

# New Railfreight Line from the Netherlands to Germany

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## 1. The Project

A brand new railway exclusively for freight? Yes, this is exactly what the Dutch government plans for the near future. Naturally one could always extend and upgrade an existing line, but in this case, the government of the Netherlands has chosen a new high-class railfreight line, the Betuwe Railfreight Line (BRL). The reasons for this decision are as follows:

- Today, existing railway lines in the Netherlands are primarily used for transport of passengers (about 85%). These lines run through city centres with quite a few level crossings. This is not the ideal situation for transport of goods and certainly not for dangerous goods.
- With very few exceptions, existing railway lines carry both passengers and freight trains with speeds varying from about 70 to 150 km/h. Naturally, the capacity of a railway line is higher if all trains run at the same speed.
- Upgrading an existing mixed passenger/freight railway line to the standard of a new freight-only line would cost the same – and maybe more – than the proposed BRL.

The BRL is not just a Dutch line; it will be an international link between the largest port in the world and the main industrial areas of Germany and North Italy. The BRL will run from the port of Rotterdam to the Dutch/German border and will link with the German rail network to continue south to the economic centres of the Rhine/Ruhr region like Cologne and Frankfurt. From there the line runs to Switzerland finally reaching the Italian centres of Milan and Bologna.

A special contract has been concluded between the ministers of

transport of Germany and the Netherlands to ensure perfect connection of the Dutch BRL with the German main railway system and expansion of this system before capacity bottlenecks emerge. In this way, freight to and from Rotterdam will move fast, reliably and unhampered. The new BRL will provide a service that is competitive with road transport over distances in excess of about 300 km.

## 2. The Project Need and Urgency

For many years, the Netherlands has been the leading transport and distribution country for Europe. Its strategic location at the North Sea – right in the middle of West Europe – and the availability of good roads and navigable rivers greatly contributed to the development of Rotterdam into the world's largest port.

To maintain this leading position, improvements in the total transport system of the Netherlands are necessary. European motorways are full and cars and lorries frequently cause severe traffic jams. Saturation of the main roads hampers traffic and the costs of delays are increasing. In various European countries, governments have decided not to build new motorways nor expand existing ones. Instead they are giving priority to investment in environment-friendly modes of transport such as rail, inland navigation and coastal shipping.

The transport policy of the Netherlands is in line with this European trend; protecting the environment and improving the accessibility of economic centres means giving priority to expanding and upgrading rail and water infrastructure. And this is vital for the Netherlands! Shipowners stress the necessity for deep-sea ports with modern facilities that can handle and discharge ships fast and a distri-

bution system that can distribute cargo overland to its final destination fast, efficiently and without delay. This is particularly important for the container trade, where fast unloading of big fourth-generation container ships may be offset by slow transport overland due to traffic jams on roads or poor rail performance. Shipowners will obviously choose those European ports offering fast discharge and a full choice of distribution by road, rail and inland waterways.

In the Netherlands, road and inland waterways present good international connections, but the rail connections are poor. This is why the BRL must be built. The transport volumes through the Netherlands predicted for 2010 is 1,106 million tonnes or 56% more than in 1987. This amount cannot all be transported by road. A sizable part must be taken over by rail and water. Would the railways be able to increase their market share? Research has confirmed that this would be impossible without the BRL.

