

# European Commission

## DG MOVE - Directorate B

STUDY ON SUPPORT MEASURES FOR THE IMPLEMENTATION  
OF THE TEN-T CORE NETWORK RELATED TO SEA PORTS,  
INLAND PORTS AND INLAND WATERWAY TRANSPORT

**Lot 1:** Assessment of market potential for inland ports and IW business

Port Forum 11/06/2018

CONTRACT No. MOVE/B3/SER/2015-224/SI2.721484



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**Mcrit**



# Agenda

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**1. Scope & tasks of the project**

**2. Policy measures & scenarios**

**3. First modelling results**

**4. Next steps**

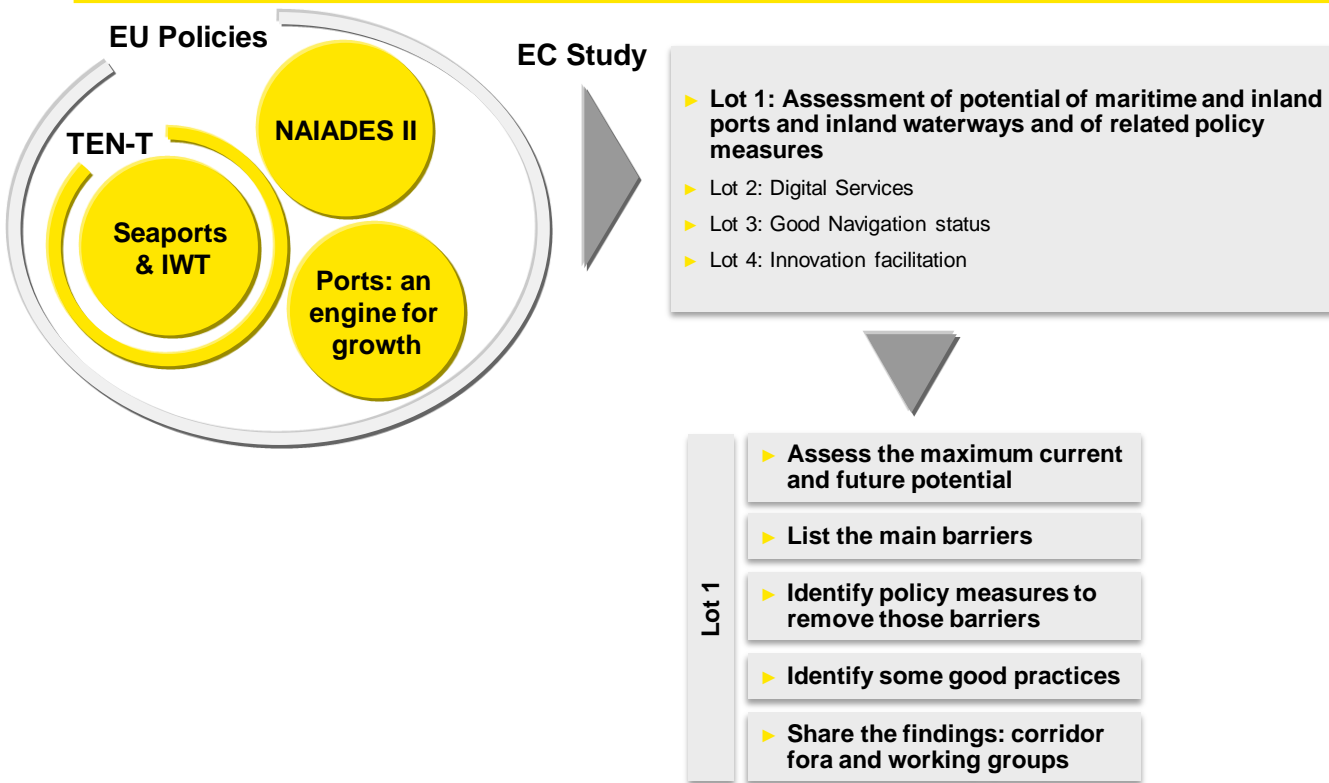
**5. Discussion**

**6. Annex**

# 1. Scope & tasks of the project



# 1. Scope & tasks of the project



# Progress of the study

Final validation stage

Work in progress

Next step

1

## Critical review of the current situation

- ▶ Analysis of major developments
- ▶ Analysis of transport and logistic needs
- ▶ Traffic forecast – baseline scenario
- ▶ Industrial strategies
- ▶ Assessment of existing industrial development and clustering strategies

2

## Design of policy scenarios

- ▶ Identification of 20 policy measures
- ▶ Design of policy scenarios

3

## Assessment of their impact

- ▶ Traffic forecast
- ▶ Assessment of the identified measures
- ▶ Assessment at network level of the policy scenarios

**Support to EU policies: TEN-T corridors, NAIADES II, Ports: an engine for growth**

## 2. Policy measures & scenarios



# The list of identified policy measures have been built thanks to the collaboration of several stakeholders

## Policy measures identification

- ▶ Obstacles to the development of seaport and inland waterways have been identified (details in annex).
- ▶ Then a first list of policy measures has been disseminated to stakeholders for their feedback.

### Meetings on policy measures

- ▶ Workshop in Brussels with the presence of ESPO, INE and EFIP
- ▶ Intermodal, Logistics and Industry Committee of ESPO with the presence of ESPO; Port of Turku; Antwerp Port Authority; Port Authority of Barcelona; Bremen ministry of Economics Labour & Ports; Port of Szczecin-Swinoujscie; Port Authority of Civitavecchia-Fiumicino-Gaeta; Finnish Port Association; Spanish Puertos del Estado.

## Last events

### Workshop on waterborne transport policies on 29 March 2018 in Brussels:

- ▶ A discussion paper on policies has been disseminated before the meeting
- ▶ Feedback from the participants regarding the methodology and measure selection
- ▶ 50 comments collected

### Committee of ESPO on 24 April 2018 in Turku

- ▶ Update on the preliminary results and the current status of the study
- ▶ Feedback from the participants regarding the methodology and measure selection
- ▶ **All the feedbacks / comments have been integrated in the study**

# The identified measures on seaports encompass a very large scope

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## Seaport measures

- ▶ Several kinds of measures related to seaports have been identified:
  - 1) Support the uptake of innovation
  - 2) Share the best practice
  - 3) Promote multimodality for hinterland connections
  - 4) Improve CEF rules and calls which represent nowadays a barrier for port development
  - 5) Greening of waterborne transport
  - 6) Training for multimodality
  
- ▶ Policy measures at **EU, national or local level**
  
- ▶ The issue of the rules for extra-EU investments (seaports as strategic asset) has been discussed but will not be addressed in this study



# Use the tool to test alternative scenarios & variants

#	Scenario name	Digitalization	Multimodality	Environment
S1	Baseline			
S2	Maximum potential			
S3	Short Sea Shipping			
S4	Development of rail& IWT connections			
S5	COP21 scenario (based on S1)			
S6	Disruptive scenario (based on S1)			

## Legend



Not developed



Completely developed

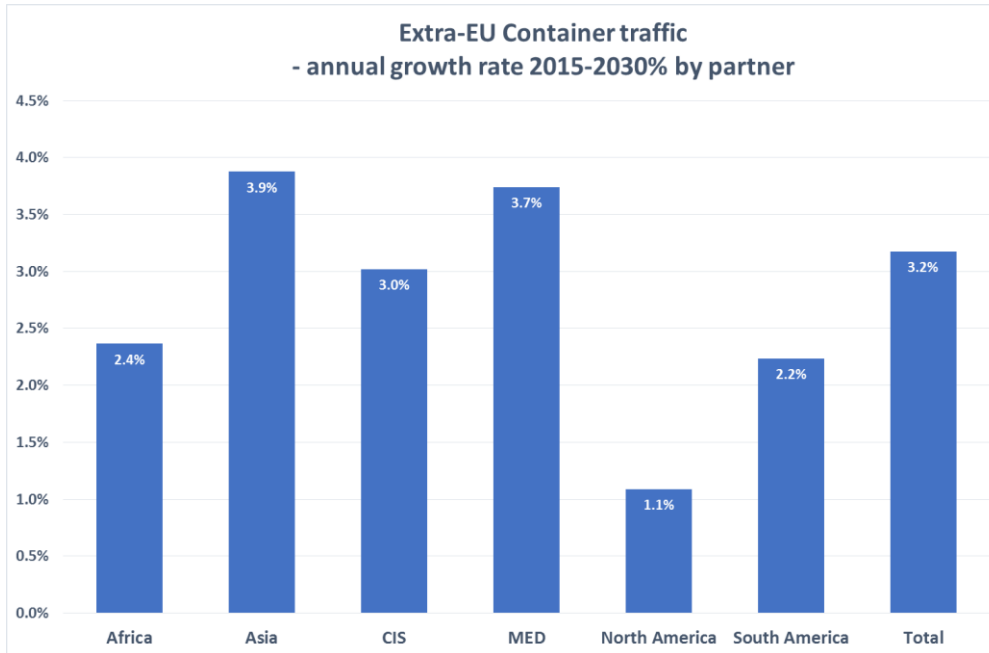
#	Scenario name	Variant #	Description
S1	Baseline	V1	Hub & spoke: Concentration of the traffic on the 15 biggest ports able to welcome ULV
S1	Baseline	V2	Redistribution: Slower traffic growth for containers in the 10 biggest seaports
S1	Baseline	V3	Faster uptake of new technologies for maritime transport and inland waterway

