onshore through participation in approximately 30 gas pipelines worldwide. This allows us to efficiently deliver gas and oil from the fields to storage centers and major consumer hubs.

LNG/LNG requires a special supply chain including regasification terminals because the liquefied gas has to be converted back into a gaseous state before it can be fed into distribution networks. Whether through acquired interests or reserved regasification capacity, we are currently operating at six sites and soon a seventh site currently under construction: Dunkirk, Montoir and Fos Cavaou (France), South Hook and Isle of Grain (UK), Zeebrugge (Belgium) and soon Dhamra (India).

#### **Indicators**

With over 700 companies, a turnover of 62 billion euros, and 90,000 direct employees, the integrated oil, gas, and chemical cluster in Antwerp is the largest in terms of industrial value added created. The sector exports 80% of its products and generates a trade surplus of 25 billion euros.

#### **Contacts:**

Administration of the Port of Antwerp:

oilandchemical@portofantwerp.com

Official website: <a href="https://www.portofantwerpbruges.com/en">https://www.portofantwerpbruges.com/en</a>

TotalEnergies Belgium: care.pro@totalenergies.be

Official website: <a href="https://totalenergies.com/belgium-0">https://totalenergies.com/belgium-0</a>

# 3. Liquid terminals of Hamburg seaport (Germany)



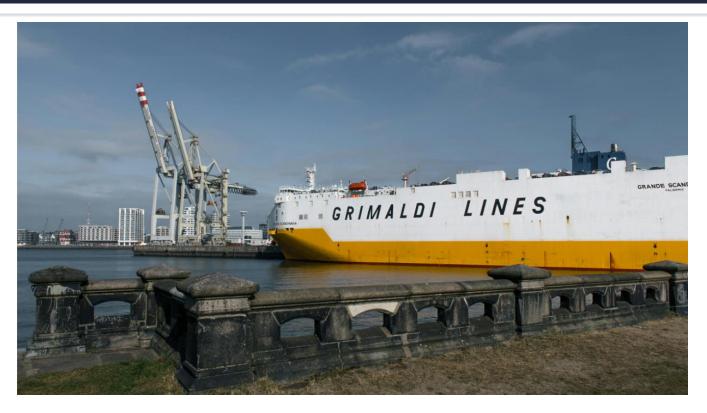
The Port of Hamburg (Hamburger Hafen), a seaport located on the Elbe River, 110 km from the North Sea, is the world's largest universal port offering suitable handling facilities for all types of cargo: from general cargo in containers to bulk cargo, from project cargo to liquid cargo. It is the third-largest port in Europe. There are also special terminals for recyclables and secondary processing goods. Over 71 square kilometers, more than 50 transshipment facilities are providing

uninterrupted handling of various goods. Some 290 berths offer space for ships of all sizes: especially large container and dry bulk carriers, oil and chemical tankers, ro-ro and general cargo ships, feeder ships, and barges.



# Liquid cargo terminals in the port of Hamburg

ADM Hamburg Aktiengesellschaft
Bomin Tanklager Hamburg
Cargill GmbH
Evos Hamburg - Site Neuhof
H&R Ölwerke Schindler
Haltermann Products
HOLBORN Europa Raffinerie GmbH
Nynas GmbH & Co. KG
Oiltanking GmbH
Hywax GmbH
Shell Grasbrook Lubricants Center
TWG Tanklager Wilhelmsburg



# **ADM Hamburg Aktiengesellschaft**

ADM is a leading biodiesel producer in Germany and Europe and has Europe's largest oilseed processing and refining facility, which processes and refines canola and soybean seeds for use in margarine and vegetable oils, bakery products, frying products, pharmaceutical glycerin, and biodiesel.

Berth: 4 berths, quay length 175m, maximum draught 12.3m, transport links: railway, barge, seagoing ship, tank farm capacity 180,000 tonnes, 3 loaders 1,000 tonnes/hour.

## **Contacts:**

+49 40 75194 0 http://www.adm.com info@adm.com

# **Bomin Tanklager Hamburg**

Products: heating oil EL, diesel, gasoline, naphtha, etc.

Oiltanking Deutschland stores various products - from gasoline to middle distillates and biofuels - in its tank farms and reloads them for its customers.

