



FINAL IMPLEMENTATION REPORT

(D.T2.10.5)

Slovakia

30th November 2018

A. Overall Pilot Approach

a. Pilot Phase Summary

In pilot projects, we deal with transports that have the potential to move from road to combined transport. We have been considering transports at medium and long distances using terminals in Slovakia, the Czech Republic and Austria. The problem is the lack of lines for the transport of intermodal loading units other than maritime containers.

In some large companies there is a great potential but a poor road network to the nearest terminals. The benefit of the solution is the higher permissible vehicle gross combination mass of 44 tons, which is sometimes not allowed by the road network. The launch of a new terminal in Zilina, which could translate semi-trailers in northern Slovakia, will also be launched. Connections from the combined terminal to / from the terminal in the port of Bratislava are developing.

b. Pilot Phase Impact

The chemical industry is a very specific type of industry, and its requirements for the transport and storage of chemicals are also specific. It is very important for the Slovak Republic to preserve and increase the share of transports from road to rail even for products of chemical industry.

Combined transport terminals in Slovakia are mainly focused on maritime containers such as the hinterland port service. They only have the possibility of transshipment of chemical products/dangerous substances. The storage of dangerous substances is not allowed mainly because of the protection of waters sources. Increased safety requirements are required not only for the storage of chemical cargo, but the necessity is to ensure sufficient safety and security during the transshipment.



B. Participating companies

Name of company	Profile (products/services)	SME or large enterprise	Location (subject to pilot)
GreenChem	Trading and production of Ad Blue, trading of AM urea per Europe	Middle	Bratislava, all Europe
Duslo	Production of ammonia, fertilizers, urea, Ad Blue, rubber additives, adhesives,	Large	Sala, Bratislava, Strazske

C. Transport routes addressed

Chemical company addressed	Number of meetings	Shipped materials or goods	Quantity (estimate; per month)	Logistic service provider(s)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)
GreenChem	2	AM urea	500	Freight forwarding	England Glasgow	Road 2273 km	70 t
GreenChem	2	AM urea	500	Freight forwarding	Benelux Breda	Road 1268 km	39 t
Duslo(Shell)	3	Ketones	300	Producers	Benelux Rotterdam	Road 1320 km	25 t
Duslo	3	AM urea	5.000	Producers	France Lyon	Road 1327 km	411 t
Duslo	2	AM urea	1.500	Producers	Spain Barcelona	Road 1963 km	182 t
Duslo	3	AM urea	2.400	Producers	England Yorkshire	Road 1959 km	291 t
Duslo	2	AM urea	780	Producers	Spain Caldas de Reis	Road 2827 km	136 t
Duslo	3	AM urea	1.300	Producers	Portugal Gafanha da Nazare	Road 2868 km	231 t



Duslo, a.s. is one of the most important chemical industry companies in Slovakia. Throughout its history, it has grown into a well-established producer of fertilizers with European significance and a global supplier of rubber chemicals. Duslo, a.s. is a part of the AGROFERT group, international holding of companies that operate in chemical, agricultural, food production, forestry, lumber, land and transport technology, renewable resources and media sectors.



Facility of DUSLO a.s.

GreenChem is one of the largest European suppliers of reduction agent for abatement of nitric oxides (NO_x) from flue gases. It was founded in Breda (The Netherlands) in 2003 and began as a pioneer in NO_x reduction in automotive sector with the product AdBlue.

This is a special urea solution that contains 40% automotive urea or technical urea. AUS40 made from automotive grade urea can be used in heavy duty SCR engines and is especially suitable for NO_x reduction in industrial combustion plants with SCR NO_x emissions control technology. GreenChem can deliver urea water solutions in various packaging including road and rail tank vehicles and tank containers.



D. Planned and Realized Multimodal Shifts

Route 1

(England, Glasgow)

