

Third track in Germany

Advice of steering committee to state secretary

8 October 2014

1. INTRODUCTION

In the period 2015-2022 a third track will be built in Germany on the Emmerich – Oberhausen section. During construction the capacity of the Betuweroute will be significantly reduced at certain times. To neutralize the construction's negative effects on rail freight transport, the ports and the economy in the Netherlands, the parties involved have compiled a package of measures. The timely and effective implementation of this package is a considerable challenge, which the parties involved will take on together to realize the ambition of unimpeded rail freight transport during the construction of the third track. The nuisance to local residents caused by extra trains will be mitigated as much as reasonably possible.

2. BACKGROUND AND CONTEXT

Last year Germany¹ decided to build a third track between Emmerich and Oberhausen. This is a very important step for the Betuweroute as well as the Dutch economy. As the third track will increase capacity on the freight corridors significantly, it will enable and drive growth of rail freight transport. In the longer term, it will lead to a maximum utilization of the Betuweroute.

However, as a result of the construction works the Netherlands is facing reduced capacity on the Betuweroute from 2015 to 2022. In 2015 preparation work will reduce the capacity during 17 weeks from 110 trains (in 2013) to 40 trains a day. In 2016 there will be only one track available on the Emmerich-Oberhausen section for six months. From 2017 onwards capacity will be reduced on the Emmerich-Oberhausen section during one week each month: 25 trains per day (night period) versus 110 in 2013. In the remaining three weeks of each month there will be no capacity restrictions. In addition, from 2017 onwards there will be no or only limited capacity during a number of weekends.

Rail freight transport makes an important contribution to the business climate, and with it the overall economy of the Netherlands. Various industries strongly depend on the railways, such as the chemical industry with a cluster of companies in Limburg and the sea ports of Rotterdam and Amsterdam. Towns and provinces in the Eastern Netherlands, especially those on the Brabant Route, will be dealing with more freight trains for seven years. It is absolutely vital that the logistical, financial / economic and environmental effects of the construction of the third track be kept to a minimum.

3. APPROACH

A steering committee has been formed to manage the effects of the reduced capacity of railway freight transport on the Betuweroute during the construction of the third track. With the Ministry of Infrastructure and the Environment presiding, ProRail, Keyrail, the Port of Amsterdam, the Port of

¹ Federal state of Nordrhein-Westfalen (NRW), Bundesministerium and Deutsche Bahn

Rotterdam Authority, local and regional authorities, operators, shippers companies and the Strategisch Platform Logistiek are represented at management level. The steering committee is responsible for analysing bottlenecks, developing a package of measures, and ensuring its implementation. It also has an important role in creating support for these measures and their consequences, both among the parties 'on the track' and those 'along the track', at present and during construction.

The aim defined by the steering committee is

- unimpeded rail freight transport during the construction of the third track in Germany.
- to make the impact on and along the track transparent and prevent nuisance for local residents as much as reasonably possible.

In this context, a number of constraints have been agreed on

- within the statutory frameworks for dangerous goods ('wet Basisnet') and noise (known under the acronym SWUNG ('*Samen Werken in de Uitvoering van Nieuw Geluidbeleid*'))
- well-considered, transparent weighing of financial, economic and social interests (incl. safety)
- relevant parties are actively involved and do their utmost to achieve the shared goals
- room for adjustments to passenger transport and measures concerning loss of revenue.

Industry experts will prepare the measures under the direction of a programme team.

Municipalities/provinces, shippers and chain partners are actively involved by means of support sessions. There will of course be close consultations with DB Netze².

4. MEASURES PROPOSED

The steering committee proposes a package of measures that are to be taken in conjunction with each other. The scope of these measures is not limited to the Netherlands, but also looks beyond in connection with international flows of goods and transport corridors, especially to Germany. Some of the proposed measures tie in with existing initiatives³, agreements & regulations (such as the Capacity Allocation Decree⁴, Low-noise Equipment Subsidy Programme) and national programmes (e.g. regarding noise). A further explanation can be found in Annex 1.

4.1 Rerouting

- With limited availability of the Emmerich-Oberhausen track section in certain periods, freight operators will have to use other routes than the Betuweroute (border crossing)
- An analysis was made of the flows of goods (current and expected growth) and how they can be accommodated most efficiently.
- Two starting points were used in this rerouting plan:
 1. Direct freight flows in the direction of North/East Germany and Scandinavia as much as possible via Oldenzaal and trains in the direction of South Germany and Italy as much as possible via Venlo (makes sense logistically)
 2. Dangerous goods will be transported via the Betuweroute as much as possible.

² Responsible for the construction of the third track.

³ For instance Long Term Rail Agenda (*Lange Termijn Spooragenda*), Rail Freight Plan of Attack (*Aanvalsplan Spoorgoederen*), 'Better and More' (*Beter en Meer*), 'Controlling and Adjusting in the Future' (*Be- en bijsturing van de toekomst*), chain management, VES (further operation of freight transport), control centre(s) Maasvlakte

⁴ Main Railway Infrastructure Capacity Allocation Decree (*Besluit capaciteitsverdeling hoofdspoorweginfrastructuur*)

- In order to effectuate these measures so that the flows can be accommodated via Venlo, the Eastern Netherlands and the Betuweroute, operational and other agreements must be worked out and agreed on.

4.2: Constraints

- To comply with the statutory frameworks of the Basic Transportnetwork, measures are proposed to transport Basic Transportnetwork substances over the Betuweroute as much as possible⁵
- To ensure that sufficient capacity for rail freight can be offered continuously during the construction, the steering committee advises:
 1. adjusting the Capacity Allocation Decree⁶ to provide a minimum service level of:
 - 4 paths/hour/direction on the Brabant Route; please note: this is in line with current practice
 - 2 paths/hour/direction between Deventer and Oldenzaal⁷
 2. No maintenance in the fourth week
- Prioritization of types of traffic if there is insufficient capacity, still taking the Capacity Allocation Decree as a basis

4.3: Increase the projected capacity for rail freight

- Partly to enable the above-mentioned rerouting the current process needs to be improved to meet the capacity demand, especially from 2017 onwards.
- At the moment Prorail allocates a maximum of 75% of the train paths available for rail freight transport in its planning; the remaining 25% (adjustment margin) is available for making adjustments in the implementation, if needed.
- Following the advice of experts, the steering committee has decided to take measures that should allow for a reduction of the adjustment margin by half.
- This involves measures that not only require an effort from ProRail and Keyrail, but also from chain partners (shippers, operators, terminals and international infrastructure managers).
- The extra capacity increase will not only benefit the Brabant Route and the Betuweroute, but in the end the entire rail sector.
- The steering committee will request a second opinion to assess the feasibility of the 12.5% reduction of the adjustment margin.