Own berth for sea and river barges, storage tanks in Oiltanking oil depots

with a capacity of 869,805 m3 and 113,862, 72, and 22 tankers with tank sizes ranging from 5,000 to 50,000 m3 at the ports of Hamburg (Hamburg-Blumensann and Hamburg-Waltershof).

Wharf capacity is 100,000 and 50,000 deadweight.

Wharf: 2 berths, maximum ship length 240 m, maximum draught 13.8 m, transport connection: barge, seagoing ship, tank farm capacity 120,000 tonnes.

In 2020, the total throughput capacity was about 18.2 million tons.

#### **Contacts:**

+49 40 37004-0, +49 40 37004-9116

http://www.bomin.com

tanklager-hamburg@bomin.com

# **Cargill GmbH**

#### **Contacts:**

+49 40 771 14 0

https://www.cargill.de

Info De@cargill.com

# **Evos Hamburg - Site Neuhof**



Evos Hamburg GmbH, which since October 1, 2019, is a subsidiary of First State Investments, an international division of First Sentier Investors, offers its services for storing and handling liquid petroleum products in Hamburg.

The storage facility for petroleum products is located directly in the port of Hamburg and has five bridges for marine vessels and tankers. In addition, tanker trucks and tank wagons (shuttle trains) are loaded and unloaded in large quantities.

The terminal is connected by pipeline to two neighboring refineries. In addition to existing storage facilities, the terminal also offers specialized loading and unloading facilities and access to the adjacent road and rail network.

The terminal offers storage and transshipment of liquid mineral oils, biofuels, and vegetable oils. Related activities include not only storage and handling but also heating, blending, or adding to products.

Wharf: 5 berths, 250 m long quay, maximum draft 12.5 m, transportation: railroad, barge, seagoing ship, tank farm capacity 680,000 tons, 170 tanks.

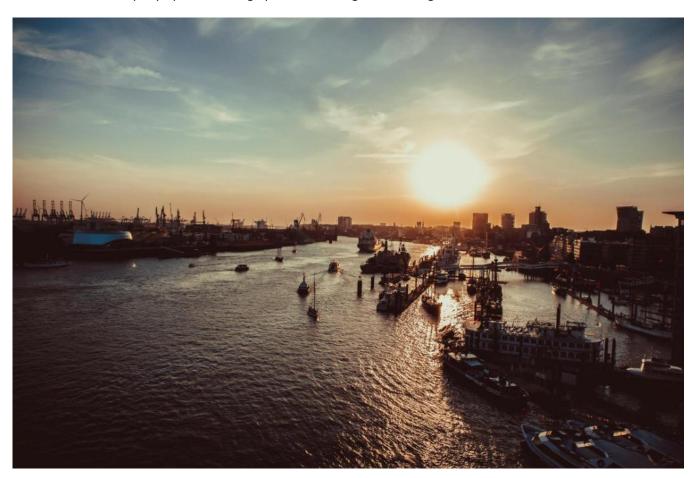
#### Contacts:

+49 40 751960 http://www.evos.eu

#### **H&R** Ölwerke Schindler

H&R Ölwerke Schindler GmbH operates a specialized refinery in Hamburg and produces high-quality white oils, paraffin and base oils, unbranded plasticizers for the tire industry, and crude oil-free plasticizers.

In addition, the company operates a large plant for mixing and bottling marine lubricants.



# **Contacts:**

+49 40 32523 0 http://www.hur.com info@hur-chempharm.de

#### **Haltermann Products**

Haltermann Carless is a chemical company specializing in product lines such as oil and gas, pentanes, high-performance fuels, high-performance solvents, heavy aromatic compounds, printing ink distillates, and base oils.

Products for the oil and gas industry.

# **Burning Oils Naphtha White Spirit**

Processing of unique grades of condensate, light crude oil, and blended hydrocarbon products into combustible oils (a range of kerosene products intended for domestic and commercial use), naphtha for the petrochemical and refining industry in Europe for the production of ethylene, reforming and blending gasoline, special grades of kerosene (white spirit and Clairsol 310).

