

# **The fertilizer industry and the Port of Rotterdam; global players affected by global trends**

**13<sup>th</sup> Stamicarbon Urea Symposium**

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# The fertilizer industry and the Port of Rotterdam; global players affected by global trends

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## 1. INTRODUCTION

Located in the heart of Europe's industrialized, highly-populated triangle of the German Ruhr district, Paris, and London, the Port of Rotterdam is strategically positioned on the world's busiest sea. The Port of Rotterdam's annual throughput amounts to some 450 million tonnes. This makes the Port of Rotterdam Europe's largest port for containers and both liquid and dry bulk.

The port area includes 12,500 ha (land and water, of which approx. 6,000 ha is business sites). The total length of the port area is more than 40 km. It is an important distribution point for products going all over inland Europe which nowadays is particularly evident in the container sector that has shown a continuous growth since the 1950s; approximately 30,000 seagoing vessels and 110,000 inland vessels visit the Port of Rotterdam every year.



The Port of Rotterdam is the largest container port in Europe. Due to its unrestricted depth, the port is accessible 24/7 to even the largest container vessels. On a yearly basis, about 12 million containers are handled. In 2014 there was a 5.8% increase in container throughput, to 12.3 million TEUs (Transport Equivalent Units based on 20 ft standard 20 containers), and a 5.2% increase in freight handled to 127.6 million tonnes. The Port of Rotterdam has a unique position in the petrochemical industry and has several oil refineries as well. Crude oil arrives by oil tankers with a length up to 270 meter long and 51.990 net tonnage, 51990, to be processed in Rotterdam and delivered to areas in The Netherlands, Germany, and Belgium, or other places in the globalising world. On Wednesday 11 July 2012, the map of the Netherlands and especially the Port of Rotterdam changed forever. In 2012 her Majesty Queen Beatrix officially released 2,000 hectares of new, man-made land to facilitate the further growth of the port activities and the economy of the Rotterdam-Rijnmond region. The Port of Rotterdam had entered a new phase to be prepared for the future.



## 2. THE HISTORY

The first written reference to the Port of Rotterdam was in 1283 when a tract of reclaimed land was created at the mouth of the Rotte River as a fishing village. It was chartered in 1328, and in 1340, William IV of Holland gave the town permission to build a canal to the Schie. When this canal was finished in 1360, the Port of Rotterdam soon became a major seaport for the region. About 2000 people lived there at the time. The new canal gave the Port of Rotterdam access to larger cities in the North (Delft, Gouda, Leiden), and it quickly became an important centre for the transshipment of goods between England and Germany. When the sea route to the Indies was discovered in the 17th Century, Dutch commerce and shipping boomed. Rotterdam became one of the six Dutch East India Company's (VOC) centres in The Netherlands, and the Port of Rotterdam expanded further. It became the second most important port in the country after Amsterdam.

Around the year 1840 the Industrial Revolution took off in Europe. At that time, in Germany industrial production was growing very rapidly, and there was an increasing demand for resources. But Rotterdam faced a problem, as the Meuse-Rhine channels were constantly silting over. It was in 1872 that Rotterdam completed the Nieuwe Waterweg ('New Waterway'), a wide and stable entrance to the city for sea-going steamships. Between 1900 and 1940 Rotterdam greatly benefitted from the economic growth in Germany, because of the increasing demand for coal and iron ore, its excellent accessibility for vessels, and its well-functioning connection with the German hinterland (the Ruhr district) via the river Rhine.

In the space of 30 years the population increased from 150,000 to 500.000 inhabitants. New modern buildings appeared downtown, and working class areas were built on the South bank of the river. This rapid development confirmed the Port of Rotterdam's success.



Figure 1: A View of the Harbour, Rotterdam 1908

### 3. THE ROLE OF THE FERTILIZER INDUSTRY IN THE PORT OF ROTTERDAM

It was in that period (around 1910) that along the Nieuwe Waterweg new investments were made in the fertilizer industry. Two new factories were constructed along the banks of the Nieuwe Waterweg: the NV Superfosfaatfabriek Holland (1910) - in 1948 renamed as Albatros - in Pernis, and the ENCK (1916) owned by a cooperative of farmers who built its plant in Vlaardingen on the opposite bank of the river. The ENCK in particular, became very successful. Already before World War-II, ENCK, later renamed as Windmill, exported its products to more than 40 countries all over the world. The production was based on the 'classic' ingredients N, P and K (NPK). The success became even greater when the company became able to produce Granumix (1935), which was much easier to apply by the farmers. A third producer called La Compagnie Néerlandaise de l'Azôte was based in Sluiskil (where production started in 1920). These three companies dominated the fertilizer market from 1920 - 1950.