4.4: Other measures

In order to make the above-mentioned rerouting possible, several additional measures will have to be taken to guarantee sufficient capacity under the prevailing statutory frameworks. In particular these concern:

- measures intended to limit the undesired environmental effects (for instance give priority to noise reduction along the Brabant Route and Bentheim Route, make agreements about the increased use of low-noise rolling stock)
- alternative transport options or capacity-increasing measures for Regional Express Venlo – Vierssen – Hamm, during diversion periods
- Make border at Herzogenrath accessible to electrified freight transport

⁵ Within the Basic Transportnetwork (wet Basisnet), the best risk margin for the transport of dangerous goods is available on the Betuweroute.

⁶ Main Railway Infrastructure Capacity Allocation Decree

⁷ Expectations are that 1 path/hour/direction provides not quite enough capacity for handling freight trains

5. CONSEQUENCES

The proposed package of measures is substantial and challenging and requires no small effort from all parties involved, integrated management, and solutions for the extra costs involved. In the end, this should enable the joint ambition to be achieved: unimpeded rail freight transport during construction. Nevertheless the effects of measures will have to be monitored continuously during their implementation and practical fulfilment. If necessary, measures must be tightened and supplemented proactively to solve bottlenecks on and along the track as they arise in practice.

Panteia⁸ conducted an independent study of the economic impact of the capacity restrictions and the proposed measures. The following conclusions can be drawn from this study:

1. The costs of the measures easily outweigh the adverse effects that would arise if the measures were not taken
2. When the proposed measures are taken, the rail sector and the Netherlands will be in a better starting position after construction has been completed, from 2023 onwards.

The costs of some of the measures proposed will run to many millions of euros, for instance the adjustment of infrastructure and the deployment of alternative transport options or capacity-increasing measures for certain passenger trains. As a result of the measures operators and shippers will face extra costs in the chain amounting to many tens of millions of euros, partly due to rerouting (detour costs). Besides the higher costs, there will be a broad economic impact. If a package of measures is provided, the economic loss will be limited to only a few tens of millions of euros. If no measures were to be taken, the economic impact would be much greater.

Towns and provinces in the Eastern Netherlands, and especially those on the Brabant Route, will be dealing with more freight trains for seven years. In a limited number of places along the Brabant Route and in the Eastern Netherlands the noise production ceilings may be exceeded slightly if no adequate measures are taken. If the proposals regarding Basic Network substances are effectuated completely, expectations are that the Basic Network ceilings will not be exceeded along the Brabant Route. If not, there will be some limited local exceeding of these ceilings. In any case, for the Eastern Netherlands the Basic Network ceilings are not expected to be exceeded. With regard to level crossing safety no significant changes are expected; however, whether the construction of the third track is a reason to adjust priorities within the LVO⁹ is an issue that will be considered. Passenger transport will be left mostly unaffected. As things are looking now, only the Regional Express Venlo-Viersen-Hamm might be replaced by alternative transport options during the construction work. In this context it should be noted that a change in the Capacity Allocation Decree to create four freight paths per hour on the Brabant Route will limit the expansion of passenger transport on that route.

The aim defined by the steering committee is unimpeded rail freight transport during the construction of the third track in Germany. In the unlikely event that, despite the proposed measures and any tightening thereof, this aim proves not completely attainable, alternatives will have to be found in order to maintain freight flows and their expected growth for the Netherlands. Possible alternatives that will be looked into will be the use of other transport modalities.

As stated earlier, all parties involved will benefit once the construction of the third track is finished after 2022.

⁸ By order of the Ministries of Infrastructure and the Environment and Economic Affairs

⁹ *Landelijk Verbeterprogramma Overwegen* (National Level Crossings Improvement Programme)

6. STEERING COMMITTEE'S ADVICE

The steering committee:

- intends to take the above-mentioned package of measures¹⁰ whereby all parties will make every effort to implement and fulfil the measures successfully; in this context it is noted that during implementation and execution it might be necessary to tighten and supplement the measures in order to realize the ambition of unimpeded rail freight transport
- intends to lay all this down in one or more cooperation agreements; participation is voluntary but not free of obligations and should offer incentives to the participants; this will allow (prior) agreements to be made with regard to:
 - compensation of financial and economic impact
 - intensified operational collaboration
 - prioritization of traffic types
- intends to continue to drive the objectives collectively, and retain the project organization for this purpose
- intends to develop and implement a communications strategy in the short term, aimed at actively involving stakeholders and presenting a positive image of the construction of the third track
- advises the State Secretary to amend the Capacity Allocation Decree, so that sufficient capacity can be offered during construction on the Brabant Route (minimum service level four paths/hour/direction) and on the Deventer – Oldenzaal route (minimum service level two paths/hour/direction)
- advises the State Secretary to make agreements with its German colleagues at NRW with regard to the deployment of alternative transport options or capacity-increasing measures for the Venlo – Vierssen – Hamm line during diversion periods.
- observes that in view of the projections with regard to transport and the currently applicable ceilings for noise and the Basic Network, rerouting could result in a limited local exceeding of these ceilings, and advises the State Secretary to examine what suitable measures could be taken in that case within the statutory frameworks
- advises the State Secretary to cooperate to the best of its ability with measures that limit environmental effects (noise, vibrations and level crossing safety) on the diversion routes
- advises the State Secretary to examine, together with parties involved and the Ministry of Economic Affairs, how the financial and economic impact may be limited; in this context market parties hold the view that (partial) compensation of demonstrable and directly related additional costs in the chain and rate differentiation for user fees should be offered.

