

Energy transition, Suez crisis and transnational transport The case of the Rotterdam-Rhine pipeline, 1955-1960

Marten Boon

Erasmus School of History, Culture and Communication

m.boon@eshcc.eur.nl

Abstract

Energy transition from coal to mineral oil and the changing structure of mineral oil consumption in Western Europe radically changed the pattern of oil refining and transportation in the 1950s. In the late 1950s and early 1960s, new large-scale refineries were constructed to supply the growing demand, predominantly in the West German Rhine-Ruhr area. The subsequent growth of global crude oil flows, fostered an enormous increase in economies of scale in transportation. Crude oil tankers tripled in size in the course of a few years and in Europe pipelines were introduced to supply the new refineries with crude oil. The increasing economies of scale that were utilised by the industry necessitated an adaptive response from the Rotterdam port. As pipelines typically were competitive at distances of 500 km and longer, suddenly the Rhine-Ruhr area became a contested hinterland. Rotterdam had always had a strong position in this area but now plans for pipelines to the Ruhr ranging from Wilhelmshaven to Marseille emerged. A contest for pipelines unfolded in which Rotterdam initially lost, but eventually won its pipeline connection to the Rhine-Ruhr area. The Port Authority of the Rotterdam port was the designated agent to accommodate the port to these rapid changes. This paper raises the question how and why the Rotterdam Port Authority succeeded in securing a pipeline connection to its traditional hinterland between 1950 and 1960. However, in the midst of this episode, the Suez crisis erupted. In the literature, the Suez crisis was given a prominent place in explaining the success of the Rotterdam port in securing a pipeline connection to the Rhine-Ruhr hinterland. This paper aims to reassess this significant role of the Suez crisis by presenting new evidence that questions the significance of the Suez crisis in the short run.

Introduction

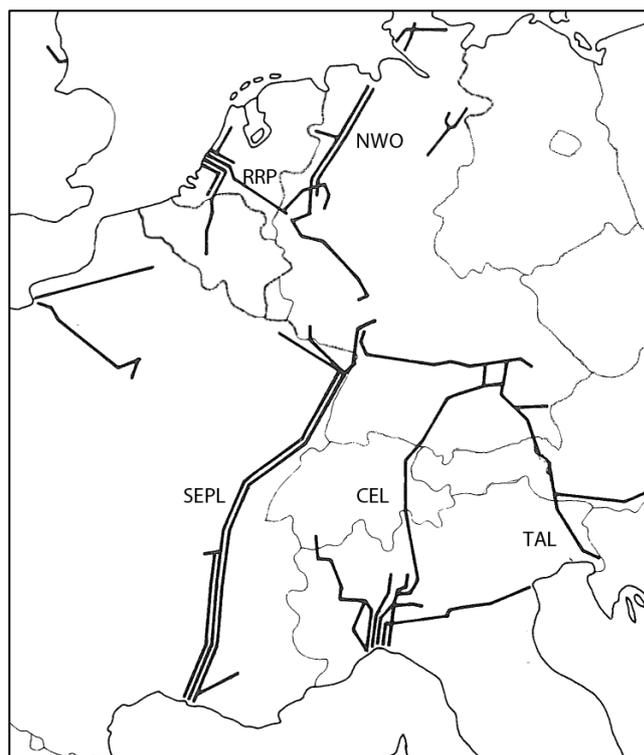
In January 2011, the International Energy Agency concluded in its *Oil Market Report* that “[t]he European refining industry is continuing to see major changes due to structurally declining demand, stark competition for export markets from new capacity in emerging countries and resulting poor margins”.¹ Related to the depressed situation in the European oil refining sector, Royal Dutch/Shell group reconsidered its manufacturing strategy in Europe in the past few years. Over the course of the twentieth century, the Group had invested in several refinery locations across the European continent and in Great Britain. Several of these consisted of relatively small-scale operations. With the large investments in refinery operations being undertaken by oil producing countries and in the Eastern Hemisphere, the threat of overcapacity loomed large for European refineries. To counter that threat and to keep

¹ IEA, *Oil Market Report*, 18 January 2011, 51.

manufacturing in Europe profitable, Shell decided to divest several of its smaller operations and to concentrate on those large-scale operations connected to the major supply routes of crude oil (major ports, crude oil pipelines), for instance the Rotterdam – Pernis refinery in the Netherlands and the Rhineland refineries near Cologne in Germany.² The connections of these refineries to large scale and efficient transport routes safeguarded to some extent the profitability of their operations. The current retreat of Royal Dutch/Shell on the continent thus focused on the oil transportation infrastructure of crude oil and products pipelines that was developed in the 1950s and 1960s and is testament to the enduring strengths of the regional cluster of oil and petrochemical activities that centre on the Rotterdam-Antwerp-Rhine-Ruhr region, also referred to as *the* petrochemical quadrangle of Western Europe.³

During the 1950s and 1960s, crude oil pipelines were constructed from various landing ports in Western Europe to refineries at inland locations (figure 1).

Figure 1 Crude oil pipelines in Western Europe, 1980



The five major crude oil pipelines consisted of the Nord-West Oelleitung (NWO) from Wilhelmshaven to the Ruhr area (1958), the Rotterdam-Rhine pipeline (RRP) from Rotterdam to the Ruhr area (1960), the Southern European pipeline (SEPL) from Marseille to northeast France, southern Germany and Switzerland (1963), the Central European pipeline (CEL) from Genoa to Switzerland and southern Germany (1965) and the Trans-Alpine pipeline (TAL) from Trieste to southern Germany (1967).

Source: Adapted from Molle and Wever, *Oil Refineries*, 53

² ‘Shell to divest 15 percent of its refining assets’, *Reuters*, 15 September 2009, <http://www.reuters.com/article/2009/09/15/us-shell-refining-idUSTRE58E5I720090915?pageNumber=2&virtualBrandChannel=0&sp=true>, accessed on 21 June 2011.

³ Molle & Wever, *Oil Refineries*, 90.

The initial development of these crude oil pipelines was very much connected to the energy transition from coal to oil that evolved in Western Europe in the 1950s and 1960s. Shortly after the Second World War, the energy crisis caused by the slow recovery of coal production necessitated increasing imports of mineral oil to provide the energy needed for reconstruction and economic recovery. To keep foreign currency expenses at a minimum, a program for the expansion of crude oil refining capabilities in Europe was undertaken in the framework of the Marshall plan and under the auspices of the OEEC.⁴ The economic reconstruction and subsequent boom of the late 1950s and 1960s caused demand for energy to rise. As coal could no longer supply the rising demand, oil became increasingly important in the energy balance of Western Europe. Rising energy demand and energy transition caused further growth of oil refining operations in Western Europe.⁵

The rising share of oil in energy consumption entailed a shift from the pre-war pattern of refining crude oil at the source to a pattern of refining near markets. The typical pattern of this shift from refining in producer countries to consumer countries consisted of a first stage in which refining locations were developed in landing ports for crude oil. The refineries built in the context of the Marshall plan were typically of this type. In the second stage, refinery capacity tended to shift inland, as demand for mineral oil products increased in inland markets, creating a viable business case for investments in refinery capacity at inland locations.⁶

This process caused a number of changes to the transportation pattern of crude oil and oil products. Firstly, with the post-war shift toward refining in consumer countries, the bulk of overseas shipping became to consist of crude oil. As the economic value of crude oil contains much less added value than refined products, incentives for utilising potential economies of scale in transport were created. The upward development in tanker size that started in the 1950s was a reflection thereof.⁷ Secondly, with the shifting of refinery capacity inland, demand for crude oil transportation from seaports to inland locations created a similar incentive for inland transportation to utilise potential economies of scale, i.e. pipelines. Although the initial capital investment in pipelines was high, their ability to continuously

⁴ OEEC, *First report on co-ordination of oil refinery expansion in the OEEC countries*, October 1949.

⁵ Molle & Wever, 'Oil Refineries and Petrochemical Industries in Europe', 422-223.

⁶ Molle & Wever, 'Oil Refineries and Petrochemical Industries in Europe', 424-425; Waller and Swain, 'Changing Pattern of Oil Transportation', 146-148.

⁷ Hubbard, *The Economics of Transporting Oil*, 2-3

transport vast quantities of oil at low transportation costs made pipelines the super tanker equivalent for overland transport.⁸

In addition to the rather slow process of shifting patterns in refining and transportation of crude oil, the seizure of the Suez Canal by Egyptian forces on 26 July 1956 and the subsequent Suez crisis that evolved between July 1956 and May 1957 caused a sudden shock to it. In the 1950s, the Suez Canal had developed into the primary shipping route for Europe's supply of Middle Eastern crude oil. Since the Second World War the Middle East had become Europe's main oil supplier. In 1955, 89% of Europe's crude oil requirements were supplied from Middle Eastern oil fields, which amounted to around 98 million tons (Mt).⁹ Almost two thirds or 61 Mt reached Europe through the Suez Canal.¹⁰ Together with the Iraq Petroleum Company and Trans Arabian Pipelines (which transported around 38% of the Middle Eastern crude oil to Europe), the Suez Canal had become "the critical link in the post-war structure of the international oil industry".¹¹ Although the size of crude oil tankers was already increasing beyond the capacity of the Canal before the eruption of the Suez crisis¹², it did cause both oil companies and governments to realise that the world's tanker fleet needed to scale up in order to create more flexibility in the transportation of crude oil across the globe. The rationale was that only larger tankers could provide an economical alternative to the Suez Canal: around the Cape of Good Hope. Hence, the Suez crisis fed into the process of increasing scale in crude oil transportation, effectively speeding it up.¹³

In this context, the Rotterdam port was faced with the challenge to accommodate to these developments. By the mid 1950s it had developed into a regional transportation and processing hub for crude oil and refined products of importance. In 1947 Shell decided to upgrade its Pernis facility into a regional balancing refinery, taking in a large amount of the newly available supply of Middle Eastern crude oil.¹⁴ Simultaneously, the Rotterdam port had developed into a major transshipment port for crude oil and refined products destined for the West German and Swiss parts of the Rhine basin. In 1954, 25% of West Germany's total crude oil imports landed in Rotterdam.¹⁵ In 1955, over 70% of the crude oil and oil products shipped over the Rhine to West Germany and Switzerland originated in Rotterdam.¹⁶

⁸ Hubbard, *The Economics of Transporting Oil*, 27.