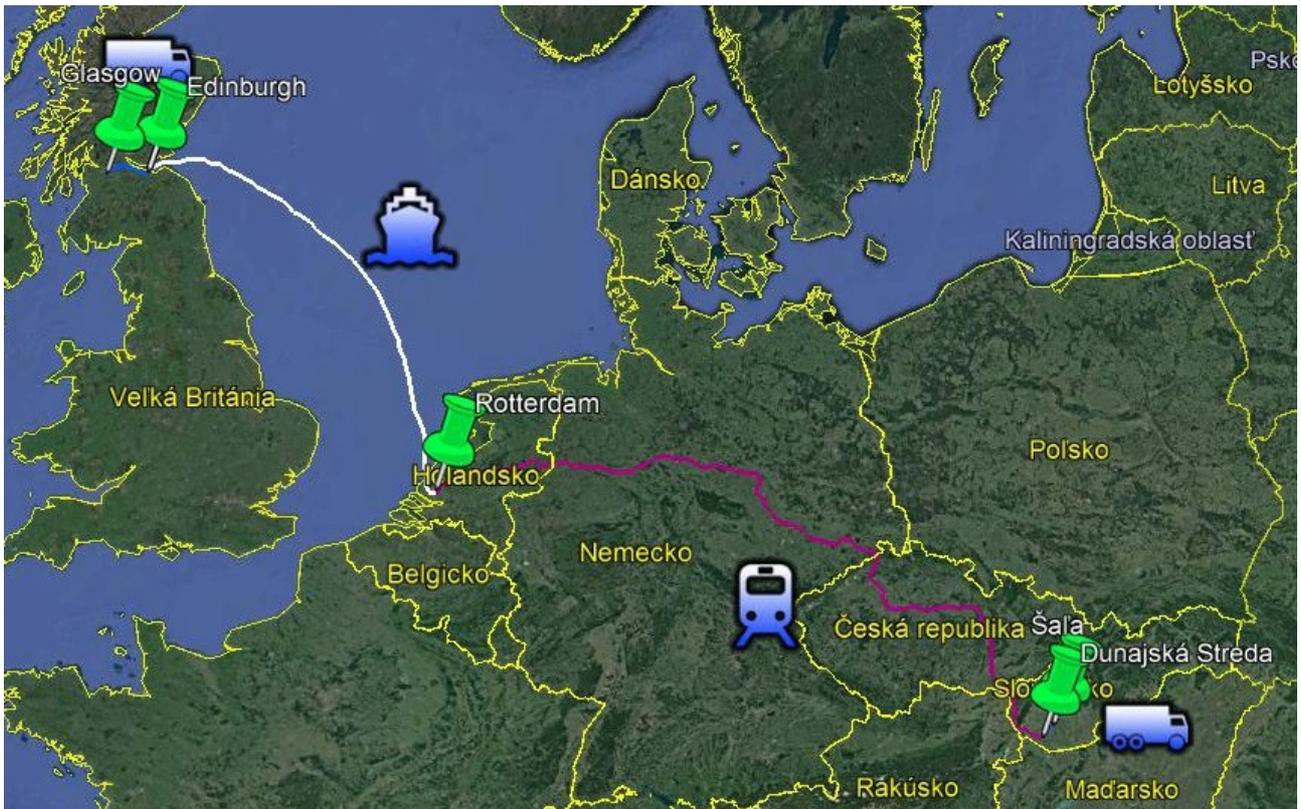
Chemical company addressed	Shipped materials or goods	Quantity (estimate; per month)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)	Modal split (after pilot launch)	CO2 emitted (per month; calculated)
GreenChem	AM urea	500 t	England, Glasgow	Road 2273 km	70 t	Road 37 km, Rail 1284 km, Sea 683 km Road 75 km	1+14+5+2= 22 t

Road (Duslo Šala - Dunajská Streda: 37 km),

Rail (Dunajská Streda - Rotterdam: 1284 km)

Sea (Rotterdam - Edinburg: 683 km),

Road (Edinburg - Glasgow: 75 km).



The first route is transport of 500 t of AM urea to Glasgow in England from the first pilot phase midterm report. AM urea was transported only by road from Slovakia to England with 70 tonnes of CO₂ before pilot launch.

After pilot launch modal split was differed between road (from Šaľa to Dunajská Streda terminal - 37 km), rail (from this terminal to Rotterdam 1294 km), sea (from Rotterdam to Edinburgh - 683 km) and the road to Glasgow (75 km).

We use a CO₂ calculator and average savings are 48 tonnes of CO₂.

Result of the Pilot (by 31 November 2018)

- proposed transport reorganisation discarded because found solutions are not competitive
- proposed transport reorganisation discarded because of lacking logistic service providers or infrastructures
- proposed transport reorganisation under evaluation by company decision-makers
- proposed transport reorganisation tested under real-life conditions (__x times)
- proposed transport reorganisation effectively approved
- other: _____



Success Factors

The foundation of the Just in Time logistics system is that the goods should not be tranship. The principle is to ensure that individual material deliveries are made available for production to be available exactly at the time they are to be used in the production process. However, the application of this system requires very high demands on the exact coordination of all related processes and flows.

It was not possible to maintain a Just In Time system for carriages in articulated vehicle combinations because of problems for truckloads to England, it was not possible to maintain a Just in Time system for problems in ports, with ferries and traffic jams on road also.

Consequently, transports are carried out in 45' containers via the intermodal operator. The containers are delivered to the customer at the agreed time from the multimodal terminal. The advantage is the transport of 25 big-bags compared to 24 big-bags in the semi-trailers which means 1 tonne more per loading unit or per 1 carriage.

Almost 100% of commodity shipments to England were shifted to multimodal during the year 2018. We consider the solution from the pilot project is a last solution.

Use of Tool-Box

Tool-Box Element	Who used this tool-box element? (project representatives/logistics service provider/chemical company representatives)	How was the element evaluated? (scale: not useful, somewhat useful, very useful, not used)
IT-Visualization	project representatives, chemical company representatives	somewhat useful
Consulting services	chemical company representatives	very useful
Planning Guideline	project representatives, chemical company representatives	somewhat useful
CO2-Calculator	project representatives, chemical company representatives	very useful

COMMUNICATION

Are involved stakeholders interested to share their pilot experiences for project communication purposes (e.g. video clip, written interview for newflash, website)? If yes please give the contact information:

Information about the project and pilot projects has been published on a double-page in the journal Transport and Logistics, 11/2018. We also extend the information through the electronic version of the ZCHFP SR Newsletter as well as the ZCHFP SR website.