### 3. First modelling results



# Applications on the container market and PortPrint model – generation module

## Results – Growth rate by partner



# Definition of scenarios

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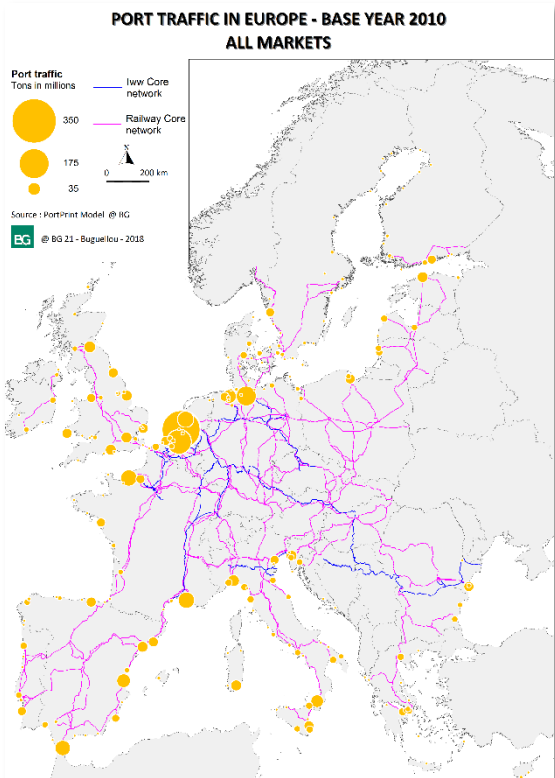
#	Scenario name	Infrastructure	Costs	Comments
<b>S0'</b>	<b>Business as usual</b>	No TEN-T	2010	Required for modelling: just demand growth
<b>S1</b>	<b>Baseline</b>	TEN-T	Baseline	Infrastructure projects on TEN-T included + evolution of transport costs
<b>S2</b>	<b>Maximum potential</b>	TEN-T	Max potential	Alternative set of assumptions on transport costs with strong improvement of IWT performance (and also rail)