They are delivered by sea, rail, or road. Finished products are offered in barrels, IBC, and bulk shipments by road, rail, and sea transport.

#### **Contacts:**

+49 40 333180

http://haltermann.com ibehrendt@h-c-s-group.com

# **HOLBORN Europa Raffinerie GmbH**

HOLBORN Europa Raffinerie is a terminal refinery supplying Hamburg and northern Germany with fuel and heating materials, with an annual throughput of up to five million tons of crude oil into gasoline, diesel, and heating oil, as well as various raw materials for the chemical industry.

#### **Contacts:**

+49 40 76630 http://www.holborn.de

info@holborn.de

#### Nynas GmbH & Co. KG

Harburg Raffinerie Werkteil Nord terminal, which processes extra-heavy crude oil into blends of special naphthenic oils and bitumen products.

#### **Contacts:**

+49 40 7565 0

https://www.nynas.com/en/contacts/

#### Oiltanking GmbH

Oiltanking Deutschland GmbH & Co. KG is one of the companies in the port of Hamburg specializing in liquid cargo handling and storage. It is owned by Oiltanking GmbH, a subsidiary of Marquard & Bahls AG of Hamburg, which is responsible for tank storage logistics.

Types of products: crude oil, distillates, fuels, biofuels, petroleum products.

Oiltanking operates a tank farm in the Hohe Schaar port area, where petroleum products and biofuels are mainly stored and handled. The tank farm is easily accessible by truck and is directly connected to the European rail network, which allows very flexible planning of deliveries from nearby areas and onward transport from Hamburg. Hamburg, with its berths for sea and river vessels, serves as a transit terminal for international maritime transport for the transshipment of liquid cargo at sea.

# **Contacts:**

+49 40 37099 0 http://www.oiltanking.com info@oiltanking.com



# **Hywax GmbH**

# **Contacts:**

+49 40 781150 https://www.hywax.com/ info@hywax.com

#### **Shell Grasbrook Lubricants Center**

The Grasbrook Lubricants Center in the port of Hamburg produces most of the lubricants sold under the Shell brand name in Europe. The plant is one of the largest in Europe and is part of the Shell Group.

About 436 million liters of lubricants are produced here every year.

#### Contacts:

+49 40 781080 http://www.shell.de kontakt@shell.com

# TWG Tanklager Wilhelmsburg

The Wilhelmsburg Tank Farm offers comprehensive storage and handling services for mineral oils, biogenic liquids, and many other specialty products.

The tank farm can be reached by sea (up to 9 m draft) and river vessels - the shipping lanes connect the Port of Hamburg with over 900 ports in more than 170 countries. The tank farm can also be reached by rail and road tankers.

The tank farm covers an area of 5 hectares and has a transshipment capacity of 300 t/h.

The Wilhelmsburg tank farm currently has 22 tanks with a total capacity of 74,000 cubic meters, 14 of which are operated in tank farms 1 and 2 with a total nominal volume of about 35,000 m³. These tanks have nominal capacities ranging from 500 m³ to 6,000 m³. 8 tanks of 5,000 m³ each (total nominal capacity of 40,000 m³) in Tank Farm 7.

Tanklager Wilhelmsburg GmbH is licensed to store combustible petroleum products (diesel, heating oil, etc.), biodiesel, vegetable oils, liquid fertilizers, and other special products (liquid latex, salt solutions, etc.). In addition, TWG is registered as an energy tax warehouse and approved labeling company.

# Contacts:

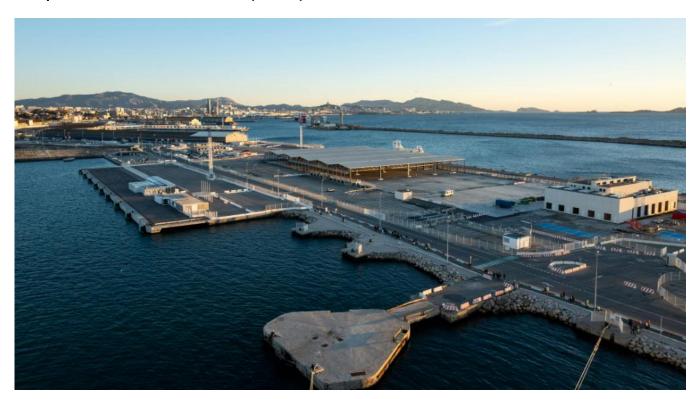
+49 40 751590 http://www.twg-hamburg.de villeumier@twg-hamburg.de

# Port of Hamburg liquid bulk terminal indicators

In 2021 the volume of liquid cargo handled at the Port of Hamburg was about 12 million tons.