7. FURTHER STEPS AND COMMUNICATION

Over the last months much work has been done and the steering committee has jointly arrived at a proposed package of measures that require efforts from all parties. Given that the initial work will start on 20 April 2015, a number of measures are already being implemented. The implementation of the complete package of measures must be started as soon as possible. For this reason, the agreements reached in the steering committee must be worked out down to operational level over the coming months.

¹⁰ with the exception of alternative transport options for Venlo – Vierssen – Hamm, see 6th bullet

Integrated management and monitoring will be necessary during implementation and execution. Inherent in such a programme is that it will be necessary to tighten and supplement measures. The steering committee and the programme organization will be retained to realize the set goals efficiently.

Communication is an important pillar in this. It is vital that all the parties concerned be kept actively involved and informed, both 'on the track' and 'along the track'. During the entire period municipalities, security regions, citizens, shippers, recipients and executive chain parties must be informed, using existing communication lines and the existing website as much as possible. It is very important that this communication is proactive and transparent, and takes place both at a national and international level.

On behalf of the steering committee,
Teunis Steenbeek, Programme Manager

Composition of steering committee

Chemical shippers	P. Steijns	Sr. Manager Sabic
DB Schenker	A. Klompe	Director
Dry bulk shippers	M. Pelsma	Director EMO
EVO	M. Van der Kuil	Director
Port of Amsterdam	K. Overtoom	COO
Port of Rotterdam Authority	R. van der Plas	Rail Director
Keyrail	C. Tommel	Director
KNV	A. Toet	Director
Ministry of I&M	E. Bezem	Chairman / deputy director OVS (Public Transport and Rail)
ProRail	H. Thomassen	Director capacity allocation
SPL	W. Boevee	Member of SPL
The Eastern Netherlands	C. Bieze	Member of the Provincial Executive of Gelderland
The Southern Netherlands	R. van Heugten	Member of the Provincial Executive of Noord-Brabant
Programme Manager	T. Steenbeek	Oxalis



Third track in Germany



Annex to steering committee's advice to state secretary

Further details are available from the project team for the Third Track in Germany

8 October 2014



Ministerie van Infrastructuur en Milieu



Port of Amsterdam
port of partnerships



KEYRAIL

ProRail

During construction the Zevenaar border-crossing will have limited availability



Source: presently-known construction planning

Construction of third track

2015 <div>Cap: 40 trains / 24 hour-period</div>	Total of 17 weeks single track on Emmerich – Oberhausen section <ul style="list-style-type: none"> • week 17 to 26 Mon 5:00 to Fri 23:00 hours • week 34,35 and 44 to 50 continuous In addition 7 double track (long) weekends
18 April – 18 October 2016	Single track on Emmerich - Oberhausen section <div>Cap: 40 trains / 24 hour-period</div>
November 2016 - 2022 <div>Cap: 25 trains / 24 hour-period (night)</div>	<ul style="list-style-type: none"> • Every month <u>1 week</u> single track on Emmerich - Oberhausen section from Monday to Sunday • Every month two weekends single track 51 hours, and regularly during nights 4 to 8 hours double track on Emmerich - Oberhausen section • Every 2 months 1 weekend complete closure on Emmerich - Oberhausen section • 3 weeks a month the Betuweroute can be used unimpeded from Mon to Fri

In addition the introduction of the Basic Network and SWUNG may pose extra challenges

Objectives, constraints and starting points have been agreed on in the steering committee



Source: steering committee 22 May 2014

Ambitions and constraints

Common objectives	Unimpeded rail freight transport during construction of 3 rd track in Germany Impact on and along the track is transparent
Constraints	Within the statutory frameworks of the Basic Network and SWUNG
Starting points	<ul style="list-style-type: none">• Well-considered, transparent weighing of financial, economic and social interests (incl. safety)• Relevant parties are actively involved and make maximum efforts to achieve the shared goals• Room for adjustments to 'passenger transport' and measures concerning loss of revenues.

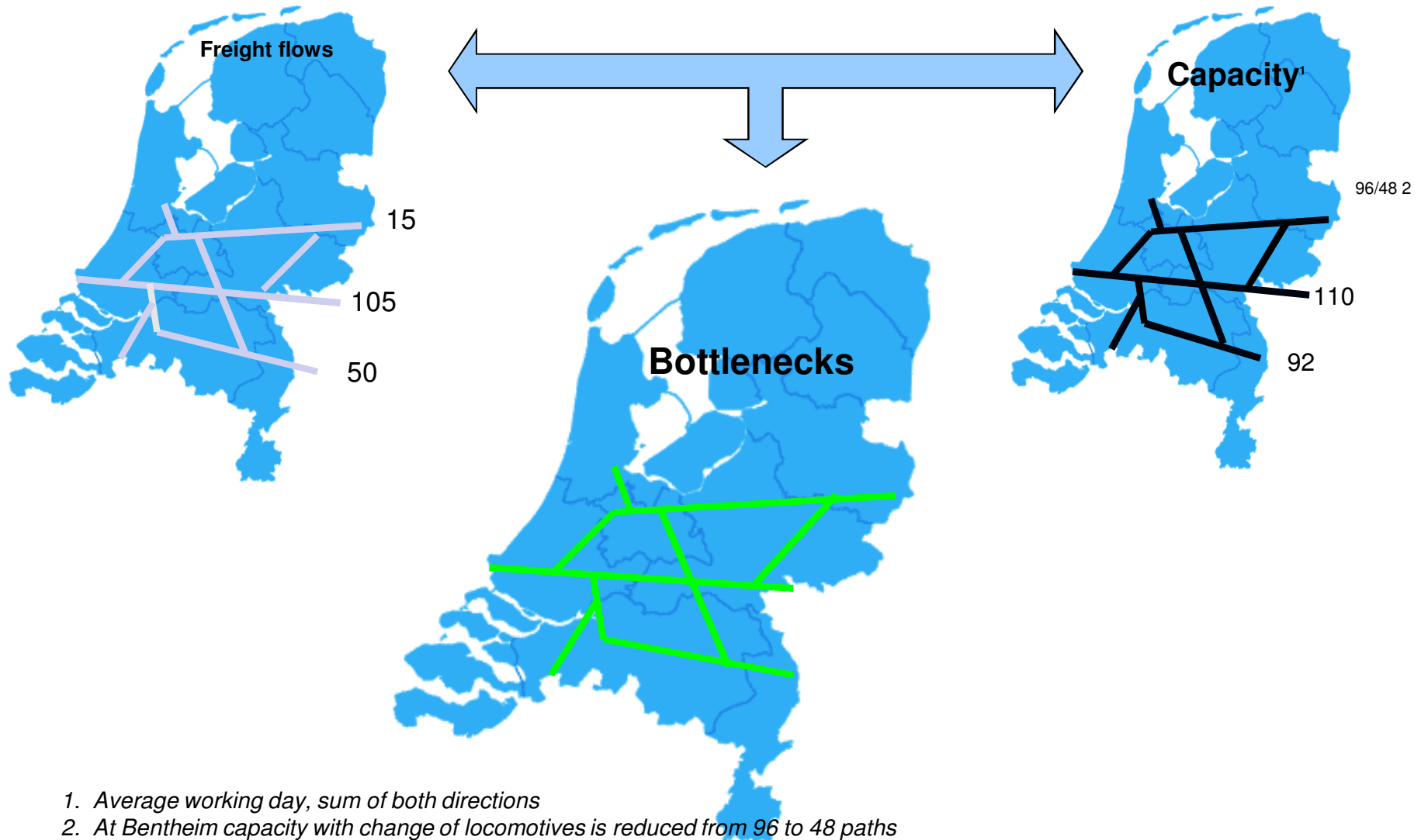
* Central and regional authorities, shippers, port authorities, operators, infrastructure managers