Route 2

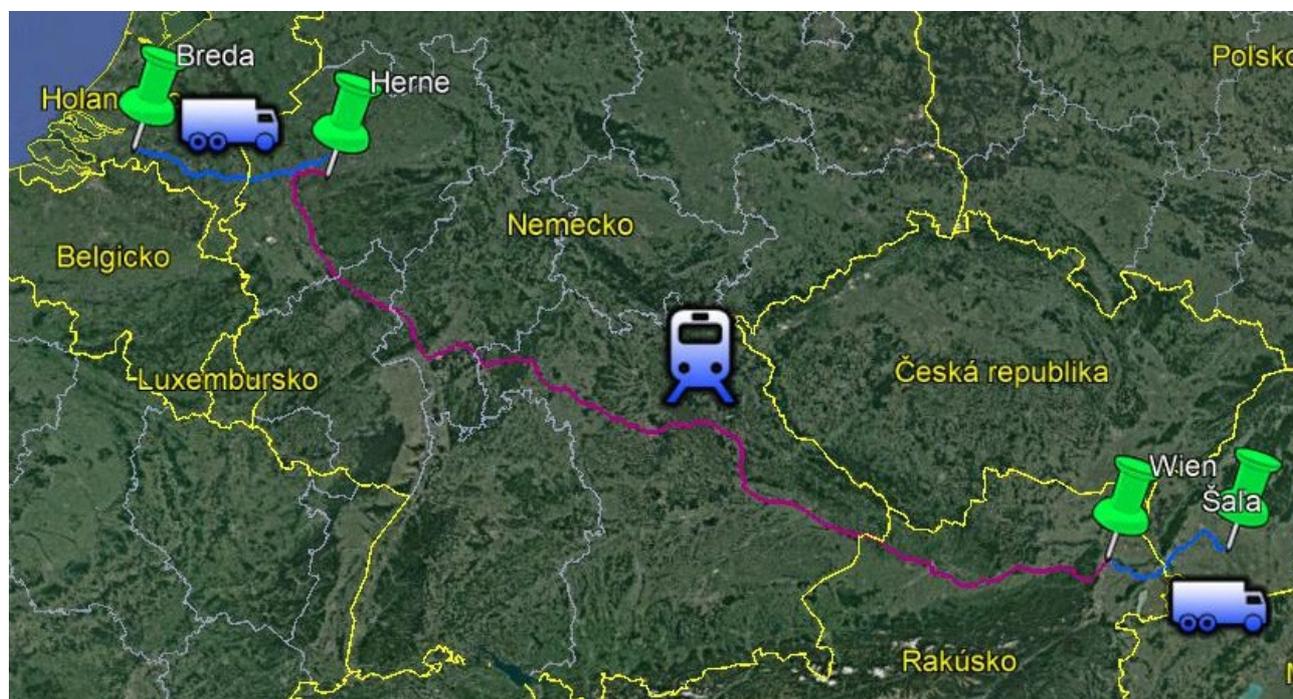
(Benelux, Breda)

Chemical company addressed	Shipped materials or goods	Quantity (estimate; per month)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)	Modal split (after pilot launch)	CO2 emitted (per month; calculated)
GreenChem	AM urea	500	Benelux, Netherlands, Breda	Road 1268 km	39 t	Road 165 km Rail 966 km, Road 126 km	5+ 11+4 = 20 t

Road: (Šaľa - Viena 165 km)

Rail: (Wien - Herne: 966 km)

Road: (Herne - Breda: 126 km)



The second route is transport 500 t of AM urea to Breda in Netherlands from the first pilot phase midterm report. AM urea was transported only by road from Slovakia to Benelux with 39 tonnes of CO2 before pilot launch.

After pilot launch modal split was differed between road (from Šaľa to Wien terminal - 165 km), rail (from Wien to Herne terminal 966 km) and road (from this terminal to Breda 126 km).



We use a CO2 calculator and average savings are 19 tonnes of CO2.

Result of the Pilot (by 31 November 2018)*

- proposed transport reorganisation discarded because found solutions are not competitive
- proposed transport reorganisation discarded because of lacking logistic service providers or infrastructures
- proposed transport reorganisation under evaluation by company decision-makers
- proposed transport reorganisation tested under real-life conditions (__x times)
- proposed transport reorganisation effectively approved
- other: _____

Success Factors

The main advantage is that portable semitrailers are delivery direct from terminal to customer with Just in time system. Logistics flows are organized to minimize transport and storage costs.

Capacity of one semitrailers is 26 t against 24 t of road truck. This advantage increase affectivity of carriages and saves the costs.

Almost 100% of commodity shipments to Benelux were shifted to multimodal during the year 2018. We consider the solution from the pilot project is a last and final solution.

Use of Tool-Box

Tool-Box Element	Who used this tool-box element? (project representatives/logistics service provider/chemical company representatives)	How was the element evaluated? (scale: not useful, somewhat useful, very useful, not used)
IT-Visualization	project representatives, chemical company representatives	somewhat useful
Consulting services	chemical company representatives	very useful
Planning Guideline	project representatives , chemical company representatives	somewhat useful
CO2-Calculator	project representatives, chemical company representatives	very useful



COMMUNICATION

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No they do not want to share their pilot experiences for project communication.