⁹ Lubell, *Middle East oil crises*, 11.

¹⁰ 'Impact of Suez on Europe's Oil', *World Petroleum*, 58.

¹¹ Yergin, *The Prize*, 480.

¹² Howarth and Jonker, *Powering the Hydrocarbon Revolution*, 282.

¹³ Yergin, *The Prize*, 496-497; OEEC, *Europe's need for oil*, 44-45.

¹⁴ *Ibid.*, 258-262.

¹⁵ Vollrath, *Die Mineralölwirtschaft in die Bundesrepublik*, 93; 99.

¹⁶ CBS (Central Bureau of Statistics), *Statistics of international inland navigation 1955*, 56-57.

By 1955, it became clear that the growth of oil consumption in West Germany developed at a pace that necessitated new refinery capacity in new locations close to the growing markets, i.e. the urban and industrial centres of the Rhine-Ruhr area and in Southern Germany. The increasing amounts of crude oil that needed to be shipped to these new locations, forced oil companies to consider the use of pipelines. In the summer of 1955, the Rotterdam Port Authority was notified of pipeline plans being developed by a consortium of large multinational oil companies. Rotterdam and Wilhelmshaven were being studied as potential starting points for a crude oil pipeline to the Rhine-Ruhr area. A year later, rumours emerged in Rotterdam about a second plan opting for a trans-European crude oil pipeline network, which would supply the entire North Western European crude oil requirements from Marseille, including those in the Rhine-Ruhr area and the Rotterdam port. Of these potential starting points for crude oil pipelines to the Rhine-Ruhr area, Rotterdam was geographically closest. In fact, the Rhine-Ruhr area was Rotterdam's primary hinterland and the basis for its initial growth in the 1870s.¹⁷

The fact that the primary hinterland of the Rotterdam port was now suddenly contested, posed an immediate threat to the Rotterdam port. In the short term, losing a share of the crude oil inflow destined for the Rhine-Ruhr area would mean losing a significant amount of revenue from docking ships for the Rotterdam Port Authority. In the long term, it could threaten the policy of attracting oil industry to the port. Since the 1930s, the Port Authority, which was created in 1932 as the communal agency for port development, had developed the policy to industrialise the port in order to make it less dependent on the transshipment of transit goods. The world wars and the economic crisis of the 1930s had fostered a belief in Rotterdam that industrialisation of the port was to be the panacea for the port's sensitivity to external shocks.¹⁸ The upgrading of the Shell refinery at Rotterdam-Pernis in 1947 and the establishment of the Caltex refinery just before the Second World War were the first successes for the Port Authority on the path to industrialisation.¹⁹ The increasing scale of oil transportation that followed the shift in the pattern of oil refining posed a challenge to the Rotterdam port to follow through if it wanted to uphold its policy of attracting oil industry to the port. The threat of losing such an important and large-scale hinterland connection as a crude oil pipeline, posed an additional challenge because it would testify that the port wasn't able to adapt to the needs of the oil industry, i.e. creating deep-

¹⁷ Klemann and Wielenga, 'Die Niederlande und Deutschland, oder verschwindet die nationale Ökonomie?', 11-14; Laspeyres, *Rotterdam und das Ruhrgebiet*, 195.

¹⁸ Van Walsum, *Rotterdam-Europoort*, 12-13.

¹⁹ De Goey, *Ruimte voor industrie*, 76.

water facilities to accommodate the increasingly larger crude oil tankers that would be needed to feed a pipeline. Hence, in the long run, losing the pipeline connection to the Rhine-Ruhr area to another port would deal a blow to the goal of industrialisation. Between the summer of 1955 and the summer of 1957 a contest for pipelines to the Ruhr unfolded in which Rotterdam initially lost out to Wilhelmshaven in 1956 but then secured its own pipeline to the Ruhr in 1957.

The Port Authority was the designated agent to develop plans for the adaptation of the Rotterdam port to the increasing scale of crude oil transportation. It seemed therefore natural to start with questioning the role of the Port Authority in this episode. However, the Port Authority was a government agency, which needed approval from local and national government for its plans. In addition, its plans needed to correspond and connect to the needs and interests of the business community, in this case specifically the multinational oil companies. Moreover, as the crude oil pipelines in the mid-1950s were typically private ventures, the Port Authority was completely dependent on the locational considerations of the oil companies involved. All it could do was try to adapt quickly and efficiently to the industry's needs. It is within this context that the central research question was raised: how and why did the Port Authority of the Rotterdam port succeed in securing continuity for its hinterland connections in the Rhine basin for the transportation of crude oil between 1955 and 1960?

However, apart from the question of agency with regard to the Port Authority, the question of external shocks also needed to be addressed – in this case the Suez crisis. In his thorough study on the industrialisation of the Rotterdam port, Ferry de Goey suggested that the Suez crisis gave Rotterdam a direct and decisive advantage over Mediterranean ports in securing a crude oil pipeline to the Rhine-Ruhr area in the 1956-1957 timeframe.²⁰ The rationale was that the blockade of the Suez Canal and IPC pipelines and the subsequent rerouting of crude oil supplies around the Cape of Good Hope, made Marseille less advantageous as a crude oil landing port for the supply to North Western European, which in turn affected the location choice of a consortium led by Shell for Rotterdam in April 1957. Although this explanation for the position of the Rotterdam port vis-a-vis the port of Marseille in this particular period seemed plausible, this paper presents new evidence that contradicts the allegedly important role of the Suez crisis in the contest for pipelines. Consequently, this

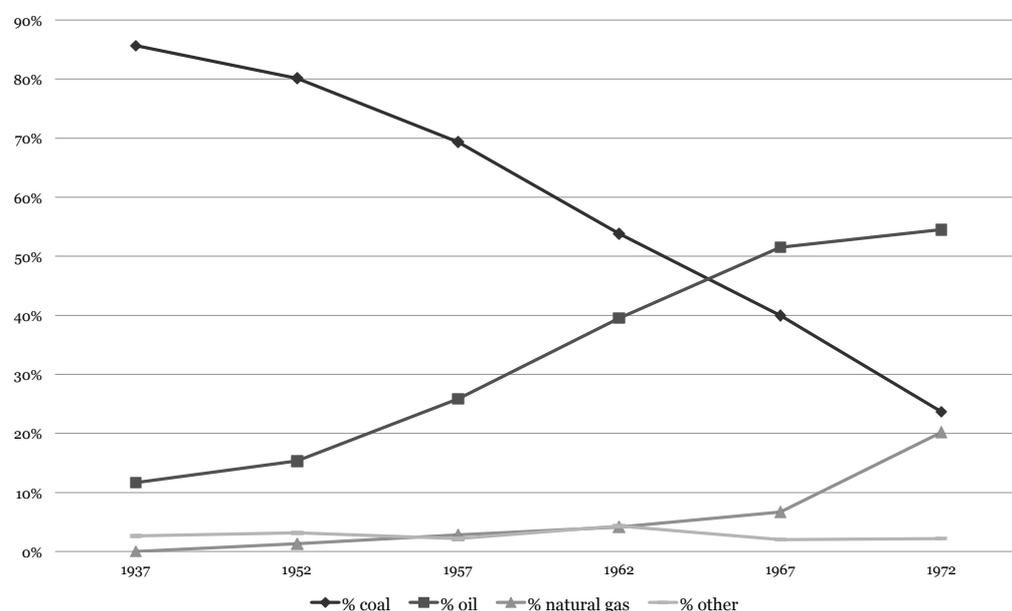
²⁰ De Goey, *Ruimte voor industrie*, 88.

paper also aims to reassess the short-run effects of the Suez crisis on Rotterdam's chances of obtaining a crude oil pipeline between 1955 and 1960.

Energy transition: changing the pattern of oil processing and distribution

Mineral oil emerged in Europe only after the Second World War as a major energy source. In 1937, coal made up 85% of the energy consumption in Western Europe. In 1972, the picture had dramatically changed, as coal made up only 24% of energy use. In that period oil consumption increased from 12% to 55% of the energy balance, in addition to 20% natural gas consumption (figure 2).