# All markets

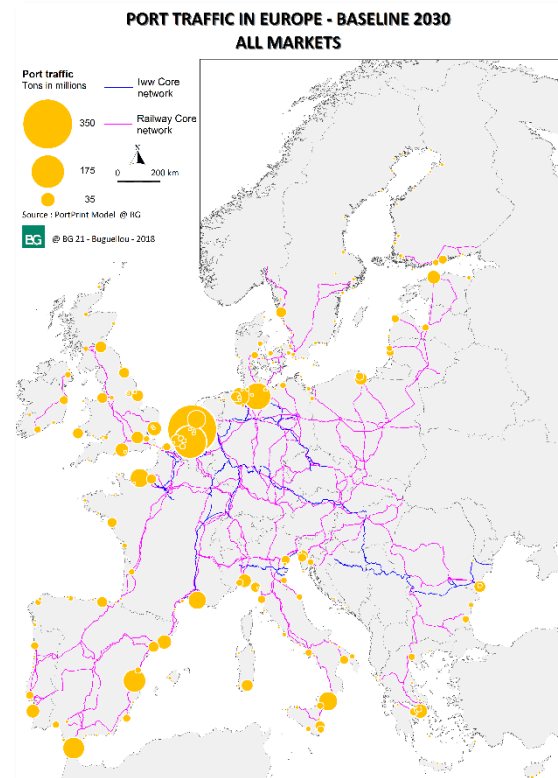


# Modelling – Port traffic in Europe

## All Markets: Base Year 2010 & Baseline 2030



2010 → 2030



# All Markets

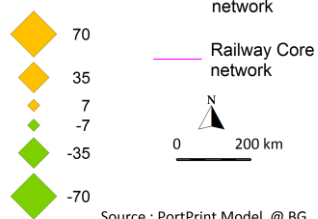
## Differential of traffic

BG @ BG 21 - Bugueuou - 2018

SEAPORT TRAFFIC EVOLUTION IN EUROPE - BASELINE 2030 / 2010  
ALL MARKETS

### Differential of traffic

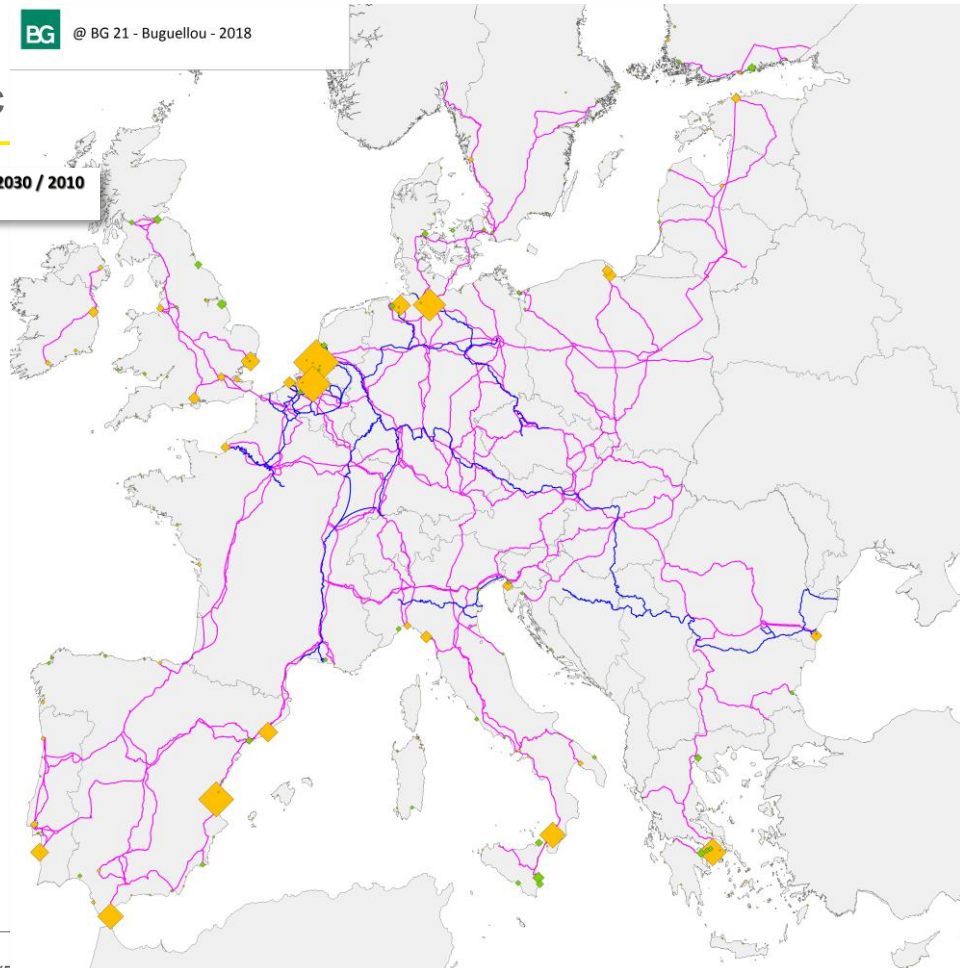
Tons in millions



Source : PortPrint Model @ BG

BG @ BG 21 - Bugueuou - 2018

Differential:  
2030 traffic less  
2010 traffic



# Container market

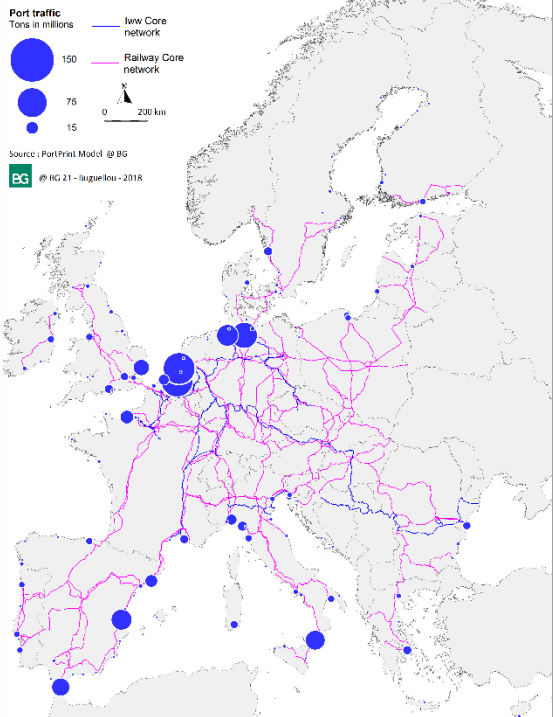




# Modelling – Container market in Europe

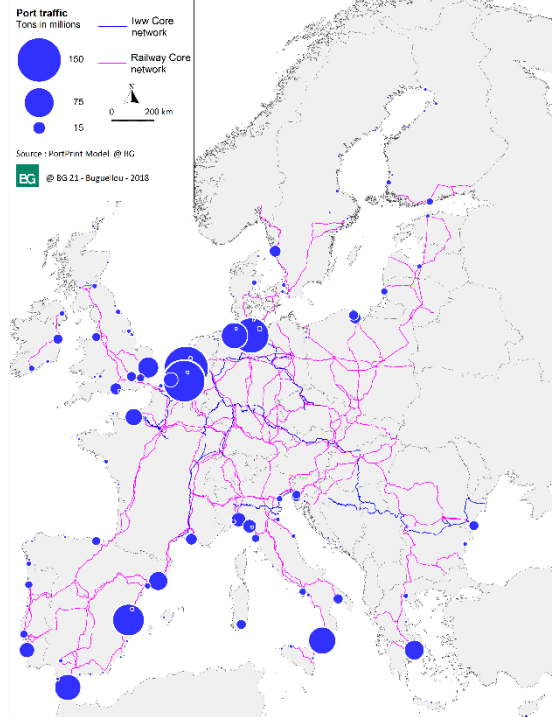
## Containers: Base Year 2010 & Baseline 2030

PORT TRAFFIC IN EUROPE - BASE YEAR 2010  
CONTAINER MARKET



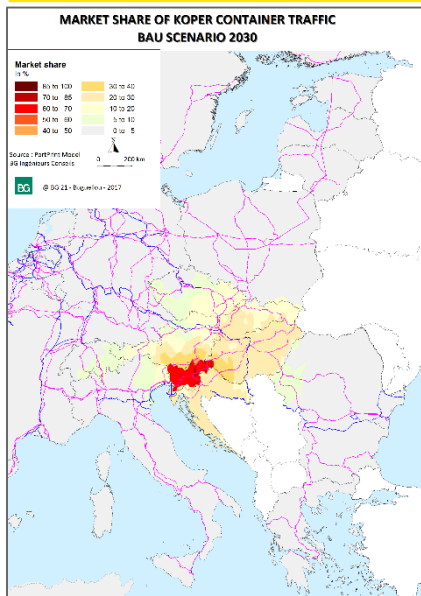
2010 → 2030

PORT TRAFFIC IN EUROPE - BASELINE SCENARIO 2030  
CONTAINER MARKET

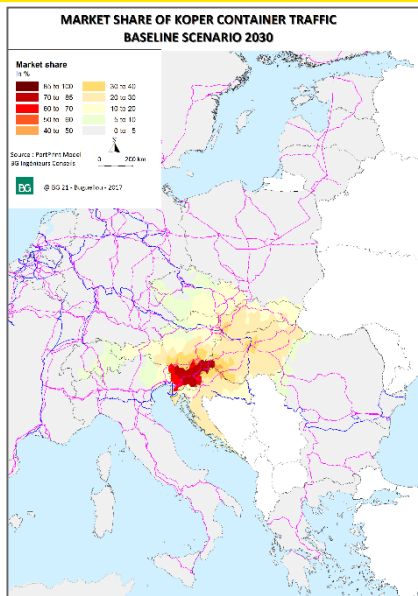


# Results on maritime container market

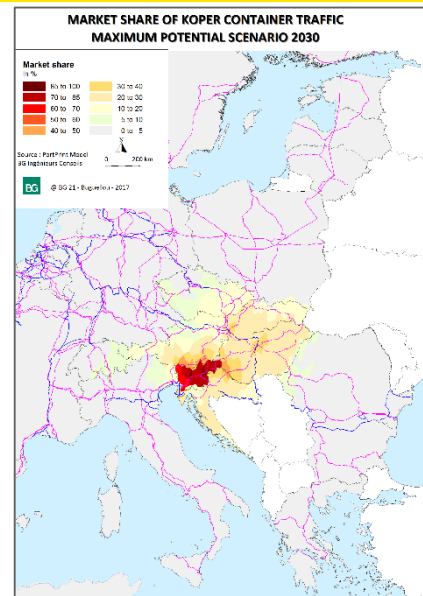
## Market share of Koper container traffic



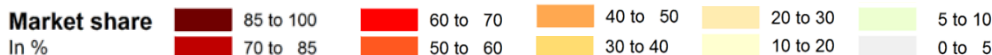
BUSINESS AS USUAL  
2030



BASELINE 2030 Infrastructure  
projects + trend on costs

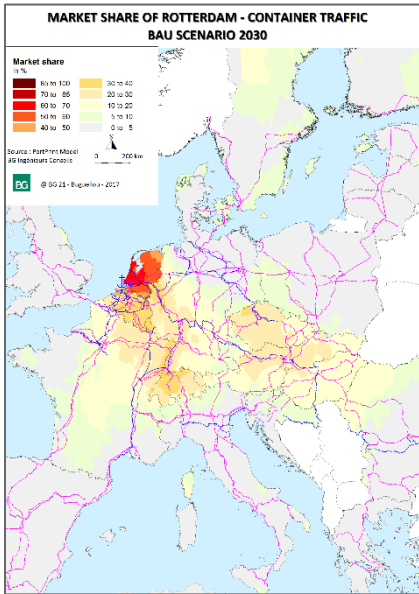


MAX POTENTIAL :  
improvement of IWT & rail

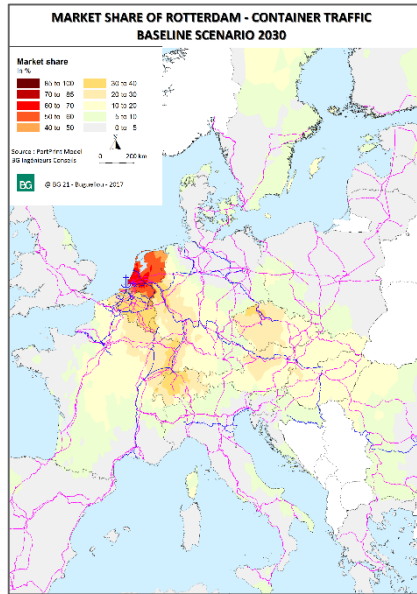


# Results on maritime container market

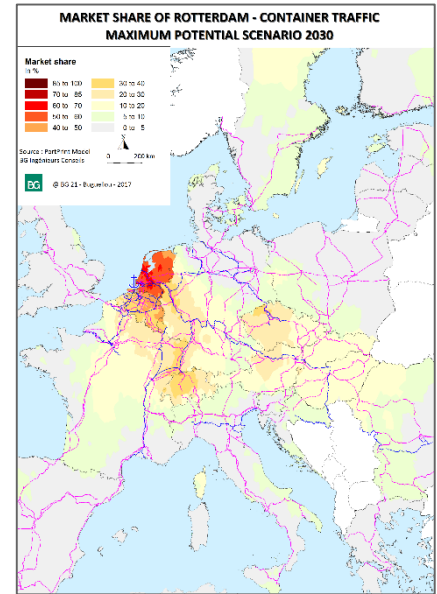
## Market share of Rotterdam container traffic