Imports of petroleum products are particularly noteworthy. One of the largest handling and storage companies in Hamburg is the Vopak Dupeg terminal. Up to six million tons of petroleum products, chemicals, vegetable oils, and gases can be transshipped, stored, and processed here every year. The tank has a capacity of about 700,000 cubic meters. Another operator of the tank terminal is the international company Oiltanking. With a storage capacity of more than 870,000 cubic meters, Oiltanking handles up to seven million tons of liquid cargo annually at its facility in Hamburg.

# 4. Liquid terminals of Marseille Fos (France)





**Marseille Fos** - France's leading port, and a major player in international trade, the port of Marseille Fos accommodates about 10,000 ships, handles 79 million tons of goods, and serves 800 customers.

The Berre - Fos - Martigues Triangle

The Berre-Fos-Martigues triangle consists of a petrochemical complex with almost 2,000 small and medium-sized companies and is one of the largest transport hubs in Southern Europe.

Four interconnected industrial sites: Fos-sur-Mer (including PIICTO with INNOVEX), Laverre, Berre, and La Med.

Industry leaders: TOTAL, EXXON, INEOS, ENGIE, KEM ONE, ALKION, LYONDELBASELL.

3 chemical and petrochemical terminals and 2 LNG terminals.

Full multimodal communication. Pipelines directly connected to the European network.

Numerous storage facilities: refineries de la Crau, SPSE, Geosel, Dépôts Pétroliers de la Crau, SPSE, Geosel, Dépôts Pétroliers de Fos.

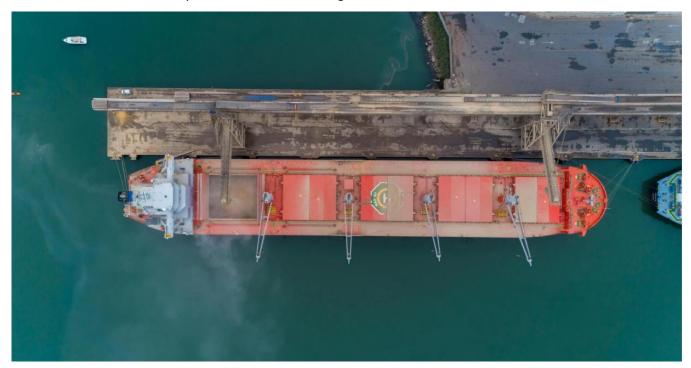
# **Liquid cargo terminals:**

# Marseille harbours liquid cargo terminal

Operator: MEDIACO-VRAC with supply chain services

MEDIACO VRAC provides warehousing services: storage of liquid bulk materials / stockage vracs liquides, full logistics services in the ports of Fos and Le Havre.

An area of 400 hectares. Quay: 2 berths 150-170 m long. Draft 9,30-10,50 m.



Products: vegetable oils, juices, non-flammable chemicals. Connections: the railroad.

Special conditions: customs warehouses, surveillance (FOSFA accredited), unloading and loading of ships, and flexitanks.

# Marseille harbors terminal figures:

250,000 tons of liquid liquids per year. 100,000 m<sup>2</sup> of storage space in the ports of Fos and Le Havre.

#### **Contacts:**

04 91 09 59 00
<a href="mailto:contact@mediacovrac.fr">contact@mediacovrac.fr</a>
https://www.mediacovrac.com/

#### Lavéra harbours oil terminal

Operator: FLUXEL (Port of Marseille-Fos, 66% stake).

Service companies: AIR LIQUIDE, APPRYL, GEXARO, KEM ONE, INEOS, LAVERA ENERGIE, NAPHTACHIMIE, OXOCHIMIE, PETROINEOS, MESSER, SPSE

Lavera is a suburb of Marseille. The harbor was specially designed and equipped for handling refined products and unloading oil tankers.