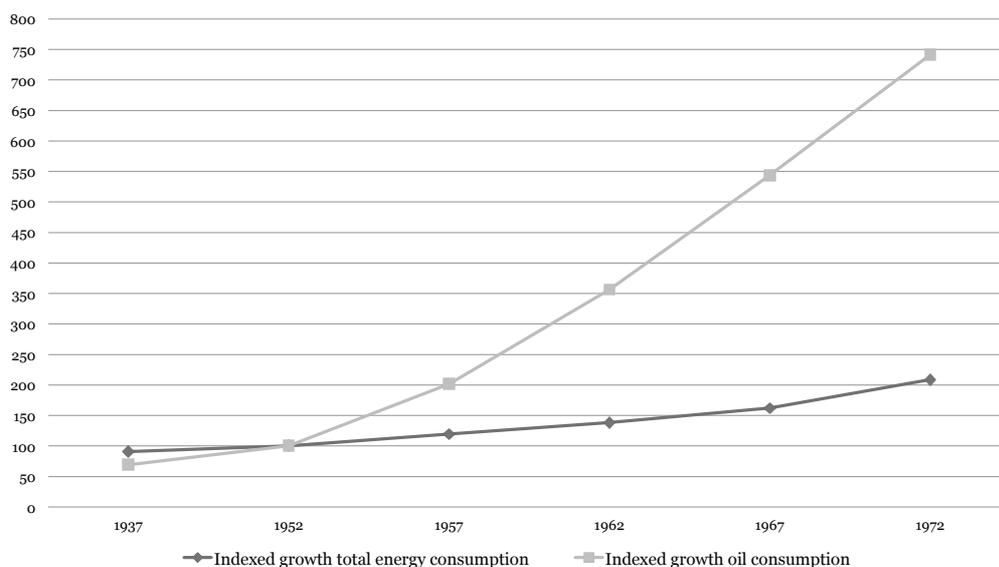
Figure 2 Energy balance of Western Europe, 1937-1972



Source: Odell, *Oil and World Power*, 120-121. Own calculations.

The high economic growth of the 1950s and 1960s in Western Europe caused growing energy consumption. Combined with the process of energy transition, even higher growth of mineral oil consumption occurred (see figure 3). Between 1952 and 1972, at the eve of the first oil crisis, total energy consumption doubled, while consumption of mineral oil increased more than sevenfold over the same period.

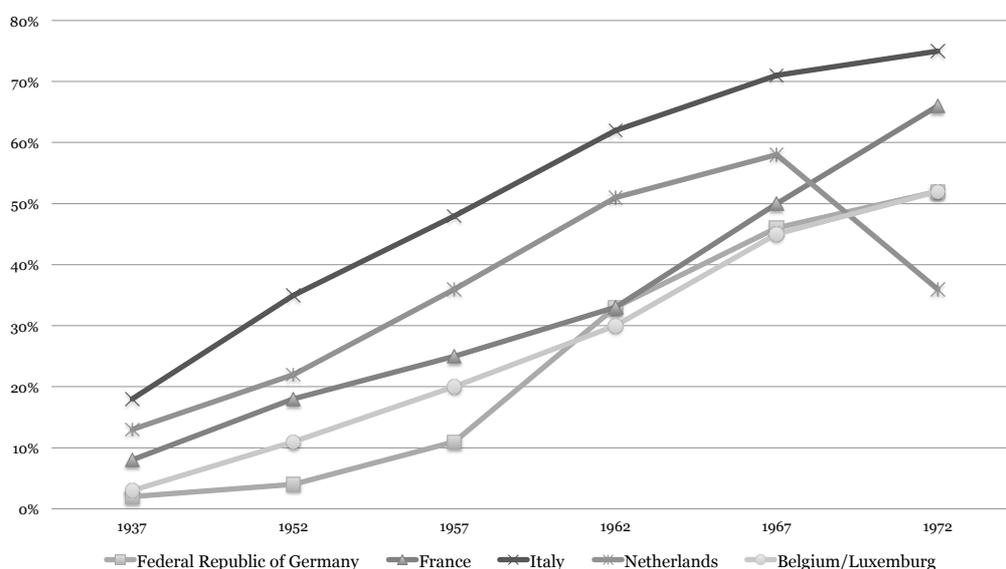
Figure 3 Indexed growth of energy consumption in Western Europe, 1937-1972



Source: Odell, *Oil and World Power*, 120-121. Own calculations.

West Germany, having relied particularly heavy on coal in the Nazi period was slow to make the transition away from coal to other energy sources. All through the 1950s, West Germany had a lower share of mineral oil consumption in the total energy balance in comparison to other Western European nations (figure 4).

Figure 4 Share of mineral oil in energy balance of continental Western European countries



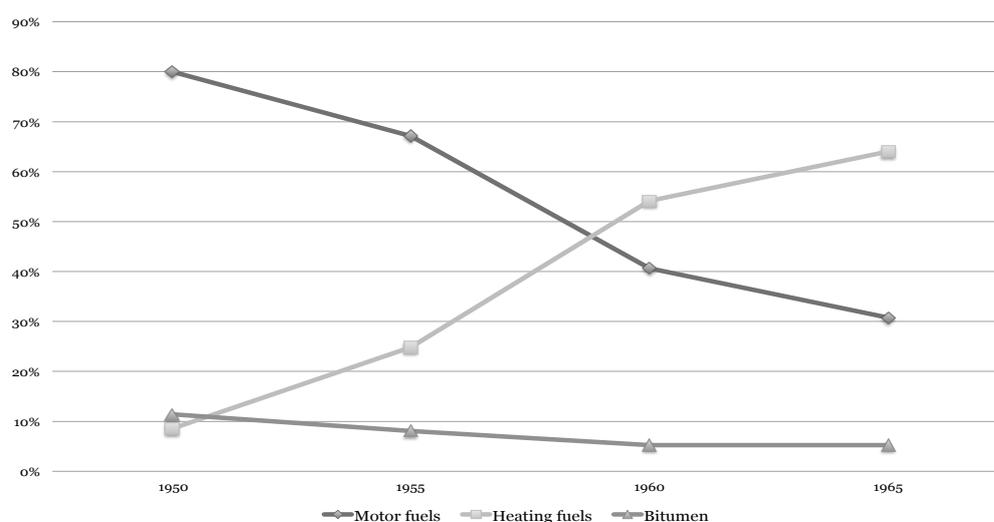
Source: Odell, *Oil and World Power*, 120-121. Own calculations.

Another peculiarity of the West German oil consumption pattern was the low demand for fuel oil in the 1950s. Heating and industrial underfiring had been traditionally done with coal and

that pattern remained at first. This implied that for the first decade after the war, West German mineral oil consumption consisted mainly of motor fuels. In 1950, consumption comprised of 80% motor fuels and only 9% fuel oil.²¹

When reviewing the refinery capacity build-up programmes in Western Europe in 1949, the Oil Committee of the OEEC stressed the importance of facilities that allowed for a refining setup specifically designed for this particular consumption pattern, i.e. allowing a high number of cracking facilities in order to reform the heavier fractions into motor fuels.²² Shell, for instance relied for its motor fuel production in the Rhine-Ruhr area on a former coal hydrogenation plant in Wesseling near Cologne – operated by Union Rheinische Braunkohlen Kraftstoff Wesseling GmbH – because its process design was specifically adapted to enhance motor fuel production from brown coal or heavy oil residues. However, as demand for heating fuel rose from only 9% in 1950 to 25% in 1955 and 54% in 1960, oil companies in West Germany needed to revise their refining setups (figure 5).

Figure 5 Composition of oil products consumption in West Germany, 1950-1965



Source: Minalölwirtschaftsverband, *Daten zum Mineralölverbrauch*, <http://mwv.de/index.php/daten/statistikeninfoportal>, accessed 14 May 2009. Own calculations.

In 1955, Shell announced to its captive fleet of inland tank ships on the Rhine that it was commencing production of heating fuel at Wesseling and that it therefore required extra imports of motor fuels ex Rotterdam.²³ With overall consumption of mineral oil in West

²¹ Minalölwirtschaftsverband, *Daten zum Mineralölverbrauch*, <http://mwv.de/index.php/daten/statistikeninfoportal>, accessed 14 May 2009. Own calculations.

²² NL-HaNA, BuZa / Code Archief 55-64, 2.05.117, inv.nr. 23240, First report Oil Committee, OEEC (C(49)147), October 1949, 83-84

²³ GAR, VOA, 1260, inv. nr. 240, Letter from Deutsche Shell to NV Exploitatie Mij. Intras, regarding prognosis demand for transportation capacity on the Rhine, 22 December 1955, 2.

Germany rising, this was a tell tale sign. The shift in the pattern of consumption promised to result in a large and uneconomical mismatch between consumption and supply. All major oil companies with a share in the German market therefore scrambled to plan new refineries in West Germany, foremost in the ballooning market of the Rhine-Ruhr area with its large concentration of inhabitants and industrial activity. Energy transition and the changing pattern of oil consumption in West Germany were especially consequential for the Rhine-Ruhr area in that period. Of the 10,7 million tons of heating fuel consumed by industry in the BRD in 1961, 38% alone was consumed in North Rhine Westphalia.²⁴ Consequentially, between 1950 and 1960, 63% of new refinery capacity in West Germany, materialised in North Rhine Westphalia. Total primary refinery capacity in West Germany increased eightfold during this period, from 5 Mt/y to over 40 Mt/y.²⁵

Table 1 Planned refinery expansions in the Rhine-Ruhr area, 1959-1968

Company	Expansion	On stream	Added capacity (Mt/y)
Shell (Godorf)	1 st stage	1960	4.0
	2 nd stage	1963	3.0
Esso (Cologne)	1 st stage	1959	3.0
	2 nd stage	1961	3.0
Petrofina (Duisburg)	1 st stage	1959	1.0
	2 nd stage	1961	2.0
BP (Dinslaken)	1 st stage	1960	3.0
	2 nd stage	1963	3.0
Scholven AG (Gelsenkirchen) (present cap 1 Mt/y)	extension	1959	1.0
Gelsenberg Benzin AG (Gelsenkirchen) (present cap 3 Mt/y)	1 st stage extension	1961	2.0
	2 nd stage extension	1963	1.0
	3 rd stage extension	1968	2.0
Total announced added capacity			29.0

Source: SHA, Archive of Manufacturing department (MF), inv. no. 48, file: Installations / Germany / Godorf: Budget Revision, Return no. 513, 15 March 1957, 2.