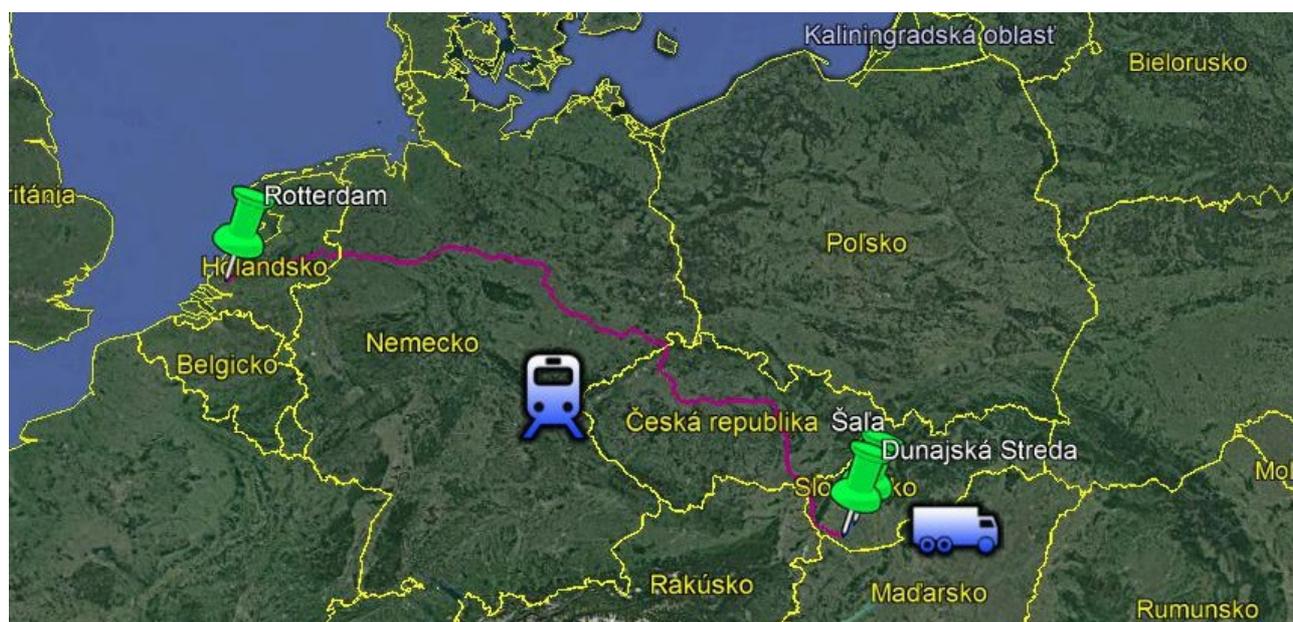
Route 3

(Benelux, Rotterdam)

Chemical company addressed	Shipped materials or goods	Quantity (estimate; per month)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)	Modal split (after pilot launch)	CO2 emitted (per month; calculated)
Duslo(Shell)	Ketones	300	Benelux Rotterdam	Road 1320 km	25 t	Rail 1284 km Road 37 km	9 + 1 = 10 t

Rail: Rotterdam - Dunajská Streda (1284 km)

Road: Dunajská Streda - Šaľa (37 km)



The third route is import transport 300 t of Kettones from Rotterdam in Netherlands from the first pilot phase midterm report. Kettones were transported only by road from Benelux to Slovakia with 25 tonnes of CO2 before pilot launch.

After pilot launch modal split was differed between rail (from Rotterdam to Dunajská Streda terminal - 1284 km) and road (from this terminal to Šaľa - 37 km).

We used a CO2 calculator and average savings are 15 tonnes of CO2.



Result of the Pilot (by 31 August 2018)*

- proposed transport reorganisation discarded because found solutions are not competitive
- proposed transport reorganisation discarded because of lacking logistic service providers or infrastructures
- proposed transport reorganisation under evaluation by company decision-makers
- proposed transport reorganisation tested under real-life conditions (__x times)
- proposed transport reorganisation effectively approved
- other: _____

Success Factors

From your knowledge, which factors will be decisive for an effective transport reorganisation?

Transport of ketones from Benelux was shifted from road to combined transport using of a direct link train from Rotterdam via the Metrans operator. Tank containers are transported by semi-trailer vehicle combination from the Dunajska Streda terminal to Saľa.

From your knowledge, what are the main arguments against a more multimodal transport organisation?

Almost 100% of commodity shipments to Benelux were shifted to multimodal during the year 2018. We consider the solution from the pilot project is the final solution.

Use of Tool-Box

Tool-Box Element	Who used this tool-box element? (project representatives/logistics service provider/chemical company representatives)	How was the element evaluated? (scale: not useful, somewhat useful, very useful, not used)
IT-Visualization	project representatives, chemical company representatives	somewhat useful
Consulting services	chemical company representatives	very useful
Planning Guideline	project representatives, chemical company representatives	very useful
CO2-Calculator	project representatives, chemical company representatives	very useful



COMMUNICATION

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Route 4

(France, Lyon)

Chemical company addressed	Shipped materials or goods	Quantity (estimate; per month)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)	Modal split (after pilot launch)	CO2 emitted (per month; calculated)
Duslo	AM urea	5000	France Lyon	Road 1327 km	411	Rail	

Result of the Pilot (by 31 November 2018)

- proposed transport reorganisation discarded because found solutions are not competitive
- proposed transport reorganisation discarded because of lacking logistic service providers or infrastructures
- proposed transport reorganisation under evaluation by company decision-makers
- proposed transport reorganisation tested under real-life conditions (__x times)
- proposed transport reorganisation effectively approved
- other: _____

Success Factors

Chemical company is working on alternative direct rail transports by large-capacity wagons Habbilns loaded directly in facilities of Duslo a.s. and carried to destination. This would solve the issue of lack of transport units and intermodal rail connections for different destinations.