Each berth has flexible pipe connections with articulated metal brackets supported by special cranes. The type of pipeline depends on the product handled (crude or refined) and is connected to storage tanks of CFR, Shell, SFP-BP Lavera Refinery, and the SPLSE marine terminal (supplies the Esso refinery in Foz).

Area 650 hectares. Waterfront: 17 berths. Draft 12.50 m.

Products: petroleum products, LPG, chemicals, MEJK, vegetable oils. Communication: pipeline.

Storage warehouses: \*ALKION: 130,000 m 3 refined products, chemicals, additives, vegetable oil, bitumen \*GEOSEL: 9.2 m cu. GEOGAZ, PRIMAGAZ: LPG \*INEOS OXIDE: chemicals.

#### Chemicals:

Ship pumps capacity 150 t/h, land pumps capacity 150 - 300 t/h Capacity: MAVRAC: 53,000 m3, density 0.80 - 1.62

#### Berths:

- -Pier A1, No. 711: LOA: 110 m; draft: 9.5 m; notes: LPG, chemicals.
- -Pier A2, No. 712: length 110 m; draft: 10.1 m; notes: Products, chemicals.
- -Pier A4, No. 714: length 200 m; draft: 11.3 m; notes: Products, LPG, chemicals.
- Berth B, No. 721: 40,000 tons deadweight; length: 250 m; draft: 10.5 m; notes: crude, products.
- Berth C, No. 722: deadweight 40,000 tons; length: 250 m; draft: 10.5 m; notes: raw, products.
- -Pier D, No. 723: deadweight 50,000 tons; length: 250 m; draft: 10.6 m; notes: raw, products.
- Berth E, No. 724: deadweight 40,000 tons; length: 250 m; draft: 11.5 m; notes: raw, products.
- Berth F, No. 725: deadweight 70,000 tons; length: 250 m; draft: 11.6 m; notes: crude, products, LPG.
- Berth G, No. 726: deadweight 70,000 tons; length: 250 m; draft: 12 m; notes: LPG. -Pier H, No. 727: length 200 m; draft: 11 m; notes: LPG, chemicals.
- -Pier H Bis., No. 728: LOA: 130 m; draft: 10.4 m; notes: LPG, chemicals.
- -Pier K1, no. 701: LOA: 90 m; draft: 6.1 m; notes: Products, LPG.
- -Pier K5, No. 705: length 100 m; draft: 5.8 m; notes: Products.
- -Pier K6, No.706: length 100 m; draft: 5.9 m; notes: Products. Cargo mark area: Summer.

#### Fos-sur-Mer harbours oil terminal

Operator: FLUXEL (Port of Marseille-Fos, 66% shareholder)

Area: 10,000 hectares. Waterfront: 7 berths. Draft: 21 meters. Ship capacity: 80,000-130,000 tons.

Products: raw, refined. Communication: pipeline

Storage Depots: \*Dépôts Pétroliers de Fos (DPF): 860,000 m3 of petroleum products, SPSE: storage of crude oil and petroleum products (naphtha, diesel), transportation of crude oil by pipeline, supplying the Total refinery in Feyzin in France, the Varo refinery in Cressier in Switzerland. Also supplies Petrolneos Manufacturing France refineries in Lavere, Total-la-Mede, and Esso-Fos via Dépôt Pétrolier de Crau (DPC) warehouses.

#### **LNG Terminals**

#### **Terminal Fos Cavaou**

Parent port: FOS SUR MER

Darse Sud - FOS SUR MER pool



Operator: ELENGY

The area of 80 hectares. Waterfront: 1 pier at each site. Ship capacity: 500 m 3 to 267,000 m 3 Q max. Products: LNG. Communication: road, railroad, and barge.

The Fos Cavaou LNG terminal is strategically located on the Mediterranean coast, in the heart of the port of Marseille-Fos. It is located at the crossroads of maritime routes and overland natural gas transportation means (natural gas pipelines), enabling it to offer privileged access to all European markets for LNG shipments to numerous ports in the western Mediterranean. FOSMAX LNG, a 100% subsidiary of Elengy, owns the Fos Cavaou terminal.