At the level of individual oil companies, the consequences of the changing energy consumption patterns were large. Deutsche Shell, for instance, estimated its required refinery capacity for 1961 at 5 Mt/y, of which only 2,6 Mt/y could then be covered from available refinery capacity. The projected shortfall of 2,4 Mt/y in 1961 was expected to increase to 4,7 Mt/y in 1964. Deutsche Shell therefore needed a new refinery in West Germany, and it

²⁴ Streicher, *Raffineriestandorte*, 22.

²⁵ Minalölwirtschaftsverband, *Daten zu Kapazitäten*, <http://mwv.de/index.php/daten/statistikeninfoportal>, accessed 14 May 2009. Own calculations.

needed it rapidly. The competitors were confronted with similar shortfalls in capacity in the Rhine-Ruhr area and were planning rapid expansions (table 1). Deutsche Shell chose Godorf near Cologne as the site of the new refinery. This choice was both informed by the size of the regional market and by functional input-output relations to its petrochemical joint venture with BASF at nearby Wesseling.²⁶

Considering transport routes

In general, transportation costs made up around 30% of the oil industry's total operating costs of getting oil supplies to the European markets (excluding taxes) in the 1950s. Hence, it was the single largest cost component in the value chain.²⁷ As long as individual products were shipped to individual markets from large refineries located at the source, transport operations remained fairly small scale, in the sense that opportunities for scale economies were limited. Typically, 10-12.000 ton tankers laden with for instance gasoline would call at several ports in Europe, dependent on the particular demand structure of each country. When, however, in the post-war years the consumption pattern changed significantly and crude oil was increasingly shipped to consumer refineries in Europe, major opportunities for scale economies in transportation arose. Instead of calling at several ports to supply a single type of product, now, larger sized tankers would call at one port to supply the local refinery with crude. In short, the incentives for scale economies induced the oil companies to limit the number of entry ports for the European market.²⁸

Further distribution to inland markets was performed mainly by barge, rail tank car and in the 1950s and 1960s increasingly by road tank cars. For the transportation of products and crude in the Rhine basin, barge transportation was dominant. However, with the planning for inland refineries from the mid-1950s onwards, these transportation modes came under pressure. The existing modes could only deliver crude in batches. Although push barges and around the clock sailing schedules helped solve the problem partly, it was much more economical for refinery operations to have continuous supply. And indeed, this general shift in the pattern of oil transportation could be observed in the case of Shell's planning for its new Rhineland refinery. In 1957, when discussing plans for the new refinery, Shell concludes that feeding the Godorf refinery would no longer be possible by the conventional manner of

²⁶ SHA, MF / 48/ Godorf: Budget Revision, Return no. 513, 15 March 1957, 2.

²⁷ Hubbard, *The Economics of Transporting Oil*, xii

²⁸ *Ibid.*, 2-3

barge transport.²⁹ The shift in the pattern of oil transportation that occurred in this period, is clearly illustrated in figure 5. With overall deliveries of Shell's Dutch manufacturing company (Shell Netherlands Refinery) doubling from 14,7 Mt to 29 Mt between 1957 and 1962, the share of barge and tanker delivery declined in favour of pipeline deliveries.³⁰

The Esso plan

On 31 August 1955 *Die Welt* published a small article entitled 'Pipeline nach Wilhelmshaven oder Rotterdam'. The article mentioned the existence of a group of oil companies planning a pipeline connection to a new refinery in the Ruhr area. The majority of the new pipeline company would comprise of several of the large oil companies with overseas capital. Starting point would be either Wilhelmshaven or Rotterdam. According to the article the city council of Wilhelmshaven had already promised a tract of land in the port to the size of 5 square kilometres for the project and the *Landesregierung* of Niedersachsen also pledged its support. Wilhelmshaven pointed out that its port had better tidal conditions than Rotterdam.³¹

The article in *Die Welt* referred to a consortium of multinational and German oil companies. With Esso in the lead, the consortium was gathering information on the possibilities for a crude oil pipeline to the new and expanded refineries in the Rhine-Ruhr area. Around the time of the publication in *Die Welt*, Deutsche Esso had published a report on its initial findings. It stated that the consortium was considering Wilhelmshaven and Rotterdam as potential starting points for the pipeline, which Esso projected at an initial throughput capacity of 8 Mt/y. Table 2 presents the partners in the project and their share in the throughput.

²⁹ SHA, MF / 48/ Godorf: Budget Revision, Return no. 513, 15 March 1957, 3.

³⁰ SHA, inv. no. 976, file no. 114, Statistical data SNR NV, 1957-1962, 3.

³¹ 'Pipeline nach Wilhelmshaven oder Rotterdam', *Die Welt*, 31 August 1955.

Table 2 Partners in the pipeline consortium (in million tons per year throughput)

Partners	Throughput (Mt/y)
BP / Scholven AG	1,50
Gelsenberg Benzin	1,50
Ruhröl	0,15
Ruhrchemie	0,35
Shell / Wesseling GmbH	1,50
Esso	3,00
Total initial pipeline capacity	8,00

Source: GAR, AHB, 589.01, inv. nr. 70, Letter from Koomans (director Port Authority) to Mayor and Aldermen of Rotterdam city council, 30 September 1955, p. 2.

The German partners Wesseling, Scholven and Gelsenberg had made long-term processing deals with Shell, BP and Mobil respectively in the course of the 1940s and early 1950s.³² As these multinational partners planned to increase their refining capacities, so did the German partners, hence, their participation in the Esso-plan.

Consequences for hinterland connections

In general, the shift in processing locations from source refineries to coastal refineries and the subsequent shift in transportation patterns has had significant consequences for oil landing ports in Europe. The tendency toward larger sized tankers carrying larger single loads put pressure on ports to enhance deep sea access to the port and to dredge old docks and construct new ones to allow for larger tankers to enter. The second phase of the shift of oil processing locations involved the above-mentioned construction of inland or market refineries. Now not only port facilities were at stake, but also hinterland transport connections came under pressure. And in the second half of the 1950s, the pace picked up.

As the projections by Deutsche Shell showed, the shortfall in refinery capacity in Germany was expected to be critical within five years, so the crude oil feed to the expanded and newly constructed refineries needed to be up and running by 1959, 1960 at the latest. To the oil companies all possibilities could be considered. As the article in *Die Welt* mentioned, pipelines from either Rotterdam or Wilhelmshaven were considered, but even larger scale projects were undertaken, for instance looking at a trans-European network of pipelines to be supplied from the Mediterranean (more on this below).

For the Rotterdam port such plans could hold significant consequences. In 1954, a year before the general public was introduced to the pipeline plans for the new Rhine-Ruhr

³² Karlsch & Stokes, *Faktor Öl*, 292.

refineries, West Germany imported 5,9 Mt of crude oil. Almost 95% of these imports landed at three ports: Hamburg, Bremen and Rotterdam. With 1,5 Mt or 25% of West German imports, Rotterdam was the second most important landing port for crude oil for West Germany.³³ The imported crude was shipped from Rotterdam by barge over the Rhine to the refineries in the Rhine-Ruhr area. Barges now faced competition from pipelines. Transportation costs for pipelines vary most with the capacity of the line, less with distance. In 1954 and 1955, the Rotterdam port transhipped 1,5 to 2 million tons of crude oil to West Germany annually. A pipeline for the transportation of crude oil with a capacity of 2 Mt/y and a length of 250 kilometres – the distance between Rotterdam and Cologne – would be more expensive than shipping the crude by river barge.³⁴ However, the new inland refineries were projected to have a combined first stage capacity of 8 Mt/y.³⁵ At annual capacities of 4 Mt or more, pipelines would be much cheaper than river barges. As distance was less of an issue than capacity when considering pipeline trajectories, suddenly the choice of landing ports for crude oil was also questioned. Pipelines for crude would not only push out these barge transports of crude oil – as they were quite cumbersome and costly anyway; pipelines would also decisively establish long-term connections between ports and their hinterlands. Not being able to attract companies to establish facilities for a pipeline in the port of Rotterdam would entail a direct loss of revenue and possibly an indirect loss of attractiveness as an industrial location in the future.

The director of the Port Authority, N. Th. Koomans, signalled this threat to the Rotterdam position as a crude oil gateway to the Rhine basin. In a letter to the city council, dated September 30th, 1955, Koomans outlined what a choice for Wilhelmshaven would entail for the Rotterdam port as oil transshipment port. Taking the projected initial capacity of the pipeline at 8 Mt/y, this would involve between 400 and 450 ship movements through the Rotterdam port annually, amounting to roughly 2 million Dutch guilders in port fees. Losing the current transit shipments of 1,5 to 2 Mt/y of crude to Wilhelmshaven could possibly be compensated by further expansion of Shell's Pernis refinery but losing the pipeline connection to Wilhelmshaven would seriously hamper the position of the Rotterdam port as an oil transshipment port, let alone costing a good deal of revenue.³⁶

³³ Vollrath, *Die Mineralölwirtschaft in die Bundesrepublik*, 93; 99.