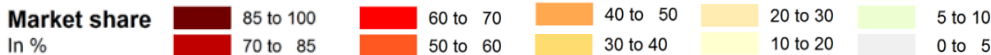
BUSINESS AS USUAL  
2030



BASELINE 2030 Infrastructure  
projects + trend on costs

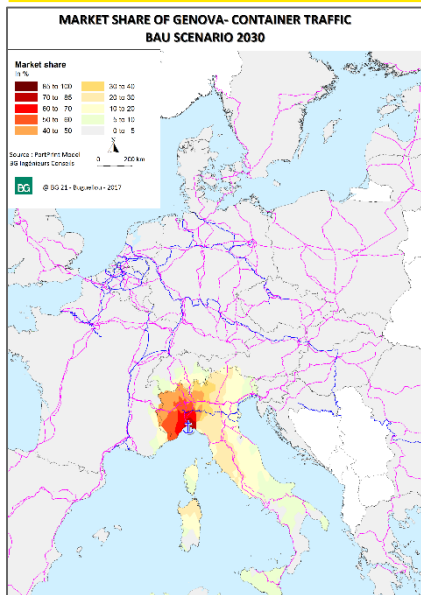


MAX POTENTIAL :  
improvement of IWT & rail

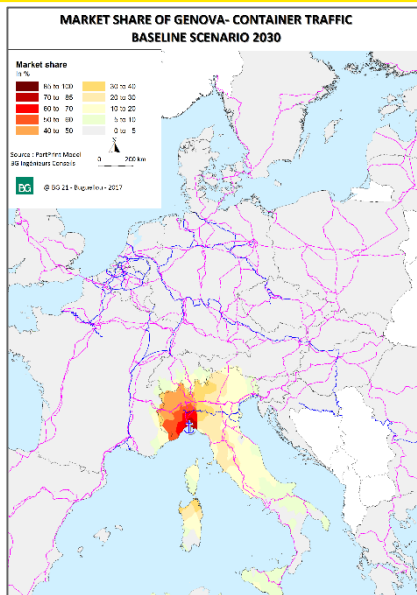


# Results on maritime container market

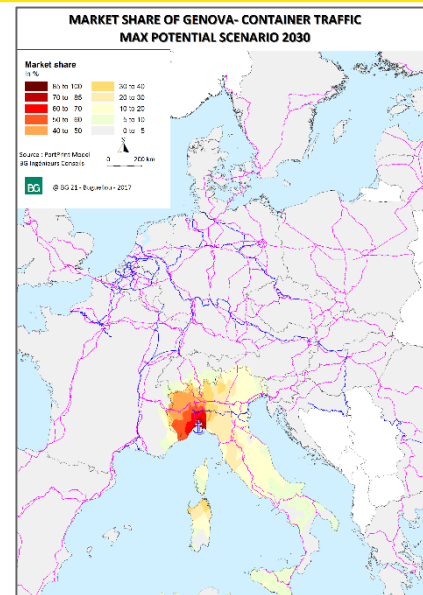
## Market share of Genova container traffic



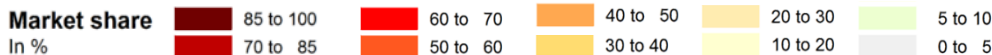
BUSINESS AS USUAL  
2030



BASELINE 2030 Infrastructure  
projects + trend on costs



MAX POTENTIAL :  
improvement of IWT & rail



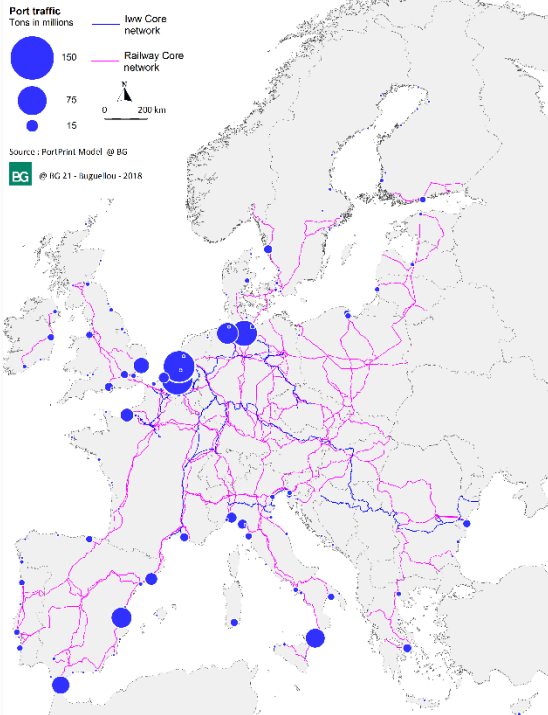


# Agricultural bulk market

# Modelling – Dry bulk (Agricultural bulk)

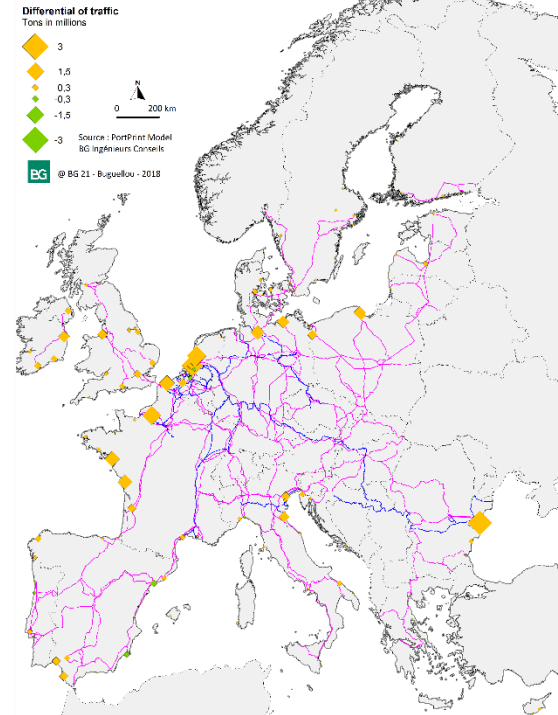
## Dry bulk Agricultural: Base Year 2010 & Baseline 2030