Fos Cavaou is one of three regulated LNG terminals operated by Elengy. The Elengy Fos Cavaou LNG terminal, with an area of more than 80 hectares and a berth depth of 15 meters, has been in operation since April 2010. Located at the entrance to the port of Fos-sur-Mer, it can handle all types of gas carriers with a capacity of 5,000 to 270,000 m3.

Connections: road, rail, and barge

#### Fos Tonkin Terminal



Operator: ELENGY

Parent port: FOS SUR MER

Darse 2 pool FOS SUR MER.

Fos Tonkin Terminal, one of the three LNG terminals operated by Elengy, is a true multi-modal platform in the western Mediterranean basin and provides LNG services: rail, road, water, and sea. In addition to unloading LNG wagons and loading LNG tankers, the terminal now offers a service for the transshipment of small gas carriers by the development of LNG as a fuel for the maritime sector, a vector of decarbonization.

1 berth for gas carriers with a capacity of less than 75,000 m3 (Med-Max). Connections: road, railroad, and barge.

LNG regasification capacity2.20 million tons/year (MTPA). 3 LNG storage tanks with 150,000,00 m³ capacity. Onshore type

#### **Contacts:**

https://www.elengy.com/en/our-locations/terminal-montoir-bretagne

#### Marseille-Fos port indicators:

Crude oil is 43 million tons/per year, LNG is 6 million tons/per year, and petroleum products are 20 million tons/per year.

# **Contacts:**

Fabienne HANAUER - Coordinator of Bulk Liquids

+33 4 91 39 45 36

fabienne.hanauer@marseille-port.fr

https://www.marseille-port.fr/en/filieres/liquid-bulk\

# 5. Liquid terminals of Haropa Port (France)



Haropa Port is a major refining and chemical complex in Europe. The area is strategic for the supply chain with direct access to multimodal connections (sea, rail, barge, pipe, road) and easy access to utilities.

# HAROPA PORT has 3 main sites for receiving ships in the sector:

- The Havre site, equipped to receive crude oil, petroleum products, and other liquid liquids
- - Antipheur, which receives supertankers with no restrictions on draft
- - pads in Rouen and Port-Gerome for oil tankers and chemical tankers

# **HAROPA PORT liquid bulk terminals:**

 Terminals in Le Havre, Antiferre Oil Terminal (CIM-CCMP), Terminals Rouen and Port-Gerome, Refinery and Petrochemical Terminal, Agrofood Terminal, Ile de France Terminals, totaling 7 million m³ of chemical and energy liquid storage.

#### **Terminals in Le Havre**

- Le Havre, France's second port for liquid cargo.
- Antifer, XXL oil port: draft 18 m, with direct access to VLCCs of up to 250,000 deadweight tons (at high tide)

Around-the-clock reception of ships.

Chemical berths in a level basin, draft 13.8 m.

Chemicals: aromatic compounds, butadiene, olefins, additives, liquids, solvents, biofuels, technical alcohols, sulfur, commodities, naphtha.

The Port of Le Havre combines the activities of a European-scale refinery integrated with a European-scale petrochemical complex and 7 chemical plants (fertilizers, 2 global additive manufacturing plants, solvents, plastics, biofuels, rubbers, etc.).

Total area 10,000.0 ha. Inland waterways (linked to the Seine), deep-sea harbor (HAROPA-Grand Port Maritime du Havre), no draft restrictions, rail and road connections (less than 200 km from Paris).

The refining activity employs 2,970 people.

In the cluster, Le Havre has storage, loading, and distribution facilities, eleven berths (terminals) equipped to receive supertankers with deadweight up to 550,000 tons. Pipelines from refineries in Normandy and the Paris area are connected to the terminals. The storage capacity of petroleum products in Le Havre exceeds 6 million m3:

- Crude oil and petroleum products storage 5 700 000 cubic meters
- Motor fuels, heavy fuel, and bunkers provide storage of 350,000 cubic meters.
- Chemicals and petrochemicals: hazardous cargoes providing storage of 60,000 cubic meters.
- Non-hazardous liquids 105,000 cubic meters.