³⁴ Hubbard, *The Economics of Transporting Oil*, 80-81.

³⁵ GAR, AHB, 589.01, inv. nr. 70, Letter from Koomans (director Port Authority) to Mayor and Aldermen of Rotterdam city council, 30 September 1955, 2.

³⁶ *Ibid.*, 2.

Adapting the Rotterdam port

Koomans based his figures on a report published by Esso AG. The same report contained, according to Koomans, a number of misrepresentations on the feasibility of a pipeline to the Ruhr from Rotterdam. Primary concerns were the extra costs that Esso expected to encounter for laying the pipeline across extensively exploited Dutch farmlands and the many water crossings. Esso also feared double taxation of the imported crude oil. In his letter of September 30th, 1955, Koomans urged the city council to contact the Ministries of Finance, Economic Affairs and Transportation and Water to probe them for solutions to Esso's concerns. As for providing space in the port for a pipeline terminal and docks, the Port Authority initially thought of the 3rd Petroleum dock in the Botlek area. This area was the first great post-war expansion of the Rotterdam port. Construction had finished in 1955 and the first tracts of land were let out. It was by no means full yet and the 3rd Petroleum dock seemed the logical site for a pipeline terminal. Soon, however, it became apparent that Esso envisioned the use of larger sized tankers than the Botlek docks could handle. Between summer 1955 and March 1956, the Port Authority quickly drew up alternative plans, comprising of dredging of the New Waterway to accommodate larger sized tankers, enlargement of the 3rd Petroleum dock and a completely new port to the west of the Botlek area, closer to sea. In March 1956, the Port Authority asked the city council to find national government approval for these plans.³⁷

In the mean time, help for the Wilhelmshaven plan was materialising from all levels of government in West Germany. Early support came from of the city council of Wilhelmshaven – pledging 500 ha of land in the Wilhelmshaven port – and the state government of Lower Saxony, the Federal government pledged DM 42 million for dredging of the docks in June 1956.³⁸ The Port Authority understood that it needed its good contacts with the Royal Dutch/Shell group to move things in their favour. By voice of H. Bloemgarten (director at Shell's Dutch operating company Bataafsche Petroleum Maatschappij), Shell completely supported the Rotterdam candidacy. However, Bloemgarten signalled that in order for the international oil companies to successfully operate on the German market, the Esso-led consortium needed to play to German sentiments. Although Wilhelmshaven was the commercially less attractive alternative, Esso was adamant to play these German sentiments. Shell therefore chose not to intervene because it didn't want to push Esso into a corner too

³⁷ De Goey, *Ruimte voor industrie*, 81-82.

³⁸ 'Pipeline nach Wilhelmshaven oder Rotterdam', *Die Welt*, 31 August 1955; 'Wer schlägt das Öl um?', *General-Anzeiger*, 8 June 1956.

much. Shell wanted to keep a good relationship with Esso and thought it too early to put pressure on Esso Germany to choose Rotterdam.³⁹ Moreover, Esso Germany operated a tanker fleet under German flag (Waried Tankschiff Reederei) and needed a German home port for it. The Port Authority was aware of these limitations to Rotterdam's bargaining position from a very early stage.⁴⁰

These constraints proved real. Notwithstanding the intensive work of the Port Authority to accommodate to the wishes of Esso Germany between May and July 1956, German experts kept venting their scepticism about the feasibility of the Port Authority's plans.⁴¹ In the German press, articles appeared, stressing the need for a speedy and pro-German decision.⁴² The pipeline seemed to be lost to Wilhelmshaven. However, in July 1956, BP, the second largest partner in the Esso-consortium, published a study stating that the capital investments for the Rotterdam-Ruhr trajectory would be lower, which, combined with the shorter sea route to Rotterdam, would cause transport costs for the Rotterdam-Ruhr line to be considerably lower than those for the Wilhelmshaven-Ruhr line.⁴³ The consortium was faltering. Shell, which already had expressed its backing for the Rotterdam port withdrew its financial participation in the plan.⁴⁴ Still, Esso did not subside. Whatever the exact reason, Esso seemed decidedly pro-Wilhelmshaven, even beyond clear economical reasoning. A special official for Rhine traffic, attached to the Dutch Embassy in Bonn, reported in early July that he had heard that Shell was pressured (not clear by whom) to support Esso's pro-Wilhelmshaven stance or else not receive permits to build its new refinery near Cologne.⁴⁵ It was clear that Esso was not going the budge. Finally, on 9 November 1956, Esso Germany announced its choice for Wilhelmshaven and in the same month the remaining consortium (including BP) incorporated the Nord West Oelleitungs-Gesellschaft.⁴⁶

Assistant-director of the Port Authority, F. Posthuma, later speculated that the choice for Wilhelmshaven was a compromise between Esso Germany and the German Federal Republic. If the state allowed oil to increasingly compete with coal, Esso and the other

³⁹ GAR, AHB, 589.01, inv. nr. 70, Internal memo PA on discussions with H. Bloemgarten of the Royal Dutch/Shell group on 15 October 1955.

⁴⁰ GAR, AHB, 589.01, inv. nr. 70, memo from Koomans to the city council meeting on 18 November 1955.

⁴¹ De Goey, *Ruimte voor industrie*, 88.

⁴² NL-HaNA, EZ / Centraal Archief, 2.06.087, inv.nr. 408, press service Min EA, 19 May 1956; press service Min EA, undated but probably early June 1956

⁴³ 'Wilhelmshaven oder Rotterdam? Erwägungen über des Ausgangspunkt einer Pipeline Nordsee-Ruhrgebiet', *Der Tagesspiegel*, 17 July 1956.

⁴⁴ 'Pipeline-Entscheidung auf den 18. Juli vertragt', *Wilhelmshavener Stadt-Rundschau*, 6 July 1956.

⁴⁵ NL-HaNA, Kalhorn, 2.16.33, inv.nr. 35, memo Kalhorn to Lemping, undated but somewhere between 22 June and 17 July 1956.

⁴⁶ 'Pipeline nach Wilhelmshaven; Gründung der Nord-West Oelleitung beschlossen', *Die Welt*, 10 November 1956.

companies needed to favour Wilhelmshaven, which was in desperate need of a new source of economic development after the destruction of its wartime marine base.⁴⁷ In retrospect, most of the explanations for Esso's tenacity to stick to the Wilhelmshaven option seemed rather circumstantial and vague. The fact that both Esso and BP stuck to Wilhelmshaven suggested that some sort of financial arrangement was struck with the Federal government that cancelled out the fairly obvious extra costs that had to be incurred in the case of Wilhelmshaven. Could one infer from this that the West German government was more active in sweetening the deal for the consortium than the Dutch government was? Possibly so, but the current state of research on the topic doesn't allow a conclusion in that direction yet.

A new plan: the transnational approach

As observed above, the particular interests of Esso did not coincide with those of all the members of the initial consortium. Rotterdam had the backing of Shell, which had become increasingly exasperated with the one-sided approach of Esso during the summer and fall of 1956.⁴⁸ When it became apparent that Esso was going to choose Wilhelmshaven over the summer of 1956, the Shell group moved to serve its own interest. On July 23rd, 1956, Royal Dutch/Shell, through its Dutch operating company Bataafsche Petroleum Maatschappij, incorporated the Company for the Study and Planning of Pipeline Projects in Western Europe NV (SAPPEUR NV). Sappeur NV contracted Bechtel Corporation to study the feasibility of a trans-European pipeline system. According to the press release, SAPPEUR NV was willing to consider applications from other parties with interests in transporting and processing crude oil in Western Europe for participation in the project.⁴⁹ The company was wholly owned by Dutch subsidiaries of the Shell group and the initial Board of Directors consisted of four directors from various parts of the Group.⁵⁰ Over the course of four years the board of directors was extended with 22 members. These included five Royal Dutch/Shell representatives. The other seventeen members were affiliated to other oil companies. The list comprised representatives from Esso (Standard Oil of New Jersey), Socony-Vacuum Oil Co., California Texas Oil Corporation (Caltex), British Petroleum, CFP/Total, Petrofina, Deutsche

⁴⁷ Posthuma, 'Het havenbedrijf 1945-1965', 43.

⁴⁸ Howarth & Jonker, *Powering the Hydrocarbon Revolution*, 295-297.

⁴⁹ NL-HaNA, EZ / Centraal Archief, 2.06.087, inv.nr. 408, letter from Lakerveld (dpt Industrial Investment, Min EA) to Institute for Dutch-American Industrial Cooperation, 28 September 1956.

⁵⁰ NL-HaNA, KvK Den Haag, Handelsregister, 3.17.13.03, inv. 2029, memorandum of association, 23 July 1956. Initial members of the board of directors included A. Hofland (director Shell, London), Ir J. L. van Krimpen (BPM, The Hague), P. P. Escoffier (director Shell, Paris) and J.C. Fitzgerald (director Shell Co. of UK).