The chemical company is interested in the carriage of semitrailers by trains, but there is a lack of direct connection because of insufficient network of terminals in France. Railroad strikes also slow intermodal line preparation.



Use of Tool-Box

Tool-Box Element	Who used this tool-box element? (project representatives/logistics service provider/chemical company representatives)	How was the element evaluated? (scale: not useful, somewhat useful, very useful, not used)
IT-Visualization	project representatives, chemical company representatives	somewhat useful
Consulting services	chemical company representatives	very useful
Planning Guideline Plánovač trasy	project representatives, chemical company representatives	somewhat useful
CO ₂ -Calculator	project representatives, chemical company representatives	very useful

COMMUNICATION

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Route 5

(Spain, Barcelona)

Chemical company addressed	Shipped materials or goods	Quantity (estimate; per month)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)	Modal split (after pilot launch)	CO2 emitted (per month; calculated)
Duslo	AM urea	1500	Spain Barcelona	Road 1963 km	182	Rail	

Result of the Pilot (by 31 November 2018)

- proposed transport reorganisation discarded because found solutions are not competitive
- proposed transport reorganisation discarded because of lacking logistic service providers or infrastructures
- proposed transport reorganisation under evaluation by company decision-makers
- proposed transport reorganisation tested under real-life conditions (___x times)
- proposed transport reorganisation effectively approved
- other: _____

Success Factors

Chemical company is working on alternative direct rail transports by large-capacity wagons Habbilns loaded directly in facilities of Duslo a.s. and carried to Spain. This would solve the issue of lack of transport units and intermodal rail connections for different destinations.

The chemical company is interested in the carriage of semitrailers by trains, but there is a lack of direct connection because of insufficient network of terminals in France. Railroad strikes also slow intermodal line preparation.

Transports to Spain are also complicated due to transshipment at the Spanish border. This can be solved by the newly developed wagon Sggmrss 90' made in Tatravagonka Poprad. The wagon is designed for operation between railways with normal track gauge and Spanish and Portuguese railways with wide track gauge.



Use of Tool-Box

Tool-Box Element	Who used this tool-box element? (project representatives/logistics service provider/chemical company representatives)	How was the element evaluated? (scale: not useful, somewhat useful, very useful, not used)
IT-Visualization	project representatives, chemical company representatives	somewhat useful
Consulting services	chemical company representatives	very useful
Planning Guideline	project representatives, chemical company representatives	somewhat useful
CO2-Calculator	project representatives, chemical company representatives	very useful

COMMUNICATION

Are involved stakeholders interested to share their pilot experiences for project communication purposes (e.g. video clip, written interview for newflash, website)? If yes please give the contact information:

We are in contact with DB Schenker company (member of ZCHFP SR) and cooperate to use the connection to Perpignan, important point for transport to Spain and Portugal. We offer this obtained information to other ZCHFP SR members in organizing the transport of products on the Iberian peninsula.



Kombinierte Verkehr Györ - Perpignan



Transport von Kranbaren Trailers

DB Cargo Logistics sichert Umkranung und Transport

Fahrplan:

13 DB Cargo AG





Route 6

(England, Yorkshire)

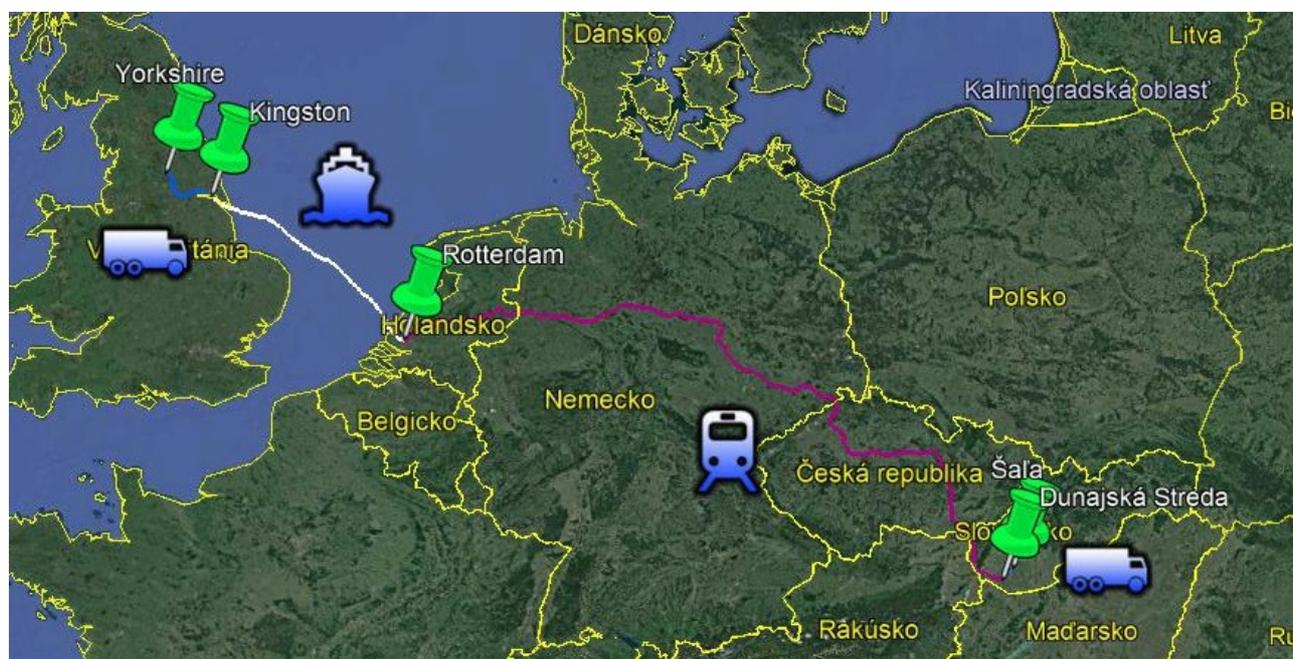
Chemical company addressed	Shipped materials or goods	Quantity (estimate; per month)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)	Modal split (after pilot launch)	CO2 emitted (per month; calculated)
Duslo	AM urea	2.400	England Yorkshire	Road 1959	292	Road 37 km, Rail 1284 km, Sea 338 km Road 115 km	6 + 68 + 13 + 17 = 104 t