PORT TRAFFIC IN EUROPE - BASE YEAR 2010  
CONTAINER MARKET



Differential:  
2030 traffic less  
2010 traffic

EVOLUTION OF SEAPORTS TRAFFIC IN EUROPE - BASELINE 2030 - 2010  
AGRICULTURAL BULK MARKET



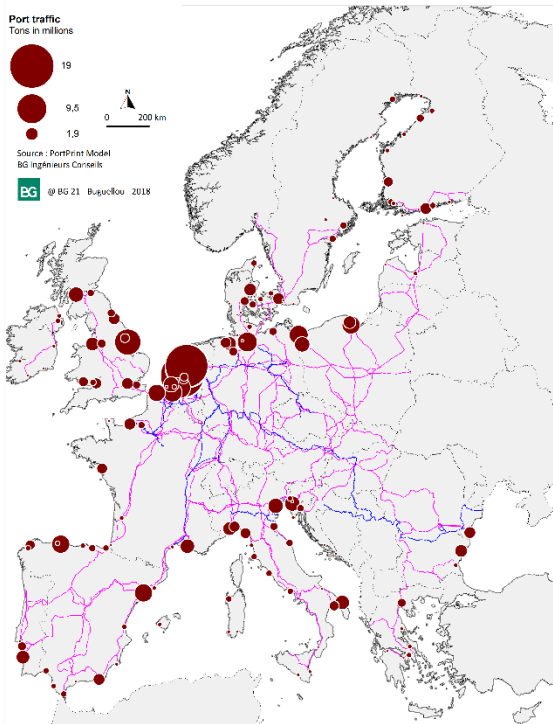
# Coal market



# Modelling – Dry Bulk (Coal)

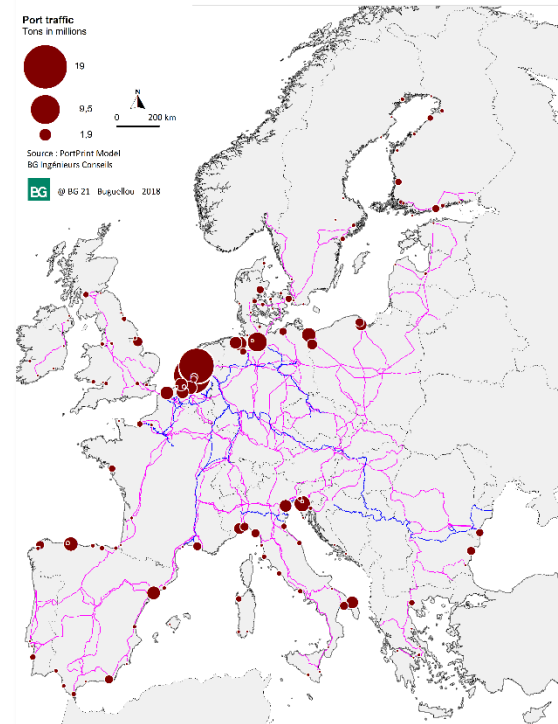
## Coal: Base Year 2010 & Baseline 2030

PORT TRAFFIC IN EUROPE - BASE YEAR 2010  
COAL MARKET



2010 - 2030

PORT TRAFFIC IN EUROPE - BASELINE 2030  
COAL MARKET





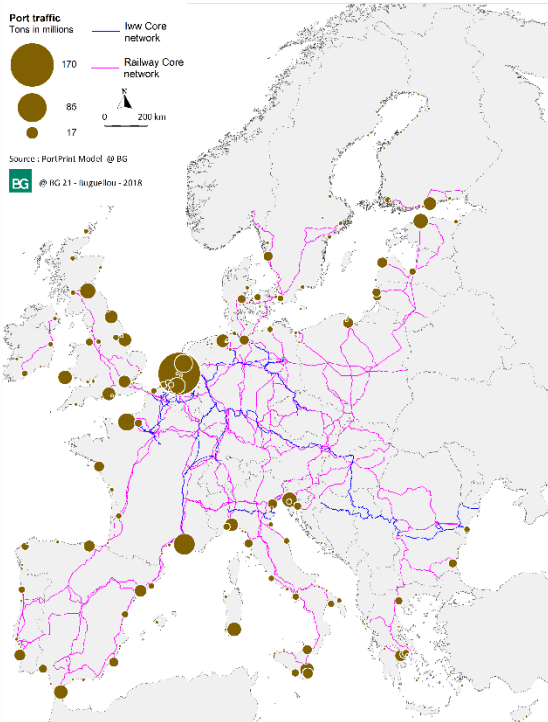
# Petroleum market



# Modelling – Liquid Bulk (Petroleum products)

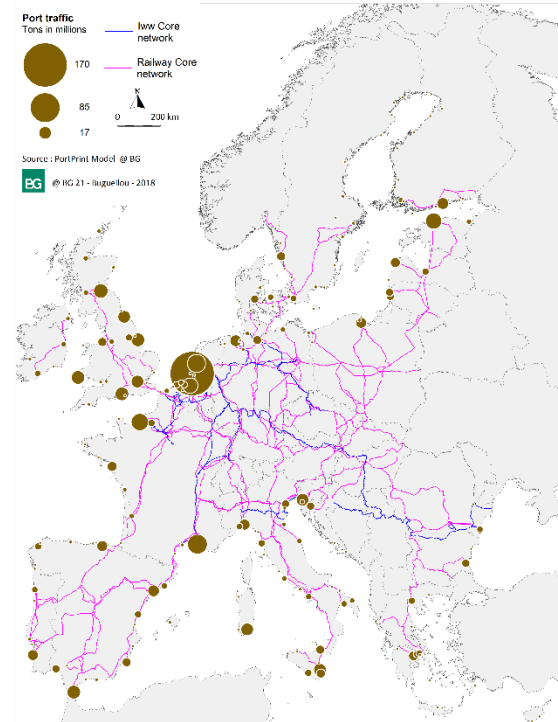
## Petroleum products: Base Year 2010 & Baseline 2030

PORT TRAFFIC IN EUROPE - BASE YEAR 2010  
PETROLEUM PRODUCTS MARKET



2010 - 2030

PORT TRAFFIC IN EUROPE - BASELINE 2030  
PETROLEUM PRODUCTS MARKET



## 4. Next steps



# Calendar

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- ▶ Assessment of policy scenarios through modelling tool
- ▶ Final report in October

# 5. Discussions



# Questions / issues

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- ▶ First feedback on the results?
  - ▶ Growth of containers flows, decrease of energy (coal, crude oil)
  - ▶ Corridor network corridors: projects are improving the connectivity of the largest seaports
  - ▶ No major change in the distribution of traffic amongst ports
- ▶ Any forecast available on the potential of circular economy in ports (in terms of T or revenues?)?
- ▶ Any comments / questions on the policy measures & policy scenarios?

# Thank you!

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## 6. Annex







# Annex: Consultation process

# Stakeholders have shown a strong interest in the project

## Sector association

- ▶ ESPO workshop 24/04/2018
- ▶ Workshop on the waterborne transport policy 29/03/2018
- ▶ Port Forum 11/12/2017
- ▶ ESPO workshop 12/12/2017
- ▶ INE 26/11/2017
- ▶ ESPO Civitavecchia 28/04/2017
- ▶ Port Director Malta 27/03/2017

## Discussion papers

- ▶ **Discussion paper on scenarios** disseminated on the 12/04/2017
- ▶ More than 60 comments collected
- ▶ Detailed answers and additional information provided on November the 7<sup>th</sup>
  - ▶ Appendix on the modelling tool
  - ▶ Appendix on the assumptions on costs
  - ▶ Appendix on continental containers
- ▶ Paper on policy measures disseminated on the 23<sup>rd</sup> of March 2018, 50 comments collected, taken into account

# Annex: Modelling

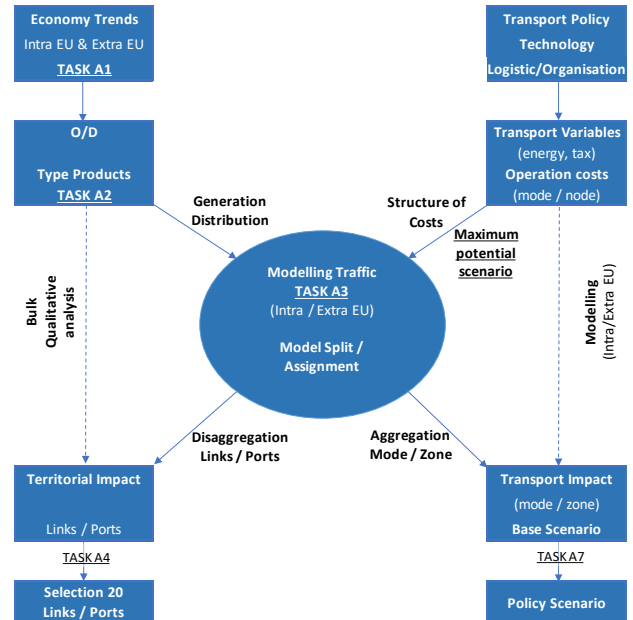


# Applications on the container market and PortPrint – model architecture

## Methodology: Task A3

Presentation of the results of the modelling tool:

- ▶ Demand generation (NUTS 2 zoning): two separate matrix
  - ▶ Extra EU Model: competition between Europe and the rest of the world
  - ▶ Intra EU Model: relation between regions inside Europe
- ▶ Portprint model: a classic model
  - ▶ Generation & Extra-Eu matrix
  - ▶ Port choice model
  - ▶ Modal share
  - ▶ Assignment
- ▶ Short Sea Shipping: the choice of the port is limited to connections identified in the MoS study.