In 1940, Nazi Germany invaded the Netherlands by bombing the Port of Rotterdam. The city's heart and about a third of the port facilities were destroyed. Around 800 people were killed, and 80,000 people became homeless. All industrial activities, including the fertilizer industry, had to stop as the river was blocked with wrecks and mines.



In the decades following World War II, the Port of Rotterdam was rebuilt. Modern architectural styles supplanted the old traditional buildings that had been destroyed, and the Port of Rotterdam gained a completely new and contemporary skyline. Out of tragedy, the Port of Rotterdam was at the forefront of modern city planning. For instance, the Lijnbaan Shopping Centre became a prototype for pedestrian-only shopping centres in Europe and America.

The fertilizer industry also recovered from World War II. However, the competition in the sector became fierce as new producers entered the market. Windmill had a strong position in this competitive market. In 1965 it employed around 1400 people, and economically did very well, not only in terms of its production but also because of trade activities related to fertilizer. But, at the end of the 1950s, the tide turned. The fertilizer industry in the Rotterdam region was involved in some serious incidents where public safety was at stake, and the sector was accused of major air and (later) water pollution. According to the public opinion, the industry was not able to anticipate these kind of criticisms, but, as a result of these pressures in the 1960s, the Dutch industry transformed itself to one of the most modern and efficient fertilizer producers of the world.

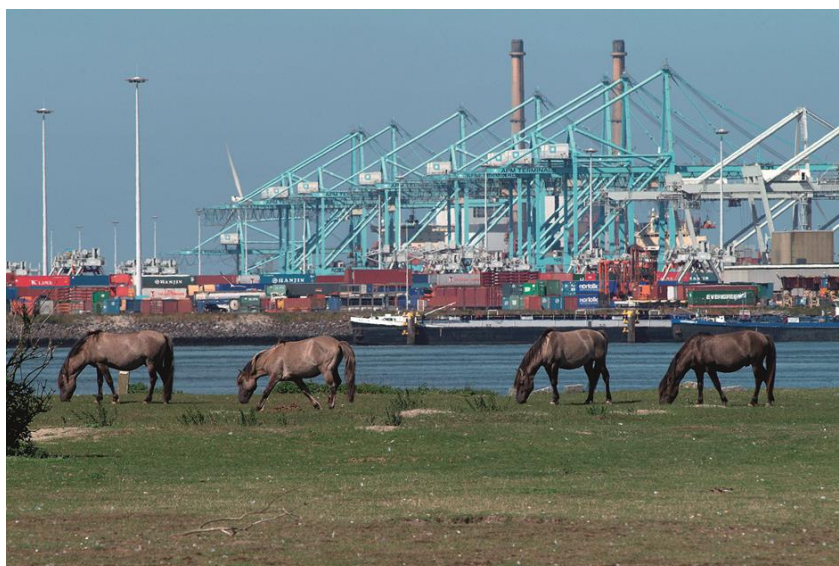


At present the role of the fertilizer industry is limited in the Port of Rotterdam. The Albatros factory closed in the 1999, and nowadays the Windmill fertilizer business is part of YARA, which specialises in liquid and solid fertilizers. Another part of Windmill became ALIPHOS (owned by Tessenderlo Chemicals), specialising in feed phosphates. A part of their products is still sold under the old brand of Windmill. Together they currently employ around 140 employees in Vlaardingen, and today the largest fertilizer production capacity in the Netherlands can be found in Sluiskil. In 2011, Yara opened their new Urea 7 plant. The expansion added capacity amounts to approximately 500,000 tons of urea equivalents. As with many European fertilizer complexes, the development of the site was linked to the availability of coke oven gas from a neighbouring coke factory, nowadays the European gas grid enables flexibility in sourcing natural gas from the various parties which sell gas through the grid.

#### 4. TO CONCLUDE

Global dynamics means that flexibility is becoming key for future prospects in many industrial sectors. For the fertilizer industry important factors are: the population growth worldwide, the need for food production, and the security of supply and price of energy, but also new upcoming phenomena such as climate change, etc. These are all relevant and have to be taken into account.

Ports are the locations where trade, logistics and production converge. The Port of Rotterdam has the ambition to be a competitive, and at the same time, the most sustainable port in the world. In this way, we can strengthen Dutch and European competitive power and make Rotterdam-Rijnmond a region where people like to live, work, and recreate.



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