Maximize transport of dangerous substances on Betuweroute, also during construction!

In 2013 there are no bottlenecks



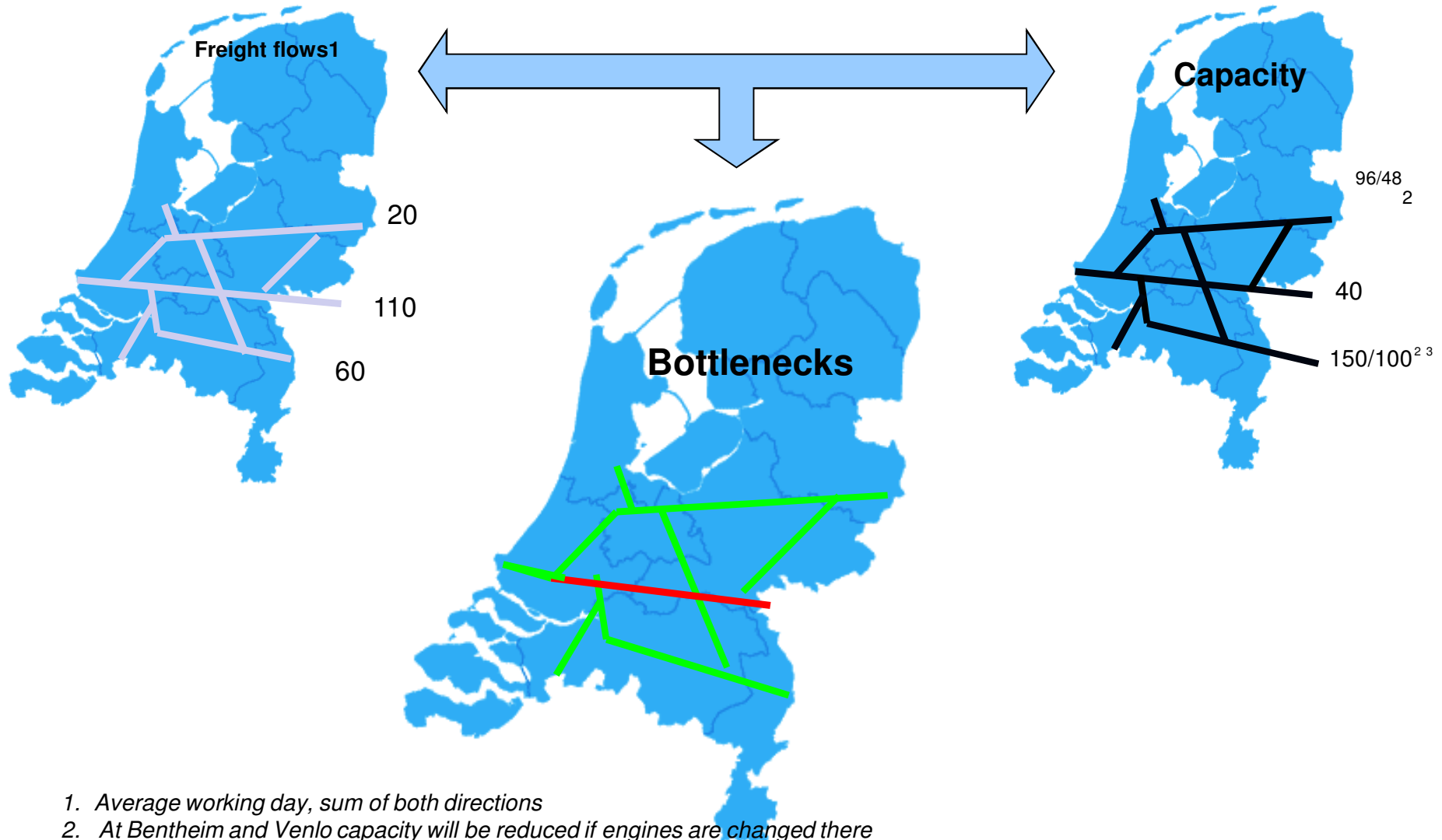
Challenge



Without rerouting there will be insufficient capacity on Emmerich – Oberhausen in 2016