# Products analysed and operating costs calculation

## Market analysis

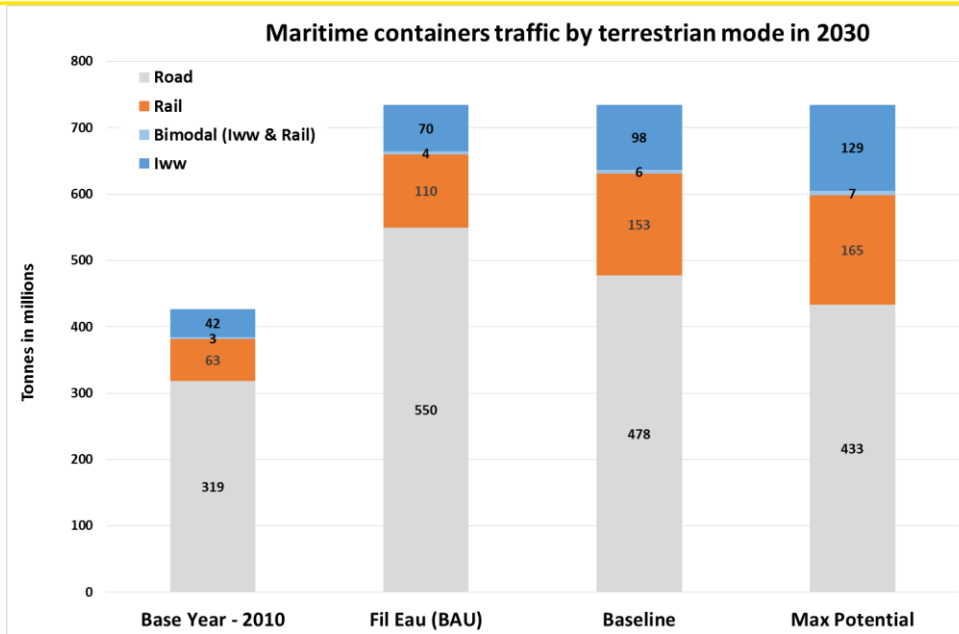
Type	Products
Intermodal	Container
	PW45
	Motorway of Sea
Liquid bulk	Petroleum products
Dry bulk	Coal
	Agricultural bulk
	Raw materials
	Waste

## Operating cost

- ▶ Calculated in a detailed way (microscopic disaggregation of the cost) and it takes into consideration costs such as:
  - ▶ Depreciation
  - ▶ Energy
  - ▶ Maintenance
  - ▶ Tolls
  - ▶ Crew
  - ▶ Etc.

# Results on maritime container market – in tons

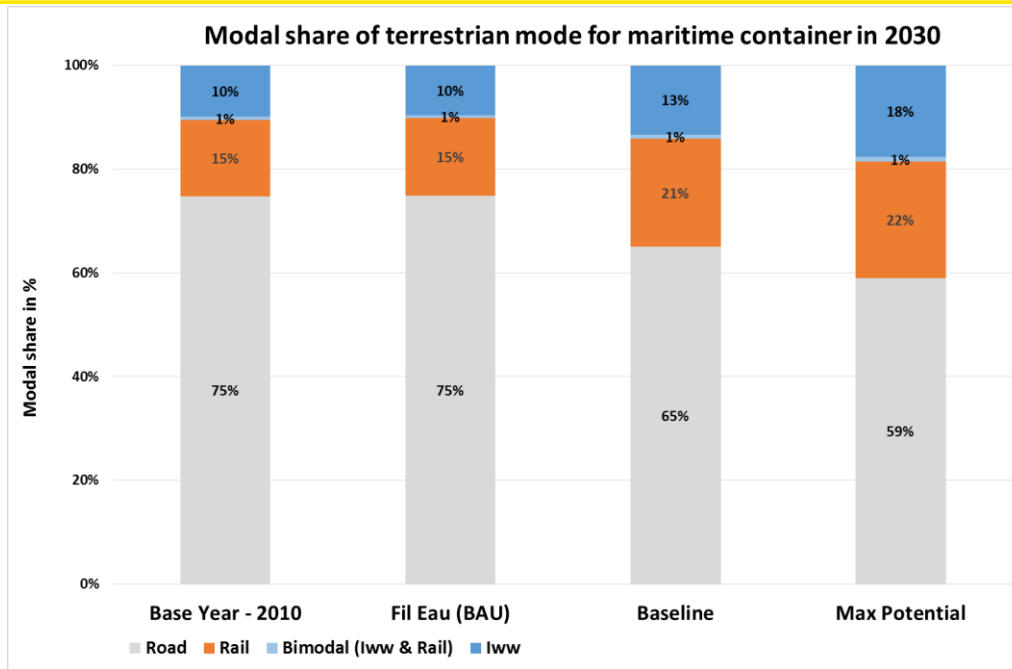
## Container market



- ▶ Increase of the total market by 70% between 2010 & 2030 with:
  - ▶ x 2,3 for IWT traffic between 2010 & Baseline Scenario 2030
  - ▶ x 3 for IWT traffic between 2010 and Max Potential Scenario 2030

# Results on maritime container market in modal share

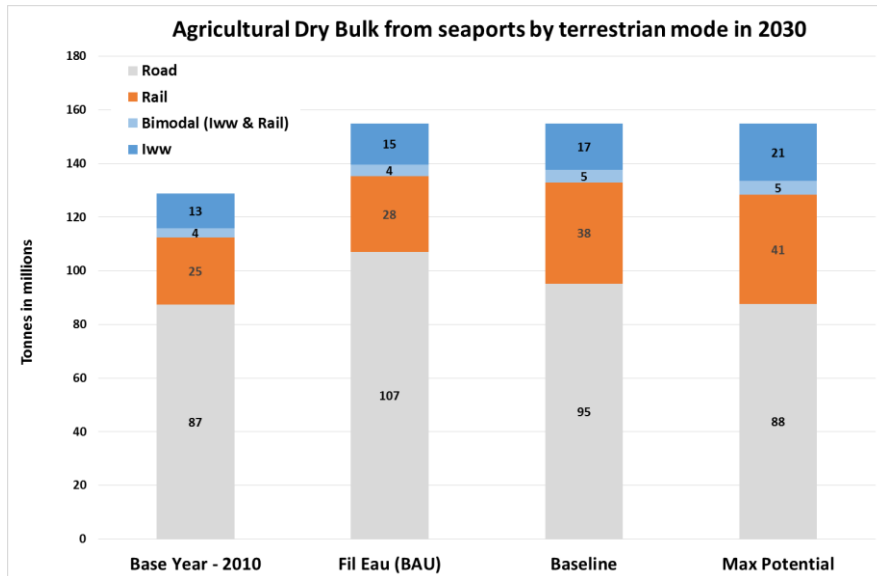
## Container market share



- ▶ The total share of IWT is 10% in 2010 & 2030 (BAU), 13% in baseline scenario and 18% for maximum potential scenario.

# Results on agricultural bulk (included livestock feed)

## Agricultural market

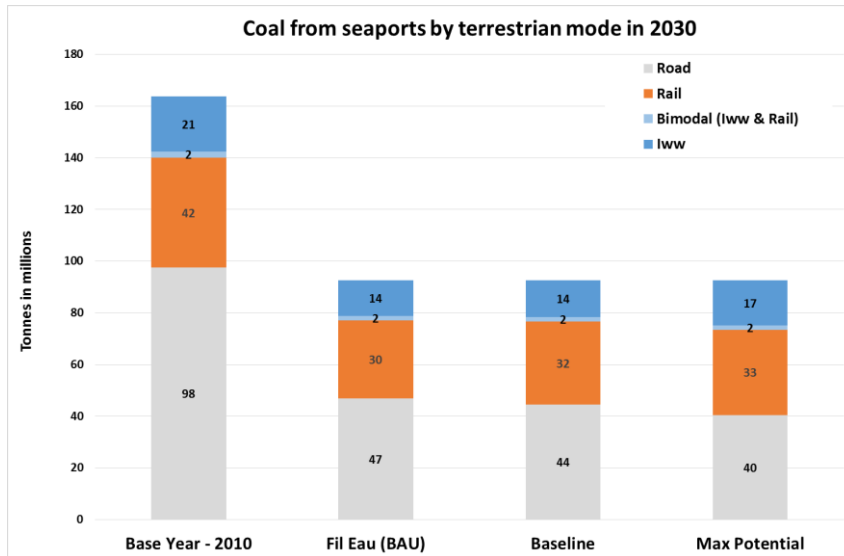


- ▶ Compared to the Base Year, the traffic increase of:
  - ▶ 20% due to the generation of traffic
  - ▶ 33% in the baseline scenario
  - ▶ 66% in the Max Potential scenario