- Liquefied hydrocarbon gases 60,000 cubic meters.
- Hazardous product distribution and storage of 10,800 metric tons and 3,600 square feet.



Capacity: 12.2 million tons per year and 240,000 barrels per day, providing 12% of the French fuel market.

European-scale petrochemical complex (525,000 % of plastic production in France / 13% of styrene production in Europe (the last styrene plant in France).

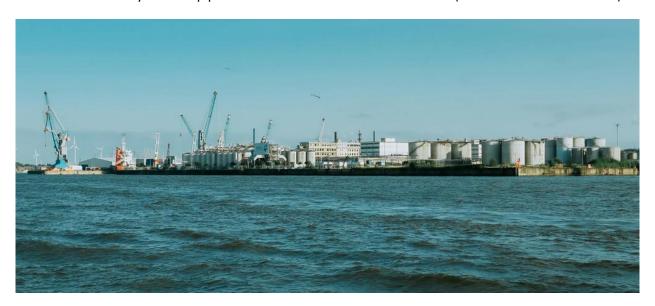
# Liquid cargo storage facilities

All liquid cargo storage platforms are connected to the sea. Le Havre is a deep water port without draft limitation for crude oil and high draft for other products (up to 13.8m), 95 silos (PE, PS, PP,...), 90,000 m3 (Katoen Natie), 4 operators/5.6 million m3 for fuel and chemicals/storage solutions made by Taylor (heated tanks, stainless steel tanks), four-modal with access to road, barge, pipe, rail (dangerous products: LBC SOGESTROL).



# **Antifer oil terminal (CIM-CCMP)**

- Direct access to tankers of up to 550,000 tons deadweight, 35 m draft.
- 20% of the crude oil imported into France
- 25 000 m<sup>3</sup> per hour
- Storage capacity: 640,000 m³, including 4 tanks of 150,000 m³ crude oil and 2 tanks of 20,000 m³ auxiliary, connected by a 26 km pipeline to the CIM oil facilities in Le Havre (TRAPIL and CEPS networks).



#### Rouen and Port-Jérôme terminals

- 3rd French liquid cargo port
- Draught 10.5 m at high tide and 11 m at low tide.

# Oil refining and petrochemical terminal

- 6 beds
- Loads up to 50kT
- Sectors: petroleum products, chemicals, olefins.

# **Agri-food terminal**

- 1 bed
- Shipments up to 8kT
- Sectors: biofuels

#### **Ile-de-France terminals**

- Genvilliers: entry point of the Lower Seine pipeline and connection point to the ring road network around Paris (TRAPIL network); petroleum depots in the port
- Limet: 1st seaport in the Ile-de-France region; multivolume platform capable of storing all types of traffic

#### Multimodal rail and river connections

HAROPA PORT offers inland rail services for conventional and chemical cargoes: more than 40 trains a week, including a dedicated rail service for chemical cargoes, which sends more than 10 trains a week to Belgium and the Netherlands.

HAROPA PORT's inland river offer is adapted to the capacity and security needs of industrialists and players in the chemical and energy sectors (transportation on demand or long-term contracts). HAROPA PORT partners operate 12 river barges with capacities from 2,000 to 2,500 tons.

#### **Pipeline connections**

HAROPA POR has close ties to several pipeline networks connecting the Seine PORT HAROPA axis ports with industrial sites and consumption basins in France and Europe:

- TRAPIL network (storage and distribution of hydrocarbons in the Paris area)
- CEPS network (supply of fuel to main European airports)
- Industrial connections Stockists and interconnectors

Liquid cargo figures:

45% of French refining capacity - 39 million tons

- 23.8 million tons of crude oil per year
- 19 million tons of petroleum products per year
- 3.3 million tons of chemicals per year

# **Contacts:**

HAROPA General director Bruno Vitali

+33(2)35-52-54-56

Communication.rouen@haropaports.com

HAROPA - Port of Le Havre

+33(2)32-74-74-00

Communication.havre@haropaports.com

HAROPA - Port of Rouen

+33(2)35-52-54-56

Communication.rouen@haropaports.com

Official website: <a href="https://www.haropaport.com/en/liquid-bulk-terminals">https://www.haropaport.com/en/liquid-bulk-terminals</a>



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