Challenge

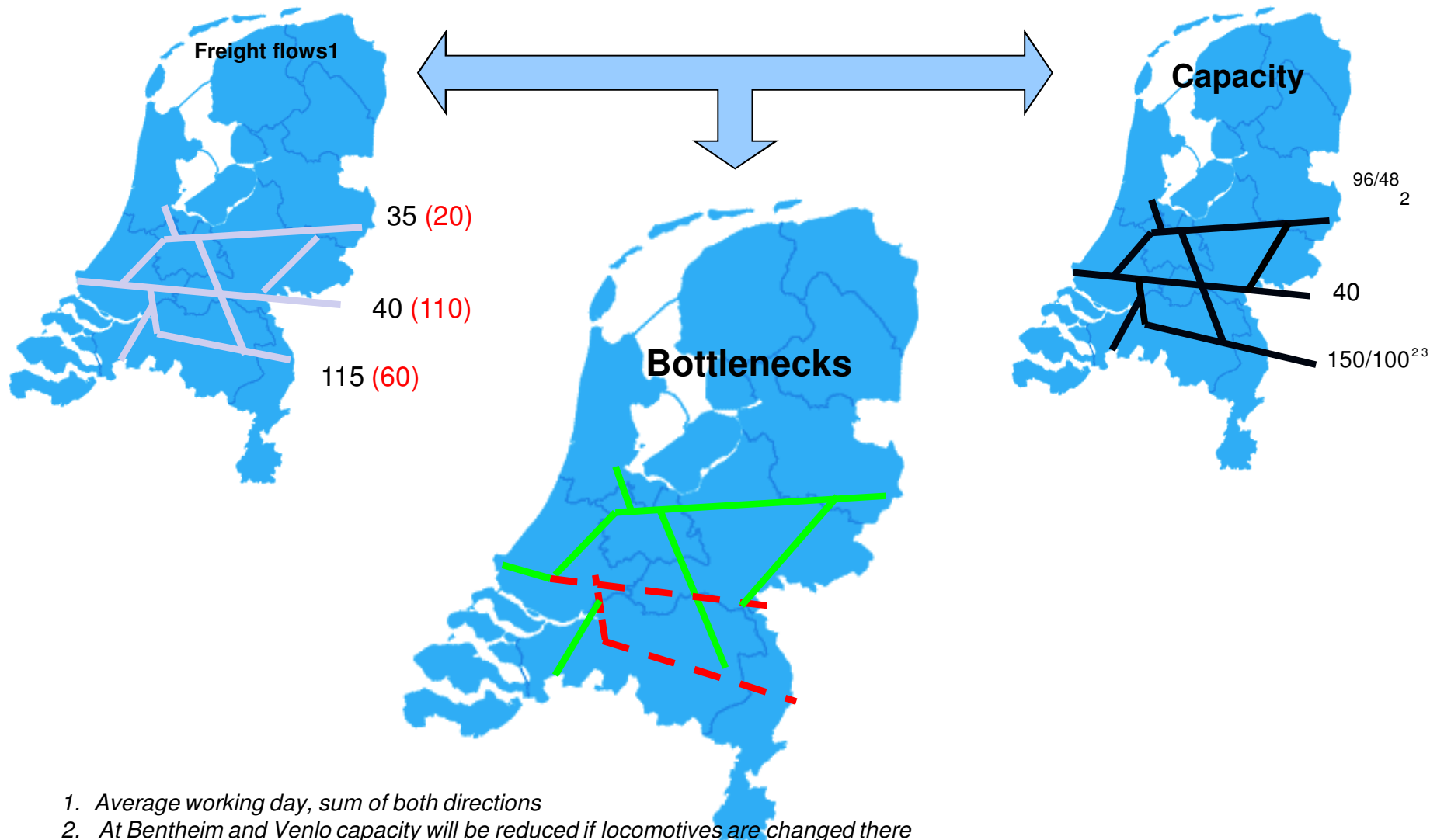


Rerouting will solve much of the capacity problem in 2016



Challenge

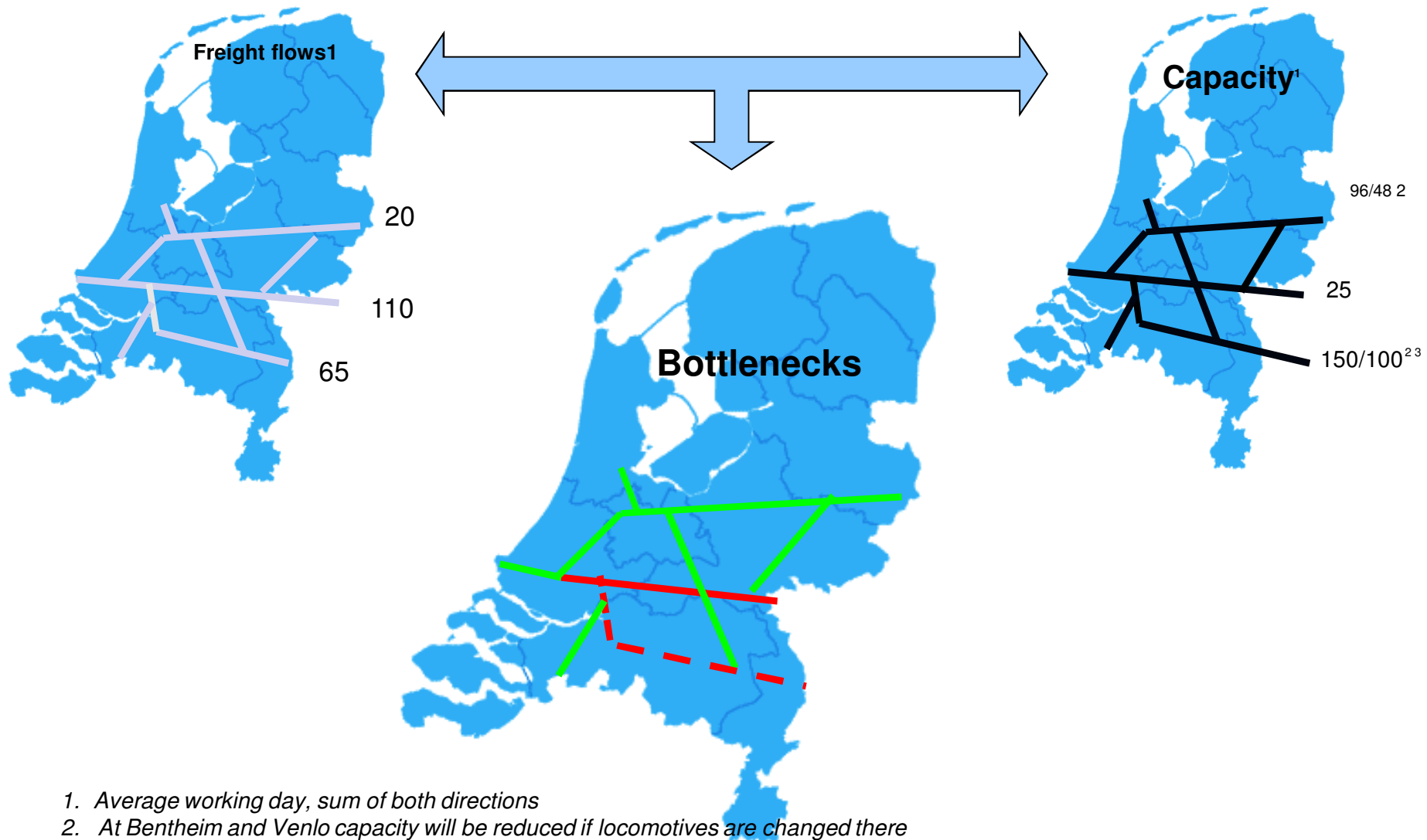
In red the freight flows without rerouting