Erdöl AG, Gelsenberg Benzin AG, UK Wesseling and five members of unknown affiliation of mainly French and German nationality. Among them were several high ranking representatives of the biggest oil companies, including the later chairmen of BP and CFP/Total, Sir Eric Drake and René Granier de Lilliac.⁵¹

Plans for such a large transnational pipeline network already circulated in the press by then. On 12 April 1956, *Die Zeit* published an article titled ‘Transeuropa-Pipeline’. The article observed that the growth of the European energy demand necessitated high investments and new, international approaches that moved past national-oriented solutions. These solutions would have to go further than constructing pipelines to relieve the crude oil transportation capacity on the Rhine and the German canals. The higher energy demand – especially heating fuel – was felt in all the major regions of Western Europe: the Ruhr, southern West Germany, Lotharingen and Switzerland. Up until now, the canals and rivers in northern Europe were still able to handle the crude oil transports and in Lotharingen plans were drawn up to build a canal to the Mosel. However, further south *Die Zeit* signalled increased talk of a pipeline originating in Marseille that would supply northern and central Western Europe with crude oil. This would entail a freight economy of up to DM 3 to 4 per ton. The article had a decidedly positive outlook on such a plan, as it would prove a good investment given the large observed growth rates of oil consumption in Western Europe. Moreover, such a trans-European connection would have positive effects on the economies of Germany, France, Switzerland and Luxemburg as it would obviously serve the common good of the European economies and offer politicians a new example of European cooperation: “a new binding element for the common interests”.⁵²

The article was rather vague on the sources of this project but referred to the industry’s plans to build refineries along the Rhine. Growing oil consumption not only provided an economical basis for refining in the Rhine-Ruhr area, but also in the Rhineland Palatinate, Baden-Württemberg, the Strasburg area and western Switzerland. With increasing Middle Eastern oil available to Europe – through the Suez Canal and the Iraq Petroleum Company and Trans-Arabian pipelines for instance – connecting the Mediterranean ports to the crude oil demand in the heartland of Western Europe started making commercial sense. On June 8th, 1956, the Bonn-based newspaper *General-Anzeiger*, also referred to the trans-European

⁵¹ NL-HaNA, KvK Den Haag, Handelsregister, 3.17.13.03, inv. 2029, Registrations of members of BoD in the Registry of Companies, 28 September 1956 – 26 January 1960.

⁵² ‘Transeuropa-Pipeline’, *Die Zeit*, 12 April 1956.

pipeline plan. This article alleged the main backers of this plan to be NATO strategists.⁵³ Although this seems plausible, as NATO was by then fully involved in planning its Central European Pipeline System for strategic fuel deliveries across Europe, the trans-European pipeline system as studied by SAPPEUR was to be a crude oil network in the first place. However, it could well be that SAPPEUR was intended as a commercial partner for the development of a European oil pipeline network. It is a fact that CEPS was and still is integrated into the products pipeline systems that developed commercially from the 1960s onwards. A second possibility was the existence of an entirely French plan for a pipeline from Marseille to Strasburg, on which Dutch newspaper *De Tijd* reported on 20 November 1956. In that case, SAPPEUR could be understood as the industry's answer to yet another national solution to the question of overland transportation of crude oil in Western Europe.⁵⁴

Triggered by these rumours of a trans-European pipeline plan but still unaware of the incorporation of SAPPEUR NV, the Port Authority of Rotterdam saw emerging in this second plan yet another challenge for the Rotterdam port. By then, plans for extensive port expansions had further developed in response to the initial Esso-plan and although Esso seemed to choose for Wilhelmshaven, the Port Authority was convinced that the economic foundations for further expansion of the port were there, with or without the Esso pipeline. As Koomans stated, the Esso-plan "had merely paved the way for further economic development".⁵⁵ From the first pipeline related plans in 1955 to the early sketches of a much larger expansion to the west of the Botlek area, emerged the plan Europoort. Although this plan wasn't presented to the public until 1957, by July 1956, the Port Authority had firmly set its goal on achieving a large-scale expansion similar to the later Europoort plan.

News of a trans-European pipeline network fed from Marseille now shook the foundations of this plan. On July 25th, 1956, the Port Authority drafted a memorandum to A. Hofland, director of Shell Petroleum Company and board member of SAPPEUR NV. The Port Authority asked Hofland to clarify on what term the trans-European pipeline, starting in Marseille, was projected to come on stream in order to calculate whether investments in new port expansions would be worthwhile economically. Port expansion to accommodate a pipeline terminal for a Rotterdam-Ruhr pipeline would not be very sensible if within the foreseeable future crude oil would eventually flow from Marseille to Rotterdam. The Port Authority had to earn back the investments through port duties on docking tankers. However,

⁵³ 'Wer schlägt das Oel um?', *General-Anzeiger*, 8 June 1956.

⁵⁴ 'Pijpleidingen en supertankers moeten de dorst naar olie lessen', *De Tijd*, 20 November 1956.

⁵⁵ De Goey, *Ruimte voor industrie*, 83.

with the trans-European network in place the tankers initially calling at the port in order to supply the Rotterdam pipeline terminal would no longer be calling. On the other hand, the Port Authority recognised the importance of port expansion to accommodate new facilities of oil companies wanting to locate themselves in the Rotterdam port. The Port Authority therefore pledged to keep committed to the new port expansion but in order to adapt these plans to the future needs of the industry, the Port Authority needed more detailed information on the changes that a trans-European network would entail for the port. The most pressing questions were: For how long would a Rotterdam-Ruhr pipeline pump crude to the Ruhr, before starting to pump oil in the opposite direction? Would then exports from Rotterdam increase? What would the consequences be for the pipeline terminal installations once the pumps would be reversed? And, finally, would it be possible to start a Rotterdam-Ruhr pipeline from the 1st and 2nd Petroleum docks near Pernis, the current home docks of Shell's Pernis refinery?⁵⁶ The last question clearly showed the anxiety felt by the Port Authority. Even if a trans-European network would kill the large port expansion envisioned by the Port Authority in the medium term, not having a pipeline connection was worse. Finding the compromise of getting the pipeline connection but not attaching it to the new expansion plan would solve part of the uncertainties faced by the Port Authority. On the other hand, the memorandum showed that the Port Authority was also committed to the longer term development of the Rotterdam port. Expansion to accommodate larger tankers was the trend, so Rotterdam should stick to its expansion plans. The economical value of it was, however, in the balance, as the questions to Hofland showed.

The Suez crisis and its consequences for the Rotterdam-Ruhr pipeline

Shell took the time to study its options. On September 21st, 1956, the Dutch consul-general in Hamburg informed the Dutch ambassador in Bonn that a “very important meeting was to be held on October 2nd between interested parties in the pipeline project for North-Western Europe”.⁵⁷ The SAPPEUR file at the Chamber of Commerce states that most of the 26 registered board members of SAPPEUR were added between September 1956 and December 1956, so probably during that period some hard nuts were cracked regarding the organisation of European crude oil transportation. In November 1956, Royal Dutch director F.A.C. Guépin delivered a speech in Rotterdam about the need to study crude oil

⁵⁶ GAR, AHB, 589.01, inv. nr. 70, memo from F. Posthuma, director of engineering at the Rotterdam PA, to A. Hofland regarding the interests of the Rotterdam port in the trans-European pipeline project, 25 July 1956.

⁵⁷ NL-HaNA, EZ / Centraal Archief, 2.06.087, inv.nr. 407, letter from the Dutch consul-general in Hamburg to the Dutch ambassador in Bonn, 21 September 1956.

transportation in Europe in a transnational context. In his speech he stressed that he envisioned an important role for the Rotterdam port in such a network. However, the Rotterdam role “will depend strongly on the availability of port facilities to accommodate the tankers of the future”.⁵⁸ This was part of the answer to the questions raised by the Rotterdam Port Authority in its memo to A. Hofland in July 1956.

However, the adaptation of the port to meet these challenges wasn't moving fast enough to accommodate the immediate requirements for a pipeline. After drafting the first plans in early 1956, which sought to address the concerns of Esso Germany, the Port Authority became entangled in a complex planning process in which the regional and national government were scrutinising the Rotterdam plans and even drafting their own alternative plans. Especially the Planning Board of the Province of Zuid-Holland and the Water department of the Ministry of Transport were actively involved. Whereas the Port Authority held its eye firmly on the short term goal of facilitating the pipeline connection, the regional and national government agencies aimed to address planning and water management issues in a broader framework. Also, the Port Authority's first concern was adapting the port to secure optimal deep-water access, to accommodate the large tankers of the future. The active involvement of government agencies at regional and national level complicated things considerably for the Rotterdam Port Authority. The latter, however, was dependent on the approval of those agencies in order to obtain overall approval for its expansion plans from the Ministry of Transport. Apart from the fact that Esso chose Wilhelmshaven for reasons other than the delays in Rotterdam's expansion plan, part of the involvement of other levels of government caused the expansion plan, that was first developed in response to the pipeline to the Ruhr, to become disconnected from that issue.⁵⁹

In the meantime, Shell was still considering its options. Finally, in April 1957, Shell announced, by voice of L.H. Sandberg (BPM legal representative and board member of SAPPEUR), that SAPPEUR had progressed with its study to the point that the Rotterdam-Ruhr pipeline could be constructed without risk of it not fitting into the envisioned European network later on.⁶⁰ A year after having lost the initial pipeline-plan to Wilhelmshaven, Rotterdam now boasted its own pipeline connection to the Rhine-Ruhr area. What explained this belated success? Why did Shell not decide earlier? What was the role of the Port

⁵⁸ NL-HaNA, EZ / Centraal Archief, 2.06.087, inv.nr. 408, Dutch newspaper (title unknown), *Stijgende olie-vraag vergt studie pijpleidingnet*, 16 November 1956.