Road: Šaľa - Dunajská Streda (37 km),

Rail: Dunajská Streda - Rotterdam (1284 km)

Sea: Rotterdam - Kingston (338 km)

Road: Kingston - Yorkshire (115 km)





The next route is transport 2.400 t of AM urea to Yorkshire in England from the first pilot phase midterm report. AM urea was transported only by road from Slovakia to England with 292 tonnes of CO2 before pilot launch.

After pilot launch modal split was differed between road (from Šaľa to Dunajská Streda - 37 km), rail (from Dunajská Streda terminal to Rotterdam - 1284 km), sea (from this terminal to Kingston - 338 km) and road (from Kingston to Yorkshire - 115 km).

We used a CO2 calculator and average savings are 188 tonnes of CO2.

Result of the Pilot (by 31 November 2018)

- proposed transport reorganisation discarded because found solutions are not competitive
- proposed transport reorganisation discarded because of lacking logistic service providers or infrastructures
- proposed transport reorganisation under evaluation by company decision-makers
- proposed transport reorganisation tested under real-life conditions (___x times)
- proposed transport reorganisation effectively approved
- other: _____

Success Factors

The foundation of the Just in Time logistics system is that the goods should not be tranship. The principle is to ensure that individual material deliveries are made available for production to be available exactly at the time they are to be used in the production process. However, the application of this system requires very high demands on the exact coordination of all related processes and flows.

It was not possible to maintain a Just In Time system for carriages in articulated vehicle combinations because of problems for truckloads to England, it was not possible to maintain a Just in Time system for problems in ports, with ferries and traffic jams on road also.

Consequently, transports are carried out in 45' containers via the intermodal operator. The containers are delivered to the customer at the agreed time from the multimodal terminal. The advantage is the transport of 25 big-bags compared to 24 big-bags in the semi-trailers which means 1 tonne more per loading unit or per 1 carriage.

Almost 100% of commodity shipments to England were shifted to multimodal during the year 2018. We consider the solution from the pilot project is the final solution.

Using multimodal transport can be a solution to the challenges of the expected Brexite next year. We anticipate delays in the customs procedures of trucks in embarkation ferry ports. Transport could be accelerated by the use of 45'containers as a replacement for semitrailers.



Use of Tool-Box

Tool-Box Element	Who used this tool-box element? (project representatives/logistics service provider/chemical company representatives)	How was the element evaluated? (scale: not useful, somewhat useful, very useful, not used)
IT-Visualization	project representatives, chemical company representatives	somewhat useful
Consulting services	chemical company representatives	very useful
Planning Guideline	project representatives, chemical company representatives	somewhat useful
CO2-Calculator	project representatives, chemical company representatives	very useful

COMMUNICATION

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Route 7

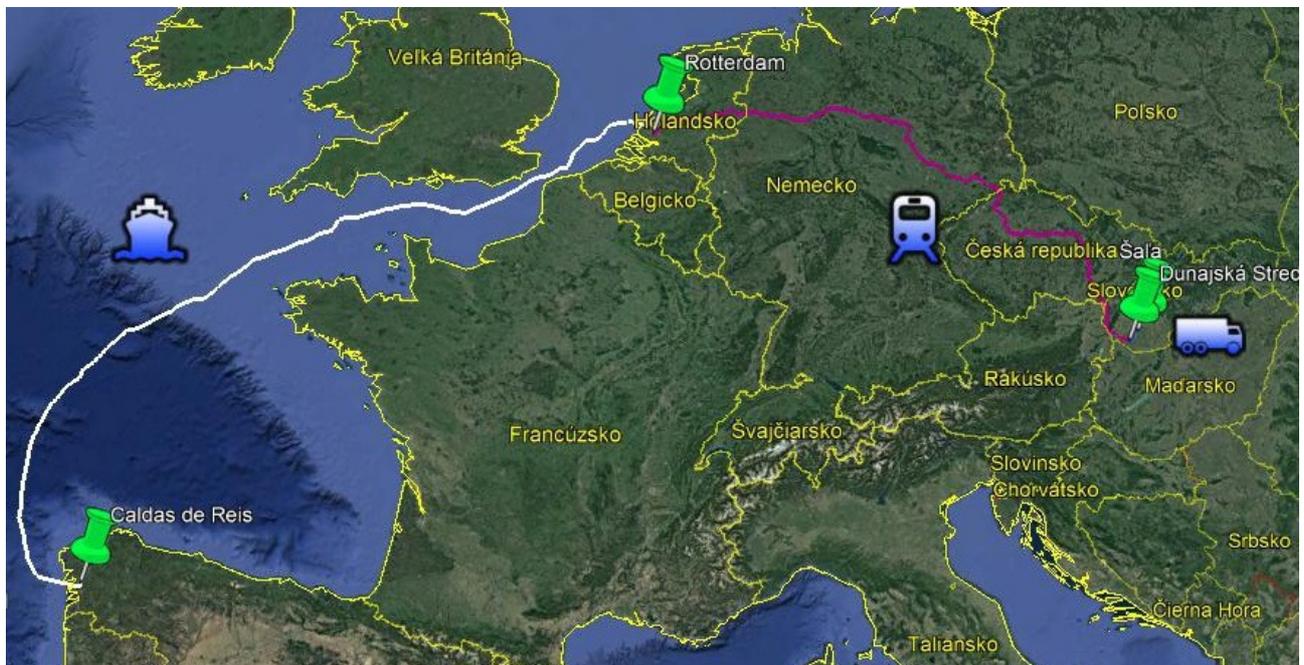
(Spain, Caldas de Reis)