From 2017 onwards the capacity problems on the Emmerich – Oberhausen section will increase ...



Challenge

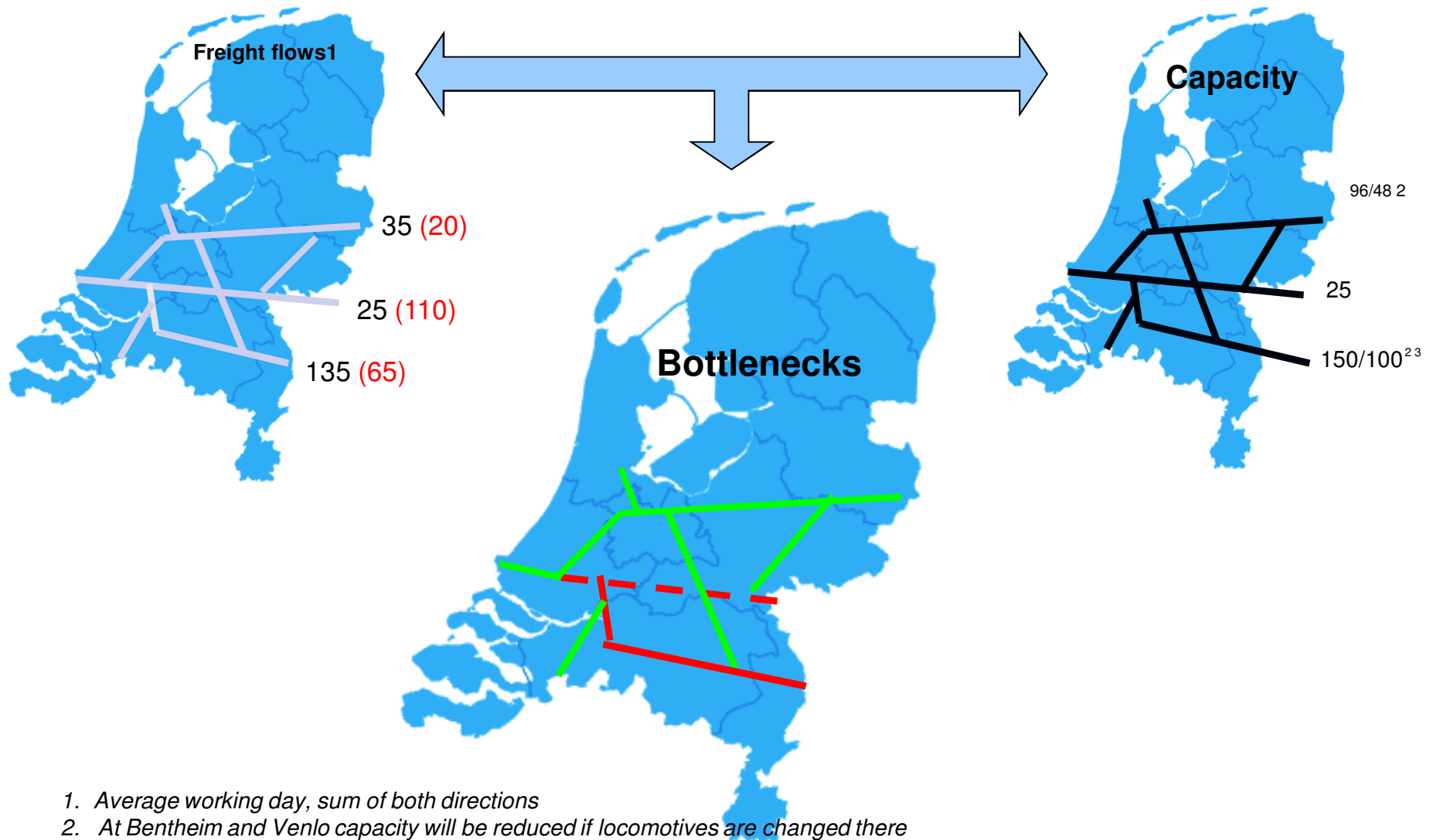


Even after rerouting additional measures will be necessary from 2017 onwards



Challenge

Freight flows without rerouting shown in red



Number of requested net freight paths per day, after rerouting



Based on 12.5% room for adjustments

Challenge

Border-crossing	Net requested freight paths per day in diversion period (sum of both directions; rounded off to fives)				
	2013	2016	2017	2020*	2022
Oldenzaal – Bad Bentheim	15	35	35	40	40
Zevenaar – Emmerich	105	40	25	25	25
Venlo – Kaldenkirchen	50	115	135	155	160
Heerlen – Herzogenrath **	0	PM	PM	PM	PM
Total Netherl'ds ⇌ Germany border	170	190	195	220	225

* based on growth forecast 'GG2020v12'

** was not used in 2013 for systematic rail freight, but may be an alternative for Venlo and can relieve Venlo in this way

Number of days a year that freight trains via Zevenaar and Venlo cannot be facilitated



With distribution over the year as in 2013 and 12.5% room for adjustments

Challenge

Year	Assuming RE 13 Venlo - Mönchengladbach	Alternative for 13 Venlo - Mönchengladbach	Comment
2016	6		
2017	104	0	
2020	150	17	Even with 0% room for adjustments capacity would be insufficient on 81 days (with RE 13)