⁵⁹ Posthuma, 'Het Havenbedrijf 1945-1965', 44-48; De Goey, *Ruimte voor industrie*, 84-88.

⁶⁰ NL-HaNA, EZ / Centraal Archief, 2.06.087, inv.nr. 408, Internal memo of the Directorate-General for Industrialisation and Energy Supply of the Ministry of Economic Affairs, 1 May 1957, p.1.

Authority? And what effect did the Suez crisis have, which unfolded in the same timeframe as SAPPEUR's studies into the trans-European pipeline plan evolved?

According to Ferry de Goey, it was the Suez crisis of November 1956 that turned Rotterdam's chances of becoming an important oil port in Western Europe. Firstly, because of the short-term effect of Marseille being less favourably located during the blockade of the canal and the IPC pipelines due to the longer sea route around the Cape of Good Hope. Secondly, because of the long-term effect of the crisis on increasing tanker sizes. With regard to Shell's choice to build the pipeline from Rotterdam in April 1957, De Goey linked it directly to the short-term effects of the Suez crisis.⁶¹ However, other factors needed to be considered.

Firstly, the location and timing for the new Shell refinery in the Rhine-Ruhr area was being discussed during 1956 and the first half of 1957. In August 1956, a suitable tract of land was found in Godorf, near Cologne and a supplementary capital expenditure proposal was filed with the Group's Oil Directorate in the same month to reserve the required amount of capital for Deutsche Shell's budget of 1957.⁶² Then the Suez crisis ensued, however, and as an economy measure, the new Rhineland refinery (as it was called internally at Shell) was cut out of the Manufacturing budget for 1957.⁶³ So, if any short-term effect, the Suez crisis might have just as well cost Rotterdam the pipeline connection to the Ruhr. The new Rhineland refinery was projected to process Kuwait crude, supply of which became suddenly uncertain when the crisis struck. However, around March 1957, the Group had acknowledged that further delay of the Rhineland refinery would put the market position of Deutsche Shell at risk. The earlier mentioned shortfalls in existing refinery output by the year 1960 and beyond made the coming on-stream of the Rhineland refinery in 1960 imperative. Moreover, the competition made no sign of slowing down either.⁶⁴ This same budget revision stated that Shell was still contemplating a pipeline feed to the new refinery to ensure the most economical supply of crude oil, either as a separate venture or as part of the trans-European system.⁶⁵ Probably, the budget revision was approved in March or early April 1957, because on April 16th, 1957, Shell announced to the Dutch Ministry of Economic Affairs that it had notified the Rotterdam Port Authority of its choice for the Rotterdam port as starting point for

⁶¹ De Goey, *Ruimte voor industrie*, 88.

⁶² SHA, MF / 48 / Godorf: Supplementary capital expenditure proposal, Germany 56/106, reservation of an additional DM 6 million for purchase of Godorf site in 1957 Deutsche Shell budget, 14 August 1956.

⁶³ SHA, MF / 48 / Godorf: Budget revision, Return no. 513, 15 March 1957, 1.

⁶⁴ *Ibid.*, 1-2.

⁶⁵ SHA, MF / 48 / Godorf: Budget revision, Return no. 513, 15 March 1957, 3.

its pipeline to the Ruhr.⁶⁶ On the same day, Deutsche Shell announced to the press that it had finalised its plans for the new Rhineland refinery at Godorf.⁶⁷ These developments coincided with the reopening of the IPC pipelines in March and the reopening of the Suez Canal in April 1957.⁶⁸ Moreover, as operations on the Suez Canal normalised after the summer of 1957, the pre-crisis pattern of crude oil transportation resumed. The route around the Cape of Good Hope was discarded as soon as supplies to Western Europe normalised and wouldn't become important until the mid-1960s.⁶⁹ The main reason was that port facilities in Europe around 1960 were not yet attuned to receiving the tankers that would make the Cape route economical.⁷⁰

The timing of the internal decision making process at Shell with regard to the new Rhineland refinery, clearly coincided with the timing of the pipeline choice. Once the budgetary issues with regard to the new refinery were resolved, the question of the pipeline feed could also be decided upon. This suggested that for Rotterdam the Suez crisis was more a bump in the road to obtaining a pipeline connection than a helping hand. Although the Rotterdam-Rhine Pipeline Company NV didn't come on-stream until 27 June 1960,⁷¹ its planning and construction was in tune with the planning and construction of the Shell refinery at Godorf. Moreover, the pipeline started at Pernis, the existing Shell refinery in the Rotterdam port. After losing the initial pipeline plan to Wilhelmshaven, the expansion plans as developed by the Port Authority in direct response to the initial plan lost traction and became out of sync with the Shell-plan. Notwithstanding the Suez crisis, the expansion of the Rotterdam port had become a plan for the longer-term, which suggests that the efforts of the Port Authority were less important for the short-term chances of obtaining a pipeline connection to the Ruhr than were the strategic and internal considerations of the Shell group.

The second issue to be considered is the question of the trans-European pipeline. SAPPEUR NV was established to study the feasibility of such a network. As European economic integration was still in its infancy, no European framework existed for the various

⁶⁶ De Goey, *Ruimte voor industrie*, 88.

⁶⁷ SHA, MF / 48 / Godorf: Press release from ANP (Dutch press agency) to BPM on Deutsche Shell's announcement on 16 April 1957, 17 April 1957.

⁶⁸ Yergin, *The Prize*, 495.

⁶⁹ OEEC, *Pipelines and Tankers*, 32; Lubell, *Middle East oil crises*, 46-47.

⁷⁰ OEEC, *Europe's need for oil*, 45.

⁷¹ GAR, library, inv. J1013, 1st Annual Report Rotterdam-Rijn Pijpleiding Maatschappij NV, 1960, 4. The operating company, incorporated as a private limited liability company, was a joint venture between BPM (40%), Gelsenberg & Mobil Handels- und Transport-Gesellschaft mbH (40%) and California Texas Corporation (20%). The pipeline supplied the refineries of Gelsenberg Benzin in Gelsenkirchen, Shell in Godorf and UK Wesseling in Wesseling. From 1963 onwards, it was also connected to the Caltex refinery in Raunheim near Frankfurt. (RRP NV, *Veertig jaar veilig en verantwoord transport*, 14).

legal and fiscal problems connected with a transnational pipeline system. An important part of the purpose of SAPPEUR was to clarify how such a transnational system would have to be designed and governed in the most efficient way, given the various national legal systems that were part of the trajectory of the envisioned trans-European pipeline network. When Shell announced on 16 April 1957 that it was ready to start planning the construction of the branch between Rotterdam and the Ruhr area, it did so under the condition that it would for the time being focus on the technical side of the project (the trajectory for instance). An internal memo of the Ministry of Economic Affairs stated that Shell indicated that it wanted to leave decisions on the legal entity of the company that would exploit the line and the specific governmental requirements for its construction for later consideration. In view of the trans-European network Shell did not want to set a precedent. For instance, filing for a concession from the Dutch state based on a declaration of general interest could lead the French state to obligate Shell to file for a concession in France in the case of the trans-European pipeline, which Shell feared could take years to materialise “given the red tape there”.⁷² However, the fact that Shell absolutely needed a crude feed for the Godorf refinery and because the trans-European pipeline could not be realised in time to perform this function, Shell decided to file for a concession from the Dutch state to construct the pipeline in Dutch soil nonetheless. Such a concession would save precious time in case the construction team ran into unwilling landowners.⁷³ From these considerations, one gets the impression that apart from the Suez crisis the legal and institutional puzzle of building a transnational pipeline network posed as many or more barriers to its inception than the temporary blockade of the Middle Eastern crude oil supply lines.

Although in the further process of obtaining the concession they seemed to be very little discussion about the question whether this project did indeed serve the general interest of the Dutch state, the memo did close with a critical note. In case the trans-European pipeline network would materialise in the near future and the Rotterdam-Ruhr line would switch to supplying crude to the Rotterdam refineries, thereby cancelling a considerable share of the ship movements in the Rotterdam port, what would be the ultimate interest for the Dutch state for such a pipeline?⁷⁴ Fact remained, however, that Shell stated specifically in its

⁷² NL-HaNA, EZ / Centraal Archief, 2.06.087, inv.nr. 408, Internal memo of the Directorate-General for Industrialisation and Energy Supply of the Ministry of Economic Affairs, 1 May 1957, 1.

⁷³ Ibid., 1.

⁷⁴ NL-HaNA, EZ / Centraal Archief, 2.06.087, inv.nr. 408, Internal memo of the Directorate-General for Industrialisation and Energy Supply of the Ministry of Economic Affairs, 1 May 1957, 2.

communication with the Ministry of Economic Affairs that the Rotterdam-Ruhr pipeline would be designed so as to fit into the trans-European network.