- ▶ 25% of the traffic is not generated in a core seaports => less concentration of the traffic at EU level
- ▶ When IWT is available, the modal share is high (> 30%), especially for Rhine-Alpine and Rhine-Danube corridors



# Results on coal from or to seaports (not intra-continental flows) - Coal market



▶ Compared to the Base Year, the IWT traffic decreases:

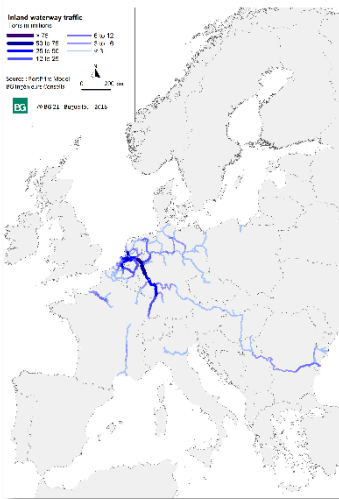
- ▶ - 35% due to the generation of traffic (BAU) and -43% for all modes (seaports). There is a structural change in the OD.
- ▶ -30% in the baseline scenario
- ▶ -15% in the Max Potential scenario. Modal shift limits the effects of decrease of traffic volume

- ▶ When IWT is available, the modal share is high (> 30%-40%), especially for Rhine-Alpine and Rhine-Danube corridors
- ▶ Rail also represents a high market share (30-35%)
- ▶ Road traffic is for very short distances

# Modelling results for IWW

## Baseline scenario

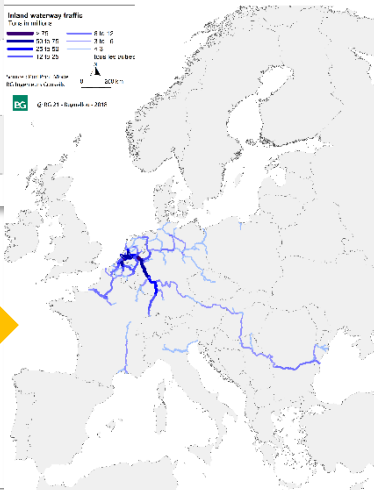
INLAND WATERWAY TRAFFIC IN EUROPE - BASE YEAR 2010



### Increase of Iww traffic due to :

- ▶ Generation traffic (container)
- ▶ Ten-T projects (example of Seine-Scheldt)