Chemical company addressed	Shipped materials or goods	Quantity (estimate; per month)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)	Modal split (after pilot launch)	CO2 emitted (per month; calculated)
Duslo	AM urea	390 t	Spain, Caldas de Reis	Road 2827 km	68 t	Road 37 km, Rail 1284 km, Sea: 1800 km	1 +11 + 12 = 24 t

Road: Šaľa - Dunajská Streda (37 km),

Rail: Dunajská Streda - Rotterdam (1284 km),

Sea: Rotterdam - Caldas de Reis (1.800 km).



Next route is transport 390 t of AM urea to Caldas de Reis in Spain from the first pilot phase midterm report. AM urea was transported only by road from Slovakia to Spain with 68 tonnes of CO2 before pilot launch.

After pilot launch modal split was differed between road (from Šaľa to Dunajská Streda - 37 km), rail (from Dunajská Streda terminal to Rotterdam - 1284 km) and sea (from this terminal to Caldas de Reis - 1800 km). We use a CO2 calculator and average savings are 44 tonnes of CO2.



Result of the Pilot (by 31 November 2018)

- proposed transport reorganisation discarded because found solutions are not competitive
- proposed transport reorganisation discarded because of lacking logistic service providers or infrastructures
- proposed transport reorganisation under evaluation by company decision-makers
- proposed transport reorganisation tested under real-life conditions (__x times)
- proposed transport reorganisation effectively approved
- other: _____

Success Factors

Transports are carried out in 45' containers via the intermodal operator. The containers are delivered to the customer at the agreed time from the multimodal terminal. The advantage is the transport of 25 big-bags compared to 24 big-bags in the semi-trailers which means 1 tonne more per loading unit or per 1 carriage.

Almost 100% of commodity shipments to west Spain were shifted to multimodal during the year 2018. We consider that the solution from the pilot project is the final solution.

Use of Tool-Box

Tool-Box Element	Who used this tool-box element? (project representatives/logistics service provider/chemical company representatives)	How was the element evaluated? (scale: not useful, somewhat useful, very useful, not used)
IT-Visualization	chemical company representatives	somewhat useful
Consulting services	project representatives, chemical company representatives	very useful
Planning Guideline	project representatives, chemical company representatives	very useful
CO2-Calculator	project representatives, chemical company representatives	very useful



COMMUNICATION

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No they do not want to share their pilot experiences for project communication.



Route 8

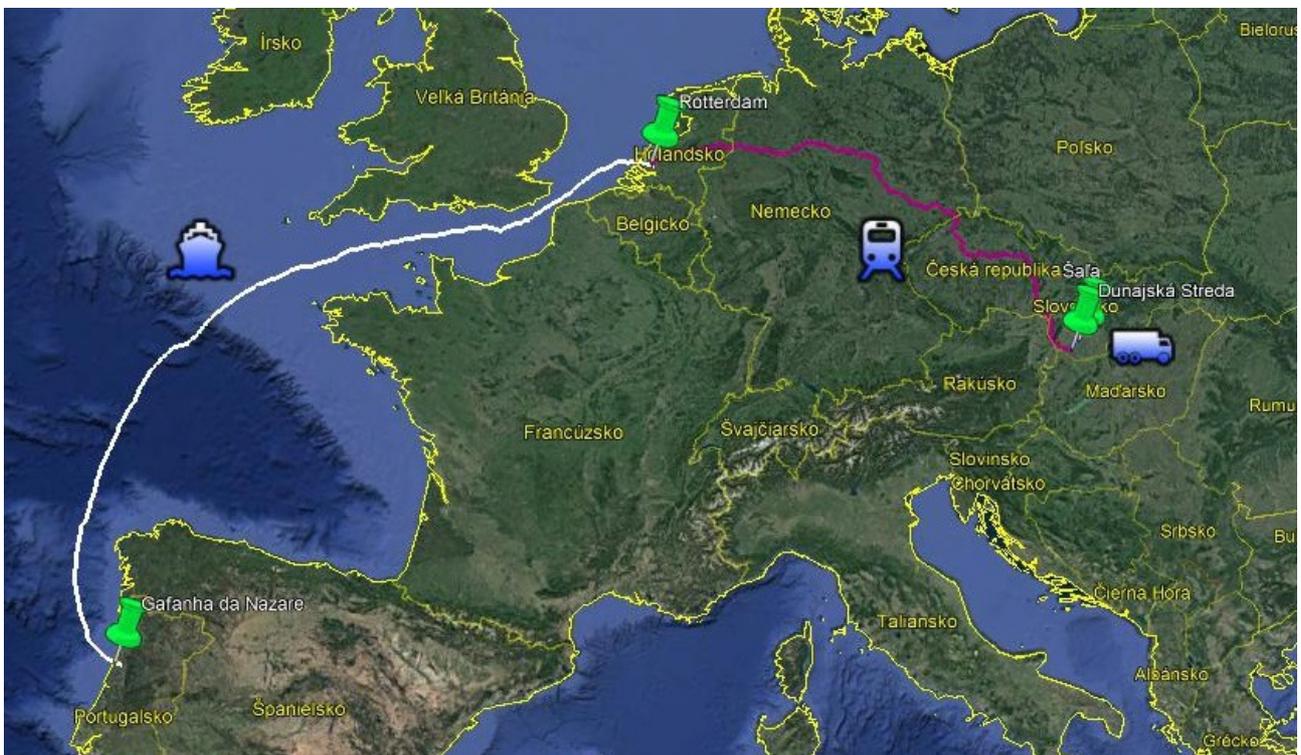
(Portugal, Gafanha da Nazare)