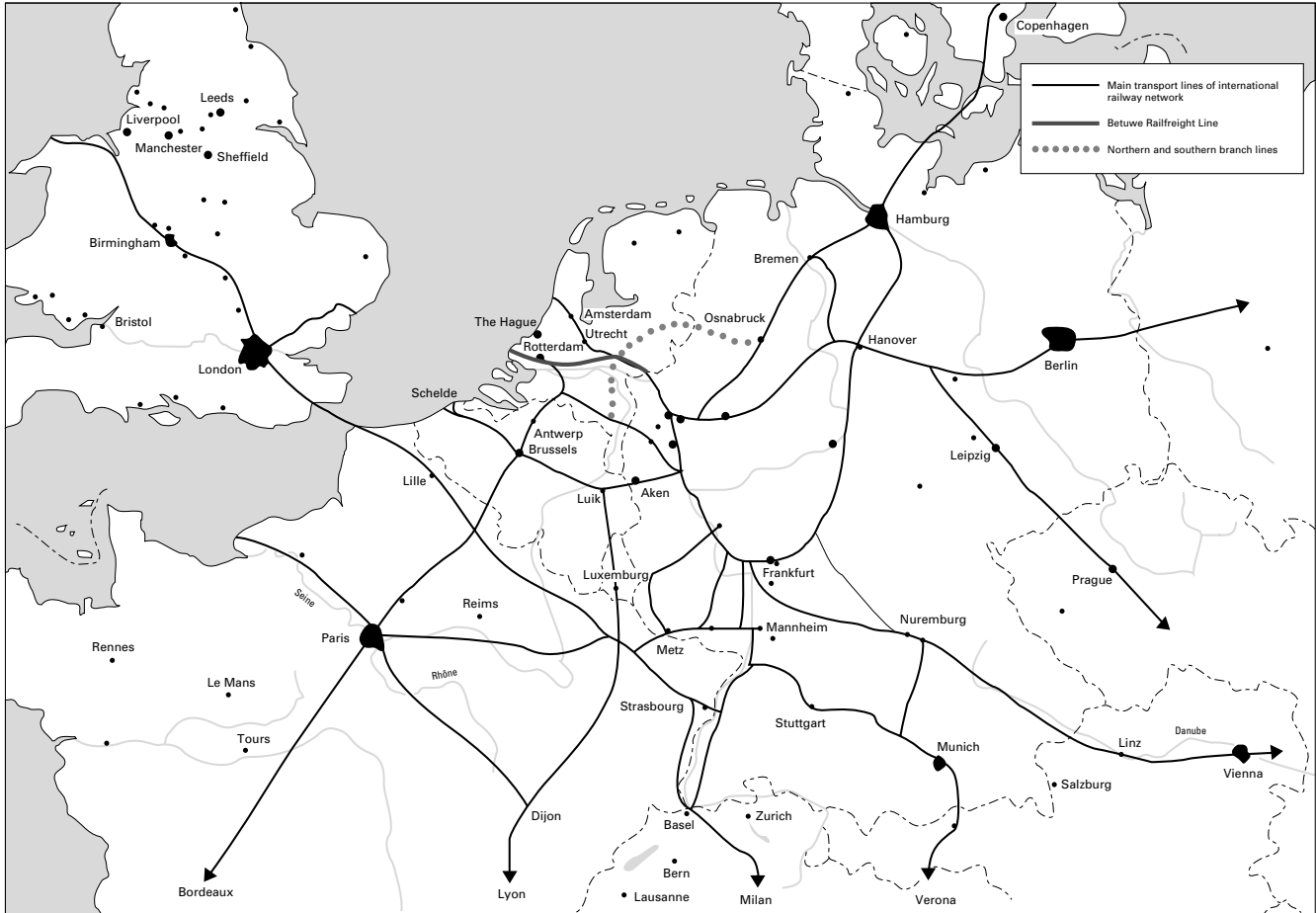
## 3. Are There Alternatives?

Because freight movements by rail continue to show considerable losses, the government deemed it necessary to carry out a full investigation into the possibility of turning the Dutch Railway Company (NS) freight sector into an expanding and profitable one. An external committee was set up to carry out this task. In July 1989, this committee presented its report on the future of the NS railfreight sector to the Minister of Transport, Public Works and Water Management.

The study showed that the railfreight sector can capture a substantial part of the predicted growth of the transport market, but only if three main conditions are met:

- An improved and market-oriented freight organization

**Figure 1 The Netherlands, Gateway to Europe, with Betuwe Railfreight Line and Northern and Southern Branches**



- Additional rail infrastructure, including a new railfreight line from the North Sea ports of Rotterdam and Amsterdam to the German industrial centres.
- Discontinued subordination of railfreight to passenger transport.

In short, the railfreight business in the Netherlands can only expand and make money if a new freight line is constructed, and if the railway company reorganizes its freight sector.

In 1992, another external committee issued a report on the relationship between government and the railway company. This committee recommended a full-scale reorganization of NS which should be split into four separate main profit centres for passengers, freight, infrastructure and infrastructure capacity management. These latter two units would be controlled by the government because the government is responsible for con-

struction, maintenance and financing of all infrastructure. The government and parliament have adopted the recommendations and NS is finalizing its restructuring. In 1995, the freight unit will be privatized as NS Cargo N.V. (a limited liability company).

As mentioned earlier, there is no alternative to the dedicated rail freight line—it is a clear must. More freight could be handled by inland navigation and they are being encouraged by the government to do so. However, it is for the customer to decide which transport mode to use. If inland navigation cannot meet the customer's requirements on quality and/or price, rail and road will compete to capture the business.

A new government was formed in 1994. Although the previous government and parliament had approved construction of the BRL, the new government appointed a committee to investigate whether financially more

attractive alternatives to the BRL exist. The committee's report in January 1995 showed that there are no better alternatives to the BRL and recommended full construction according to the original plan and route location, with increased attention to protection of the environment.

The Committee also recommended increasing costs for transport by road on an international scale in order to promote rail transport. The report should enable parliament to take the final decision on 19 June 1995, to build the BRL.