Steering committee plans to implement a package of measures



Measures

1. The measures have been divided into:
 - a. Constraints
 - b. Rerouting
 - c. Capacity utilization
 - d. Other
2. The package of measures in outline:
 - is ambitious
 - Requires full effort of all parties involved
 - must lead to unimpeded rail freight transport during the construction period
 - requires continuous monitoring so that measures can be tightened or supplemented proactively to solve unexpected problems on and along the track

Proposed measures - constraints



balls indicate chance of success

Measures

<div>Constraint</div> <div> <div>Measures</div> </div>	Maximum of Basic Network substances via Betuweroute
	Give priority to Basic Network substances via Betuweroute in diversion periods
	Cluster Basic Network substances in number of UC trains via Betuweroute (partly in 2017 nighttime downtime slot, every fourth week)
	Bundle dangerous goods of intermodal operator on its trains via Betuweroute (especially category D4)
	Widen the nighttime slot (Emm - Obrh) for rail freight and create possibilities for daytime runs
<div>Constraint</div>	4 paths/hour/direction for rail freight transport on Brabant Route
<div>Measures</div>	Guarantee in Capacity Allocation Decree that there is a minimum service level of 4 freight paths per hour per direction on the Brabant Route, throughout the entire day
<div>Constraint</div>	2 paths/hour/direction for rail freight transport on Bentheim Route (Deventer – Oldenzaal)
<div>Measures</div>	Guarantee in Capacity Allocation Decree that there is a minimum service level of 2 freight paths per hour per direction on this route, throughout the entire day
<div>Constraint</div>	No maintenance schedule in 4 th week
<div>Measures</div>	In the recurring construction period (every '4 th week') no maintenance schedule on the Brabant Route, the Bentheim Route and the corresponding diversion routes

Proposed measures - rerouting



balls indicate chance of success

Measures

1	(Re)direct traffic in direction of Ruhr region and further south via Venlo
2	(Re)direct traffic in direction of Poland/Czech Republic/Scandinavia/North and East Germany via Bentheim
3	Do not direct flows from Belgium/Zeeland to Bad Bentheim via the Brabant Route.
4	Traffic via Herzogenrath
5	Traffic to Middle/South Germany via Bad Bentheim

Comments

- Measures 1-3 are given primary focus because they will make a major contribution
- Measure 4 will be examined further
- Measure 5 is a back-up measure: less realistic due to costs and turnaround times and contributes less

Proposed measures – increase capacity utilization %



Cohesive package of measures that must be implemented completely to be able to halve the room for adjustments

Measures

General	<ol style="list-style-type: none"> 1. Left track protection: in case of blockage on right track, left track cannot be fully used; DB Netze modifies left track protection between Kaldenkirchen and border, ProRail must do this between the border and Venlo 2. 'Grey' push/tow engine 24/7 available in Venlo
Halving the room for adjustments	<ul style="list-style-type: none"> • No stabling of rolling stock (passengers/goods) in centrally controlled area in Venlo • Do not allow marshalling (except for making head) in centrally controlled area in Venlo • Receive trains bound for Cabooter in Venlo directly in not centrally controlled area • Allow long stabling (minimum 1 hour and maximum 2 hours) only in not centrally controlled area • Install remote operation of local points in not centrally controlled area in Venlo • Registration system with current information on track occupancy in Venlo goods yard. • Traffic Control is given insight into correct and current train lengths for better/more efficient control and adjustments • Proactive adjustments by Traffic Control with regard to relieving Brabant Route/Venlo and buffering of freight trains • Freight operators return reserved paths in time • Buffer tracks at Venlo/Vierssen and Kijfhoek • Multi-system locomotives required for cross-border transport (except for local operations and Limburg) instead of changing locomotives at Venlo. Arrange via voluntary agreement/overload certificate; position of operators without multi-system at stake) • Blockage measure/handling strategy where goods are given priority over passenger transport outside passenger rush hours • Minimize head-making (locomotive on loop track) at Venlo (combined with utilization of Herzogenrath) (small chance) • Adjustment and planning 1) Betuweroute/Brabant Route internationally to Oberhausen/Viersen 2) All borders integrally • Do not allow use of 2 (or more) paths by 1 train in adjustment phase <i>(enforcement by ProRail)</i>

Proposed measures - other



Measures

1	Deploy alternative transport modalities for Venlo- Viersen-Hamm in diversion periods
2	Limit speeds on Brabant Route: freight paths at 80/85 km/h max; if necessary also adjust speed of passenger trains (possibly only in places where problems occur)
3	Give priority to noise reduction measures along the Brabant Route and Bentheim Route
4	Make border at Herzogenrath accessible to electrified freight freight transport without ATBNG (Dutch train protection system)
5	Give priority to low-noise trains on mixed network
6	Lift length restrictions in Grenzvereinbarung of DB Netze and ProRail (enable 740m) (restrictions on DB Netz side need further examination)

Comments

- Measure 1 will make major contribution
- Measure 2 potentially may also make a large contribution, but the chance of success is considered less high because of impact on total timetable; therefore needs further examination

Measures that will be examined further but which are not expected to have an effect in the short term



Measures

1	Traffic in direction of Italy via Belgium/Germany
2	Cancel RB Hengelo – Bielefeld (partially) or provide bus transport in diversion periods
3	Lengthen and increase loads on (coal) trains
4	Make maximum use of length of trains (570/650 m)
5	Composition of trains - length of trains (especially on the Brabant Route) maximum of 600 metres (or extend infrastructure; of better information provision in Traffic Control regarding train length, so that Traffic Control can make better/more efficient adjustments)
6	Modify / cancel passenger services (ICE and RB) on Oberhausen – Zevenaar section

Comments on measure:

- 1: not realistic (in years to come) due to large-scale work and border crossing that is already overburdened
- 2: not necessary, assuming there is sufficient capacity available via Bentheim
- 3: Not opportune (in years to come) in view of developments in Germany; and only limited effect
- 4: is done within railway companies on economic grounds
- 5: substantial negative financial and economic impact
- 6: unfeasible (in years to come) due to design of DB Netze timetable; but divert extra ICE trains via Venlo