Chemical company addressed	Shipped materials or goods	Quantity (estimate; per month)	Transport distance and mode(s)	Modal split (before pilot launch)	CO2 emitted (per month; calculated)	Modal split (after pilot launch)	CO2 emitted (per month; calculated)
Duslo	AM urea	650 t	Portugal, Gafanha da Nazare	Road 2868 km	116 t	Road 37 km, Rail 1284 km, Sea 1900 km	2 + 18 + 20 = 40 t

Road: Šaľa - Dunajská Streda (37 km),

Rail: Dunajská Streda - Rotterdam (1284 km)

Sea- Rotterdam - Gafanha da Nazare (1.900 km)





Next route is transport 650 t of AM urea to Gafanha da Nazare in Portugal from the first pilot phase midterm report. AM urea was transported only by road from Slovakia to Portugal with 116 tonnes of CO₂ before pilot launch.

After pilot launch modal split was differed between road (from Šaľa to Dunajská Streda - 37 km), rail (from Dunajská Streda terminal to Rotterdam - 1284 km) and sea (from this terminal to Gafanha da Nazare - 1900 km).

We use a CO₂ calculator and average savings are 76 tonnes of CO₂.

Result of the Pilot (by 31 November 2018)

- proposed transport reorganisation discarded because found solutions are not competitive
- proposed transport reorganisation discarded because of lacking logistic service providers or infrastructures
- proposed transport reorganisation under evaluation by company decision-makers
- proposed transport reorganisation tested under real-life conditions (__x times)
- proposed transport reorganisation effectively approved
- other: _____

Success Factors

Transports are carried out in 45' containers via the intermodal operator. The containers are delivered to the customer at the agreed time from the multimodal terminal. The advantage is the transport of 25 big-bags compared to 24 big-bags in the semi-trailers which means 1 tonne more per loading unit or per 1 carriage.

Almost 100% of commodity shipments to Portugal were shifted to multimodal during the year 2018. We consider the solution from the pilot project to be a lasting solution.

Use of Tool-Box

Tool-Box Element	Who used this tool-box element? (project representatives/logistics service provider/chemical company representatives)	How was the element evaluated? (scale: not useful, somewhat useful, very useful, not used)
IT-Visualization	chemical company representatives	somewhat useful
Consulting services	project representatives, chemical company representatives	very useful
Planning Guideline	project representatives, chemical company representatives	somewhat useful
CO ₂ -Calculator	project representatives, chemical company representatives	very useful



COMMUNICATION

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No they do not want to share their pilot experiences for project communication.



E. Conclusion and further plans

a. Task of the national project team

Partner 1: Association of chemical and pharmaceutical Industry of the Slovak Republic

The main task of the partner was to look for specific companies to engage in a pilot project, to mediate information and contacts between chemical and logistics companies, to design solutions and new routes for individual companies, and finally to coordinate planning and launching of new freights.

The prepared multimodal lines were presented from DB CARGO - Schenker company (member of the ZCHFP SR) at the General Assembly of the ZCHFP SR. There is an interesting connection to Perpignan for transport to Spain and Portugal.

Approximate project resources spent for local pilot (including personnel):

WP T2: 42 500 €

b. Sustainability and transferability

We would like to cooperate on the use of lines from the Zilina terminal for carriages for chemistry after its launch. We will also support the preparation and operation of new combined transport lines in over 800 km south and west. The terminal in Žilina was not taken over by the concessionaire by the end of the semester for problems with closing the tender.

c. Lessons learned

Transnational cooperation has brought us the benefits, in particular, of a simple approach to the information and experiences that we have exchanged with each partner. We were able to communicate practical information about the operation or obstacles of the transport abroad where the pilot projects were directed. Collaboration facilitated the planning of new routes and the implementation of the pilot project.

Annexes

Document	Cloud link
Kombinierte Verkehr DB Cargo	https://ifsl50.mb.uni-magdeburg.de/owncloud/s/vECivs6xxAHmLWq?path=%2F04%20WPT2%20Pilot%20Implementation%2FSlovakia%20