INLAND WATERWAY TRAFFIC IN EUROPE - BASELINE SCENARIO 2030



Differential



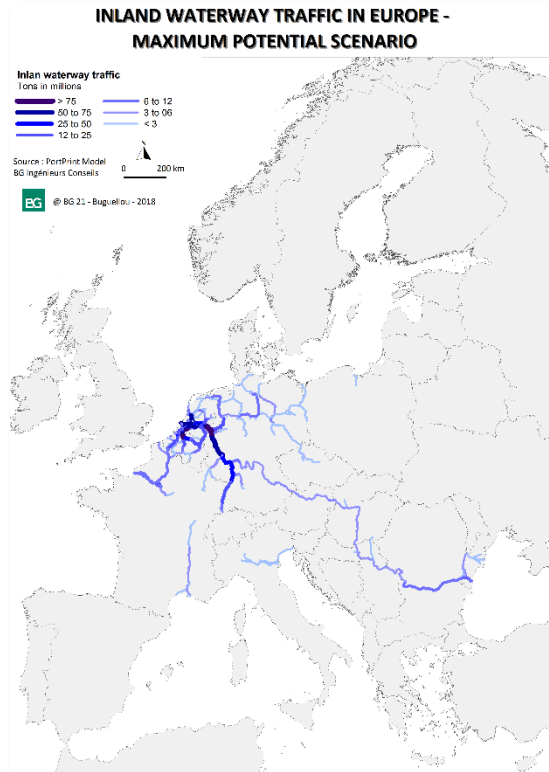
INLAND WATERWAY TRAFFIC IN EUROPE - DIFFERENTIAL BASELINE 2030 - BASE YEAR



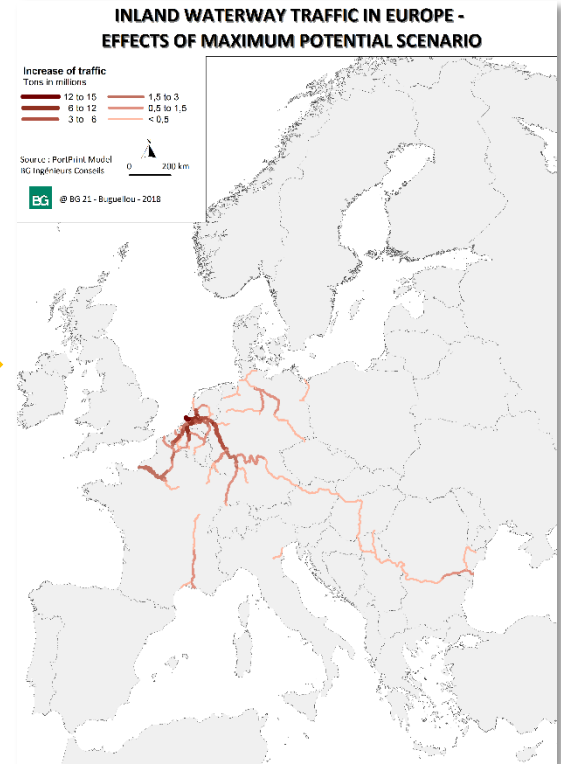
2010 → 2030

# Modelling results for IWW

## Maximum potential scenario

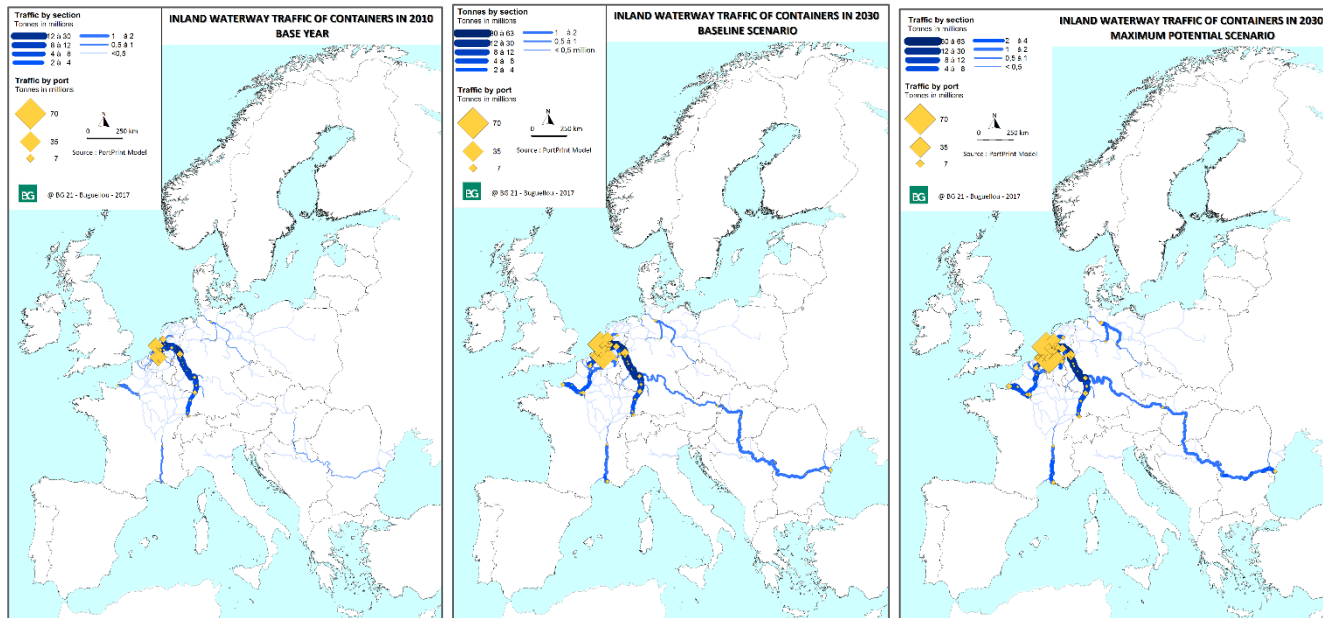


Additional  
traffic in  
2030  
thanks to  
maximum  
scenario



# Results on inland waterway traffic of containers

## IWW Container market



BASE YEAR 2010



BASELINE 2030 Infrastructure projects + trend on costs



Max Potential : improvement of IWT & rail



# Annex: Identified obstacles

# Identified obstacles (1/2)

#	Obstacle	Description
I	<b>Lack of infrastructure developments</b>	Infrastructure development of waterborne transport still needs to be improved on many parts of the EU. These improvements can be related to IWT & ports infrastructure itself (fairways, locks, quays...) and also to hinterland connections of seaports & inland ports. On this aspect, CEF rules and calls represent a barrier for ports which is limiting their development.
II	<b>Lack of qualified IWT staff</b>	Lack of qualified IWT staff for both operational and management. Lack of mutual recognition of qualifications across borders.
III	<b>Lack of collaboration / coordination of the different stakeholders</b>	Shippers prefer to transport goods using the routes that they know and trust and are concerned with end to end delivery. For instance, shippers would consider transshipments to different modes as a risk. Also there may be poor integration between IWT and the other actors within the logistics chain.
IV	<b>Progressive loss of its environment-friendly image &amp; compliance with more stringent standards on environment</b>	Due to high emissions of NOx and particulates (PM) compared to road transport. The road transport sector is becoming more environment-friendly at a much faster pace than inland shipping. The standards for IWT are covering both: - increasing demands by environmental regulations at EU, national and regional level for all modes of transport; - increasing demands by shippers for more sustainable logistic chains.

# Identified obstacles (2/2)

#	Obstacle	Description
V	<b>Market accessibility for waterborne transport</b>	<p>This barrier is related to 2 factors:</p> <ul style="list-style-type: none"> <li>- a geographic one. The development of inland waterway depends essentially on the respective locations of production and consumption sites in relation to inland waterway network. Indeed the costs of transport, location, handling and last miles are very high, for this product. Therefore, the use of waterway depends essentially of each territorial context and the geographical distribution of each site;</li> <li>- a logistic one, as IWT vessels cannot always carry all kind of goods due to conditioning issue (for instance pallets) or size of shipments.</li> </ul>
VI	<b>Competitiveness and environmental performance of inland waterborne transport against other modes</b>	<p>Need to increase the uptake of existing innovation to modernize, improve the environmental performance and competitiveness of inland waterway transport.</p> <p>The sector is conservative and slow to invest in innovation with many small operators with old vessels. Moreover the costs for intermodal and IWT are not always competitive and would offer no advantage if the environmental performance was also lower.</p>
VII	<b>Administrative burden for waterborne transport</b>	<p>Administrative processes in the ports, controls and customs clearances are currently too complex and time-consuming. It can hinder the development of waterborne transport, especially Short Sea Shipping.</p>



# Annex: Policy measures



# Identified measure have been screened to select the most promising measures

## Policy screening

- ▶ 4 criteria have been used for the first screening of the list of measures :
  - ▶ Effectiveness: the extent to which options can be expected to achieve the objectives;
  - ▶ Efficiency: the extent to which objectives can be achieved for a given level of resources;
  - ▶ Consistency: the extent to which options do not generate trade-offs across the economic and social domain;
  - ▶ Coherence: the extent to which the options are coherent with EU transport policy.

## Screened measure presentation

- ▶ Each screened measure is presented according to the following characteristics:
  - 1) Typology: a policy measure could consist in
    - a) Regulating: design of a regulatory framework or enact laws at EU, national or local level.
    - b) Taxing: incentives through discount / premium
    - c) Financing: subsidized loans and guarantees.
    - d) Encouraging initiative, innovation and a better coordination
  - 2) Short description of the measure
  - 3) Obstacle which it should address

# Measures per obstacle (1/3)

Obstacle	Measure code	Measure typology	Measure description
All	0.1	Financial support	Financial support to the uptake of innovation: blending calls or blending facilities at EU level, grants or similar mechanisms at national or local level.
	0.2	Encouraging	Share of best practices for all kind of obstacles identified.
Lack of infrastructure developments	1.1	Financial support	Development of massified infrastructures including multimodal platforms (improve the inland ports' accessibility, foster the massification, OFP and multimodal platforms, improve the draught of IWW to enable a continuous and reliable IWT).
	1.4	Encouraging	Improvements in ports & terminals (automation, better use of ICT, smart port...).
	1.5	Tax / infrastructure charges and financial support	Encourage ports to innovate in the infrastructure supporting new vessels that are more efficient and environmental friendly.
	1.6	Regulation	Adapt CEF calls according to port needs, which means that there should be multiple multi-annual calls.
	1.7	Encouraging	Adopt a whole life-cycle approach for infrastructure maintenance at national and local level.

# Measures per obstacle (2/3)

Obstacle	Measure code	Measure typology	Measure description
Lack of qualified IWT staff	II.1	Encouraging	Training programs on multimodality, maritime and inland waterway transportation.
Lack of collaboration / coordination of the different stakeholders	III.2	Regulation	A broader and more accurate data base concerning waste.
	III.3	Financial support	Support to the short sea shipping inland waterway promotion center.
	III.4	Regulation and financial support	Development of multimodal traffic management and information systems.
	III.5	Regulation	Improvement of coordination in the container chain in order to promote the development of synchronomodality: <ul style="list-style-type: none"> <li>- development of bundling &amp; unbundling in order to prepare shipments for IWT.</li> <li>- coordination between all stakeholders to propose a seamless and optimized logistic chain.</li> </ul>

# Measures per obstacle (3/3)

Obstacle	Measure code	Measure typology	Measure description (wording changed)
Progressive loss of its environment-friendly image & compliance with more stringent standards on environment	IV.1	Tax / infrastructure charges	Internalization of external costs: heavy duty vehicles infrastructure charges.
	IV.2	Regulation	Setting up ambitious targets for recycling and biofuels with consideration of local quality air standards.
	IV.3	Regulation	Setting up targets for rail & IWT modal share in port terminals .
Competitiveness and environmental performance of inland waterborne transport against other modes	VI.1	Regulation and financial support	Promotion of the development of a sustainable urban logistics through the use of IWT: preservation of the infrastructure in the city, development of new vessels, development of multimodal logistic hubs next to inland waterway in the suburb...
	VI.2	Encouraging	Support the development of the pallet wide (45ft) containers for a cost effective modal shift. Adapt the rules on vessels design & operation.
	VI.3	Regulation and financial support	New vessel design (deployment of energy efficient vehicles: decrease energy demand through new engines, material and design, automated vessels).
Administrative burden for waterborne transport	VII.1	Regulation	More consistency in admission policy (definition of the applications for exemption with respect of allowing vessels of a larger than permitted dimensions).
	VI.3	Regulation / financial support and Encouraging	Facilitation of the transportation of wastes within EU and outside to promote the development of circular economy (status of waste, e-waste flows and trade, ...).

# Measures discarded

Code	Typology	Description
I.1	Financial support	Development of massified infrastructures including multimodal platforms (improve the inland ports' accessibility, foster the massification, OFP and multimodal platforms, improve the draught of IWW to enable a continuous and reliable IWT).
I.2	Financial support	Acceleration of TEN - T implementation.
III.1	Encouraging	Action plan for container network: maintaining and updating inland terminals database, gauging capacity needs and monitoring proposals for network changes, address issues regarding sea port terminals such as waiting times and performance indicators.
IV.4	Regulation	Greening the fleet (ban polluting vessels and greening fund and financing).
IV.5	Financial support, Regulation	New vessel design: completely electric vessels or using clean alternative fuels.
IV.6	Regulation/ tax, infrastructure charges	Implementing port environmental charges in order to attract cleaner vessels and reduce emissions in the port-city area.
V.1	Regulation and financial support	Promotion of industrial clustering strategies next to waterborne transport.
V.2	Regulation	New vessel design (such as specific ships able to handle palletized goods).
VII.2	Regulation	Facilitate coordination between authorities boarding the ship leading to one-stop administrative shops (or 'single windows') for traders, who would then have to deal with just one administrative body instead of three or four at present, according to the communication from the commission to the European parliament on Short Sea Shipping.