All parties will have to make efforts to effectuate measures proposed



Overview in outline

Measures

Shippers / terminals	Carrier	ProRail	Ministry
<ul style="list-style-type: none"> Adjust / more flexible logistics model Adjust loading/unloading slots 	<ul style="list-style-type: none"> Adjust / more flexible logistics model Adjust UC model Trains in Basic Hourly Pattern paths Training, replanning of resources 	<ul style="list-style-type: none"> Adjust maintenance schedule Replan timetable Focus of implementing agency Noise measures Adjust track protection Enough cap not centrally controlled areas 	<ul style="list-style-type: none"> Adjust Capacity Allocation Decree for Brabant Route and Deventer - Oldenzaal Poss. temporary exemption <ul style="list-style-type: none"> SWUNG ceilings exceeding of Basic Network risk limit
<ul style="list-style-type: none"> Logistic cooperation with management and discipline Dangerous goods via Betuweroute 'rules of play' for capacity allocation in event of shortage Solution for extra costs in the chain 			

This could be cooperation agreement(s) in which the parties involved agree on issues

The transport of dangerous goods been tested against the Basic Network (wet Basisnet)



Environmental effects

- As a result of the starting points of rerouting the preferred transport option for dangerous goods is via Betuweroute/Emmerich;
- This will not be sufficient to facilitate the expected transport flow of dangerous goods
- Transport of dangerous goods is logistically possible to a certain extent via Bentheim, exceeding the Basic Network risk limit is no issue here.
- A remaining part of the transport of dangerous goods will take place via the Brabant Route; a problem arises here because of the low Basic Network risk margin on the Eindhoven - Venlo section
- The effects of a number of variants have been calculated for the Brabant Route to see what is possible
(related to measures aimed at routing maximum of Basic Network substances via Betuweroute)

The effects of a number of variants for the Brabant Route have been calculated



Environmental effects

1. Dangerous goods are also transported in tank wagons (train load, Unit Cargo) on the Betuweroute during every fourth week of the month, but this is not possible during the scheduled weekend line closures => a small part must still go via Brabant
2. Transport of dangerous goods in tank containers (intermodal) cannot be concentrated in a few trains; because of the Basic Network and the limited capacity they will be transported by road every fourth week => what if they are transported via Brabant Route after all?
3. There are only two destinations and one operator for dust category D4 in tank containers => what if this could be transported via the Betuweroute after all?
4. Suppose that the starting point of variant 1 proves not achievable => then a substantial part of the Unit Cargo transport will have to travel on the Brabant Route

In the sequence of scenario 1 - 3 - 2 - 4 there is a consistent increase in the transport of dangerous goods over the Brabant Route

Calculations made in accordance with standard Basic Network methodology based on transport realized in 2012/13 plus growth percentage

Results relate to location-specific risks (LR) and group risks (GR)

Overview of environmental effects of dangerous goods



Environmental effects

Assessment of Location-specific Risk (LR) and Group Risk (GR)

Route	var. 1	var. 2	var. 3	var. 4
Kijfhoek - Zevenb.hoek conn.				
Zevenb.hoek conn. - Breda conn.				
Breda conn. - Tilburg conn.				
Tilburg conn. - Eindhoven conn.				
Eindhoven conn. - Venlo				
Venlo - Venlo east				
Venlo east - Kaldenkirchen				
LR: no increase in the 10^{-6} risk contour; GR: no or minor increase in the 10^{-7} / 10^{-8} risk contour, GR remains under Orientation Value and/or no increase of GR in Breda, Tilburg, Eindhoven				
LR: small increase in the 10^{-6} risk contour; GR: no or minor increase in the 10^{-7} / 10^{-8} risk contour, GR remains under Orientation Value and/or no increase of GR in Breda, Tilburg, Eindhoven				
LR: no increase in the 10^{-6} risk contour; GR: increase in Breda, Tilburg, Eindhoven				

The noise impact has been tested with new calculations based on the current starting points (SWUNG)



Environmental effects

- The calculations were made for Brabant Route, IJssel Line and Deventer - Hengelo - Oldenzaal
- Based on 50% low-noise rolling stock and diversion of 25% of the freight trains 2017
- Assuming a 24-hour division of 55% – 20%- 25%, which is expected to be realized
- Based on forecasts according to annual growth steps in accordance with the forecast for 2020 (GG: average growth)
- The noise impact is calculated with Soundcheck and has been tested against noise production ceiling values

Except for some locally exceeded limits the noise production ceiling values are complied with



Environmental effects

- In general the noise production ceiling values are complied with
- Some locally exceeded limits require further examination:
 - exceeded limit by a single point are mostly the result of the calculation method
 - exceeded limits at Breda, Boxtel and Venlo
 - exceeded limits Hengelo – Oldenzaal and at Almelo de Riet
- Additional results will be supplied for Kijfhoek – Zevenbergsche hoek (based on earlier analyses no problems are expected here)
- Extra nuisance occurs as a result of periodic increase of the noise impact
- For this reason it is proposed limiting nuisance by prioritizing diversion routes in Long-term Noise Reduction Programme (*Meerjarenprogramma Geluidsanering – MJPG*)

Safety of Level Crossings



Environmental effects

The increase in train frequencies on the Brabant Route results in:

- no unsafe situations at level crossings
- no increase in risk points, with 2 exceptions for 2 level pedestrian crossings
- no train frequencies of more than 26 per hour in the busiest hour
- no systematic railway barrier closure times longer than 5 minutes per closure

The increase of the train frequencies on the routes in the direction of Oldenzaal - Bentheim was examined in connection with the environmental impact assessment for goods routing in East Netherlands (*MER Goederenrouting Oost Nederland*):

- here a slight increase of railway barrier closure times was expected
- at the time a high-growth scenario was assumed
- since the number of trains are now <70% no significant change is expected

Railway barrier closure times have consequences for arrival times of emergency services and will be addressed in the communication about safety risks

Province of Brabant will provide a survey for level crossings along the Brabant Route, as proposed for the National Level Crossings Improvement Programme (*Landelijk verbeterprogramma Overwegen - LVO*)

The effect of rerouting on no vibrations is being examined further



Environmental effects

- There is no statutory framework for the assessment of soil vibrations as a result of rail transport.
- At the request of the Ministry of Infrastructure and the Environment calculations are now being made on the instructions of ProRail, in order to analyse the effects of the diversions