#### 4. What Would Happen If the BRL Is Not Built?

As explained above, the NS rail freight sector will have little chance to grow and survive if the BRL is cancelled. But there are other far-reaching consequences.

Not only the rail sector would miss



■ A modern freight train passing through a typical Dutch landscape. (author)

**Table 1 Freight Volumes over East-West Axis**

Total freight in, from and to the Netherlands, per type				Total freight over east – west axis		
Type/Volume	1990	2015		1990	2015	
		ER	GS		ER	GS
Containers	23	85	45	10	43	23
General Cargo	255	475	405	66	160	134
Bulk	487	640	550	174	277	233
<b>Total</b>	<b>765</b>	<b>1,200</b>	<b>1,000</b>	<b>250</b>	<b>480</b>	<b>390</b>

Source: Mc Kinsey & Company/NEA/CPB Team Analysis

a “golden opportunity”. The entire Dutch transport and distribution system would feel the negative effect. Without a high-quality international rail link, Rotterdam’s leading position in the world would weaken. Analyses by international transport consultants reveal that some shipowners would switch to other West-European ports with first-class rail connections.

Obviously, a decrease in the number of ships calling at the port of Rotterdam means a loss to the national economy in terms of added value, employment, investment, maintenance, subcontracting, etc. Depending on the scenario selected for the economic activities, the market value of the cumulatively lost added value for the port of Rotterdam has been calculated from US\$10 to US\$22.5 billion<sup>1)</sup>.

No railfreight line would also mean that the government’s policy to reduce emission of harmful gases, like CO<sub>2</sub> and NO<sub>x</sub>, will not be successful, because more goods will be transported by lorry. This will bring the Netherlands into an awkward situation; Germany, Switzerland and Austria are pursuing policies for a cleaner environment by promoting rail transport at the expense of transport by road, but Dutch lorries would have to pass through these countries to deliver goods to Europe. On 21 April, the Cabinet decided to build the BRL as soon as possible and will spend an additional US\$ 530 million to reduce the noise levels of the line. Parliament will discuss the reports on the BRL on 19 June. Bearing in mind the positive outcome of the latest report and the Cabinet’s decision to allocate more

money for protection of the environment, it is expected that the go ahead will soon be given. An unexpected rejection would cause great embarrassment with Germany in particular. I cannot believe that our neighbours will gratefully accept thousands of additional heavy lorries on their crowded motorways.

### 5. Estimated Costs, Revenues and Transport Volumes

In 1992, the total investment cost of the BRL was calculated at US\$3.6 billion<sup>2)</sup>. During the parliamentary discussions in December 1993, US\$0.4 billion was added to cover additional measures to protect the environment.

After price correction from 1992 to 1993 values, the updated total investment cost now amounts to \$4.1 billion<sup>3)</sup>. This new figure includes \$1.1 billion for protection of the environment.

The central planning office of the Netherlands has calculated the present value of the added value from use of the BRL. Depending on the scenario selected to forecast future economic developments<sup>4)</sup>, the total direct

and indirect effects of the line vary between US\$4.0 and US\$6.9 billion for the period 1993 – 2010 and between US\$6.8 and US\$12.7 billion for the period 1993 – 2025.

Estimates of future use of the BRL are derived from market analyses by various international consultants and based on the two economic scenarios used by the central planning office. The total flow of freight traffic, expressed in millions of tonnes, is shown in Table 1.

Studies have provided a breakdown of total freight by volume and by transport mode in the Netherlands (million tonnes/year).

Table 2 shows that in the 2010 the total railfreight through the Netherlands will have more than trebled (from 18 million tonnes to 65 million tonnes).

A substantial part of these 65 million tonnes will travel over part or all of the new BRL, as shown in Figure 2.

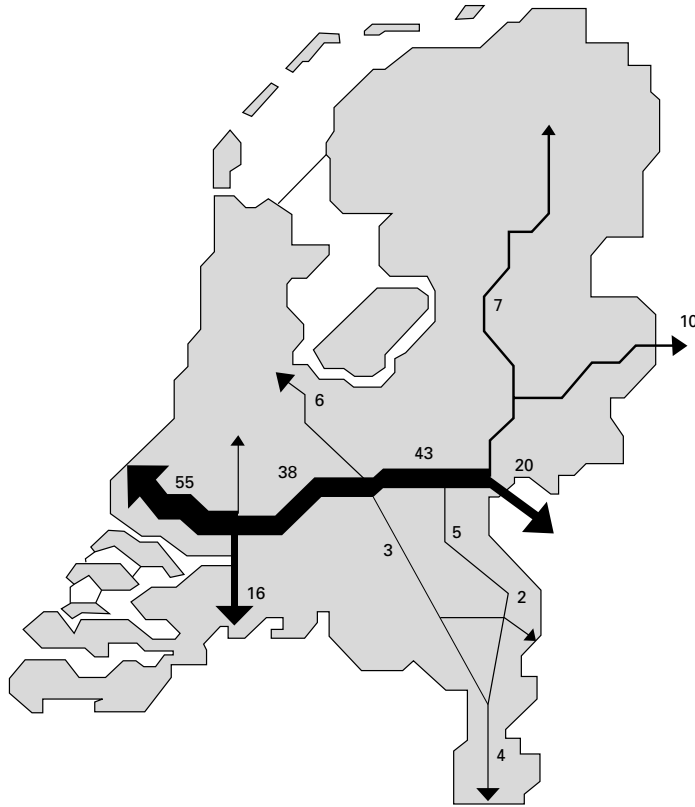
From this map, one can see that the western part of the BRL (from the North Sea coast to the city of Rotterdam) will carry most of the rail business, i.e. 55 million tonnes. Further eastward, rail cargoes will