The trans-European crude oil supply network, however, never materialised as envisioned by Shell and its partners in SAPPEUR. In the course of the 1960s crude oil pipelines to southern West Germany were constructed from the ports of Marseille, Genoa and Trieste, but none of these lines extended past Karlsruhe. Part of the explanation for this ‘oil shed’, as it is sometimes referred to⁷⁵, between northern and southern landing ports for crude oil, is that the southern pipelines had to cross the Alps thereby increasing the transport costs of those pipelines. More important, however, was the increasing size of tankers. Frankfurt, lying in the middle of the area of the oil shed, could be hypothetically supplied cheaper by the southern pipeline if these were fed by tankers up to 100.000 dead weight tonnage. However, using tankers of 100.000 dwt or more, Frankfurt would be supplied cheaper via Rotterdam.⁷⁶ With the size of tankers increasing dramatically in the 1950s and 1960s, the possibility of turning the pumps in the Rotterdam-Rhine Pipeline to bring crude oil to the Rotterdam refineries via Marseille and the Ruhr faded quickly.

In this context, one of the most prominent effects of the Suez crisis was that it accelerated the trend of increasing tanker sizes. To the growing opportunities for scale economies in crude oil transportation was now added the strategic advantage of having greater flexibility in choosing transport routes with bigger tankers. The larger the tanker, the less costly it was to reroute it, for instance, around the Cape of Good Hope. With the quick advances of the Japanese shipbuilders in constructing ever-larger tankers in the aftermath of the Suez crisis, the cost of transporting crude oil overseas fell sharply.⁷⁷ It must be stressed here that the Suez crisis only added extra speed to a development that was already decisively moving toward larger tankers. The fact that Shell ordered Z-class tankers of 38.000 dwt in 1955, well before the unfolding of the Suez crisis, is testament to this. The Z-class tankers could not pass the Canal fully laden, as the Canal had at that time a maximum capacity of 32.000 dwt. Although the Canal would later be dredged to accommodate the larger tankers, this showed that “Shell by then no longer saw the Canal as a vital life line”.⁷⁸

⁷⁵ Molle & Wever, *Oil Refineries*, 49.

⁷⁶ Hubbard, *The Economics of Transporting Oil*, 29.

⁷⁷ Yergin, *The Prize*, 496-497.

⁷⁸ Howarth & Jonker, *Powering the Hydrocarbon Revolution*, 282.

Conclusion

This paper examined the role of the Port Authority in adapting the Rotterdam port to the changing pattern of oil processing and transportation in the context of what could be called the contest for pipelines and addressed the question of how and why the Port Authority of the Rotterdam port succeeded in securing continuity for its hinterland connections in the Rhine basin between 1955 and 1960? Secondly, the allegedly major role of the Suez crisis on this particular episode was reassessed.

With regard to both the role of the Port Authority and the Suez crisis one needs to distinguish between short-term and long-term effects. In the short term, the effects of the efforts of the Port Authority, as well as the direct effects of the Suez crisis seemed limited. The combination of planning for the Godorf refinery and the many legal and regulatory questions surrounding the prestigious project of realising a trans-European pipeline network probably had much more influence on the chances of the Rotterdam port to obtain a pipeline connection to the Rhine-Ruhr area than either the efforts of the Port Authority or the Suez crisis.

When in 1958 the construction of the Rotterdam-Rhine pipeline commenced, its starting point was Shell's existing Pernis facility rather than a new site in the Europoort extension, even though that extension was a direct consequence of the initial pipeline plan of three years earlier. It were primarily the strategic and economic considerations of the Shell group in their evaluation of the best available answers to the challenges posed by the changing pattern of energy consumption in Western Europe that decided the fate of the Rotterdam-Rhine pipeline. Although the initial ideas for the Europoort expansion were developed in direct response to the Esso pipeline plan, its further development and fruition was out of sync with the development of the Rotterdam-Rhine pipeline. Shell announced its choice for Rotterdam in April 1957; the Port Authority presented the Europoort plan in November 1957.⁷⁹

As for the Suez crisis, there seemed to be no evidence supporting a direct link between Shell's decision making and the alleged positive short-term effects of the Suez crisis for the Rotterdam port. On the other hand, there is evidence suggesting that Shell based its choice for the Rotterdam port on other considerations. If any direct effect, the Suez crisis seemed to have slowed, rather than speeded up this choice with the initial scrapping of the investments in the Rhineland refinery in response to the crisis. When Shell announced its choice for Rotterdam

⁷⁹ De Goey, *Ruimte voor industrie*, 89.

to build the pipeline to the Ruhr, it insisted that it was designing it to fit into the future trans-European pipeline network. The Suez crisis had not changed that ambition at all.

However, one of the long-term consequences of the Suez crisis was that it accelerated the already existing trend of increasing tanker sizes. In 1963, the Port Authority ordered the engineer L. Cohen to study the long-term effects of oil pipelines for the hinterland connections of the Rotterdam port and for the transshipment of crude oil and oil products. The report (probably produced in 1965) concluded that, based on transport economics, Rotterdam would probably not have to fear that Southern European pipelines originating in Marseille, Genoa and Trieste would reach further than Karlsruhe by the 1970s. The decreasing cost of tanker transportation due to the increasing scale of tankers and the limitations on the capacity of the southern pipelines, favoured Rotterdam in its competition for access to the West German Rhine basin hinterland with the Mediterranean ports.⁸⁰

As for the Port Authority's efforts, their success in securing hinterland connections via pipelines seemed to be especially fruitful in the long-term. Whereas the efforts of the Port Authority in response to the requirements of Esso Germany for its initial pipeline plan seemed not to have had much effect on the short-term chances of the Rotterdam port for a pipeline connection to the Ruhr, it proved very useful in the longer term. Ten years after the construction of the initial Rotterdam-Rhine pipeline, a second, larger crude oil pipeline to the Ruhr area was constructed, originating in the new Europoort area. This one had a larger capacity, in tune with the growth of oil consumption in West Germany.⁸¹ The fact that the larger pipe entailed lower transport costs was further enhanced by the capabilities of the new Europoort area to accommodate the continuously growing tankers. In that sense the Port Authority proved extremely successful in securing long-term competitive advantage for Rotterdam as a deep-water port catered to serve the biggest tankers on the globe. L. Cohen's report proved that Rotterdam had secured a strong and long-term presence in its traditional Rhine basin hinterland, notwithstanding the competition from other European ports specialising in transportation of mineral oil. The key to this success was to recognise the future trend and capitalise on the geographic advantages of the location of the Rotterdam port. As Royal Dutch director Guépin had called for in his speech in November 1956, the Port Authority proved successful in its efforts to secure a relevant role for the Rotterdam port in the future of increasing scale in oil transportation. It is in part thanks to the Port Authority's

⁸⁰ GAR, AHB, 589.01, inv. 4261, Ir L. Cohen, *Study into the consequences of the transportation by pipelines of crude oil and oil products in Europe for Rotterdam port traffic and the Rotterdam port as location for refineries and petrochemical companies*, undated but probably produced in 1965, 38.

⁸¹ RRP NV, *Annual Report 1968*, 5.

response to that 1950s contest for pipelines to the Ruhr that now still provides for one of the most efficient processing cores of the European refining sector.

Apart from the questions addressed in this paper, the pipeline episode does raise a number of other interesting research questions, which could not be addressed here. One of these questions is why the roles of national and regional government in West Germany and the Netherlands seemed to differ. The reason for referring to the episode as a contest is that the whole affair seemed to have a considerable measure of nationalist policy from the German side. Some reasons for this were explored in this paper but these remained tentative and rather unsubstantiated. On the Dutch side, the governmental approach to the issue seemed less single minded. Whereas the local government in Rotterdam was convinced that it needed a swift response in order to secure the pipeline to the Ruhr, other levels of government seemed less pre-occupied with the pipeline and more with fitting Rotterdam's future expansion into the broader framework of regional and national concerns over city planning and water management. Part of the explanation for the differing approaches in the Netherlands and West Germany, was probably the position of Wilhelmshaven versus that of Rotterdam. Wilhelmshaven was a port almost without function at the time, while Rotterdam was already the largest port in Western Europe with a diverse port economy and with implications for many different parts of regional and national policy. Adapting the Rotterdam port to future needs was therefore probably less straightforward than in the case of adapting Wilhelmshaven to the prospect of giving it a large share of West Germany's crude oil imports.

Secondly, and connected to the apparent difference in how the West German and Dutch government approached the contest for pipelines, was the relationship between business and government. In the German case there seemed to have been some government pressure involved. At least, that was suggested by the seemingly non-economical decision-making by Esso Germany. On the Dutch side, this seemed less the case, probably even more the other way round.

A third question was the issue of legislation. The SAPPEUR studies on a trans-European pipeline network seemed to suggest that there was considerable uncertainty about the legal and legislative context in which transnational pipeline projects were to be developed. This seemed further to suggest that, like in the Dutch case, there was in fact no specific pipeline legislation in place in most Western European countries. The obvious question would therefore be to what extent these legal uncertainties influenced the intra- and inter-company decision-making with regard to pipeline networks in Europe? Why was the first transnational

crude oil pipeline in Western Europe the Rotterdam-Rhine pipeline instead of the Marseille-Rhine-Ruhr pipeline? These questions, however, require further research.

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GAR Communal archive, Rotterdam, The Netherlands

- AHB: Archive of the Rotterdam Port Authority

- VOA: Archive of Koninklijke Van Ommeren NV

NL-HaNA National Archive, The Hague, The Netherlands

- EZ: Archive of the Ministry of Economic Affairs

- BuZa: Archive of the Ministry of Foreign Affairs

- KvK Den Haag: Archive of the Chamber of Commerce, The Hague

- Kalthorn archive: Archive of special official for Rhine traffic, attached to Dutch embassy in Bonn

SHA Shell Historical Archive, The Hague, The Netherlands

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