**Table 2 Freight Volumes over East-West Axis by Mode**

Mode and forecast	National			International			Totals		
	1987	2000	2010	1987	2000	2010	1987	2000	2010
Road	365	469	570	90	112	145	455	581	715
Rail	5	9	13	13	39	52	18	48	65
Water	91	110	130	143	181	196	234	291	326
<b>Total</b>	<b>461</b>	<b>588</b>	<b>713</b>	<b>246</b>	<b>332</b>	<b>393</b>	<b>707</b>	<b>920</b>	<b>1106</b>

Source: Prognos/NEA/Kessel, Knight Wendling Consulting

**Figure 2 Betuwe Railfreight Line with Northern and Southern Branches**



spread in various directions:

- 20 million tonnes to Belgium
- 32 million tonnes to Germany
- 13 million tonnes remain within the Netherlands.

The main BRL and its northern and southern branches are expected to carry 32 million tonnes in 2010 or about 50% of the total rail volume in the Netherlands.

## 6. Economy Versus Ecology

Various European studies have shown that transport by rail affects the environment far less than transport by road. However, it appears almost impossible to calculate the exact benefits to the environment by building and running a new line compared with a new or expanded motorway. In the early BRL planning stages, fierce opposition arose from many sources such as people living near the planned route, from competing modes of transport, from municipalities, politicians,

action groups and many individuals.

Discussions in parliament have led to additional measures to reduce the adverse effects of the BRL, such as more noise barriers, underground sections and sections with tracks below surface level. Such measures have weakened protests, but in various parliamentary debates politicians have stressed the necessity to extend the protective measures. Without such further measures, parliament is not likely to give its final approval to build the BRL. The Cabinet has meanwhile agreed to increase investments in noise abatement and nature conservancy by US\$ 530 million. Af-



### Arnoud J. de Zoete

Dr Arnoud de Zoete was born in The Hague in 1937. He studied English language and literature and graduated with an M.Sc. in Economics from the Erasmus University of Rotterdam. He worked for Esso in the Netherlands and in England in various managerial positions and became planning manager with Hunter Douglas Rotterdam in 1971. In 1975, he became head of the new national railfreight division of the Department of Transport in the Hague, and in 1983, head of the combined national and international railfreight division. After 2 years of project management to privatize the NS freight sector, he now manages his own consultancy firm. He has published many articles on railway policy in international magazines.

### THE BETUWE RAILFREIGHT LINE FACTS AND FIGURES

Data excluding existing dedicated railfreight line from Rotterdam to the North Sea coast of about 40 km.

Length	121 km
Length of track	387 km
Length of rails	774 km
Area	600 ha
Length of tunnels	5 km
Length of viaducts	29 km
Length of sound barriers	141 km
Number of viaducts	125
Number of culverts	124
Weight of rails	45,000 tonnes
Number of points	437
Number of sleepers	650,000
Sand	16,000,000 cubic metres
Stone chippings	3,500,000 cubic metres
Construction	20,000 man years

Design of Betuwe Railfreight Line:

Maximum speed	120 km/h
Maximum axle weight	22.5 tonnes
Capacity, trains per hour in each direction	10
Number of level crossings	0

Number of trains in both directions (east-west and west-east) in 2010, for busiest part of route 310 per day

Source: Department of Transport, Public Works and Water Management, 1994

ter this Cabinet decision, construction of the BRL is expected to get parliamentary approval in June 1995. ■

*Note:*

- <sup>1)</sup> Source: Knight Wendling Consulting B.V.
- <sup>2)</sup> Conversion rate: US\$1 = Dfls1.75
- <sup>3)</sup> Source: Department of Transport, Public Works and Water Management
- <sup>4)</sup> Two main scenarios: Global Shift (GS) and European Renaissance (ER). The growth of the ER scenario is higher than the GS scenario due to assumed advanced international integration in Europe.