



Report modal pour la messagerie : le camion a de beaux jours devant lui

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Context – Freight



A growth forecast to
be of 300% by 2050
(OCDE,2019)

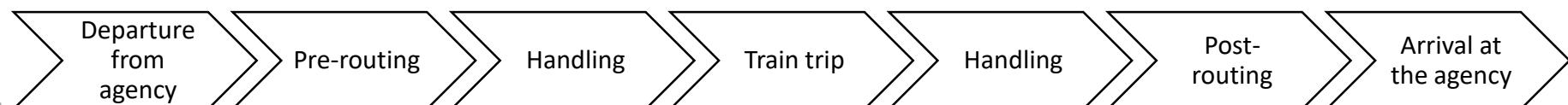
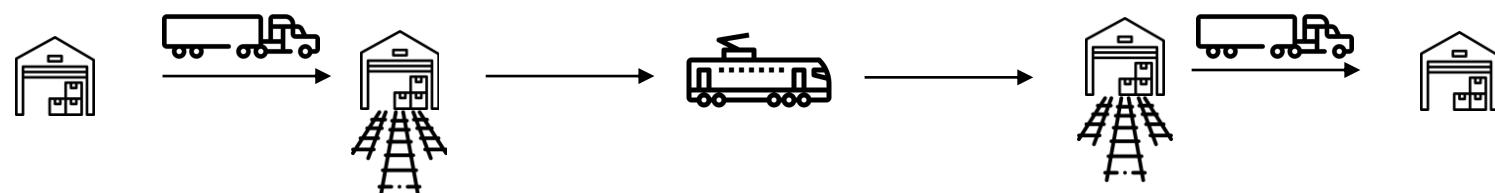
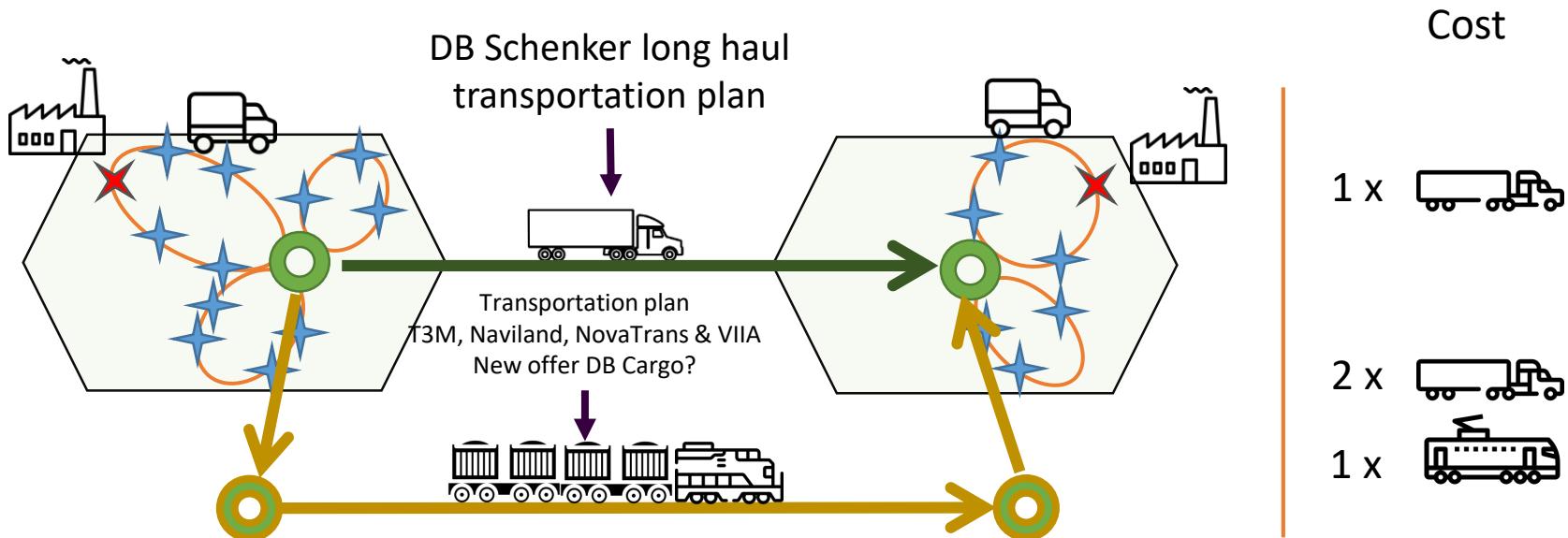


The sector has been
identified as one of the
most difficult to
decarbonize (Guéron
et al., 2014)



EU highlights the need
to increase
significantly the share
(Kallas *et al*, 2011)

Introduction

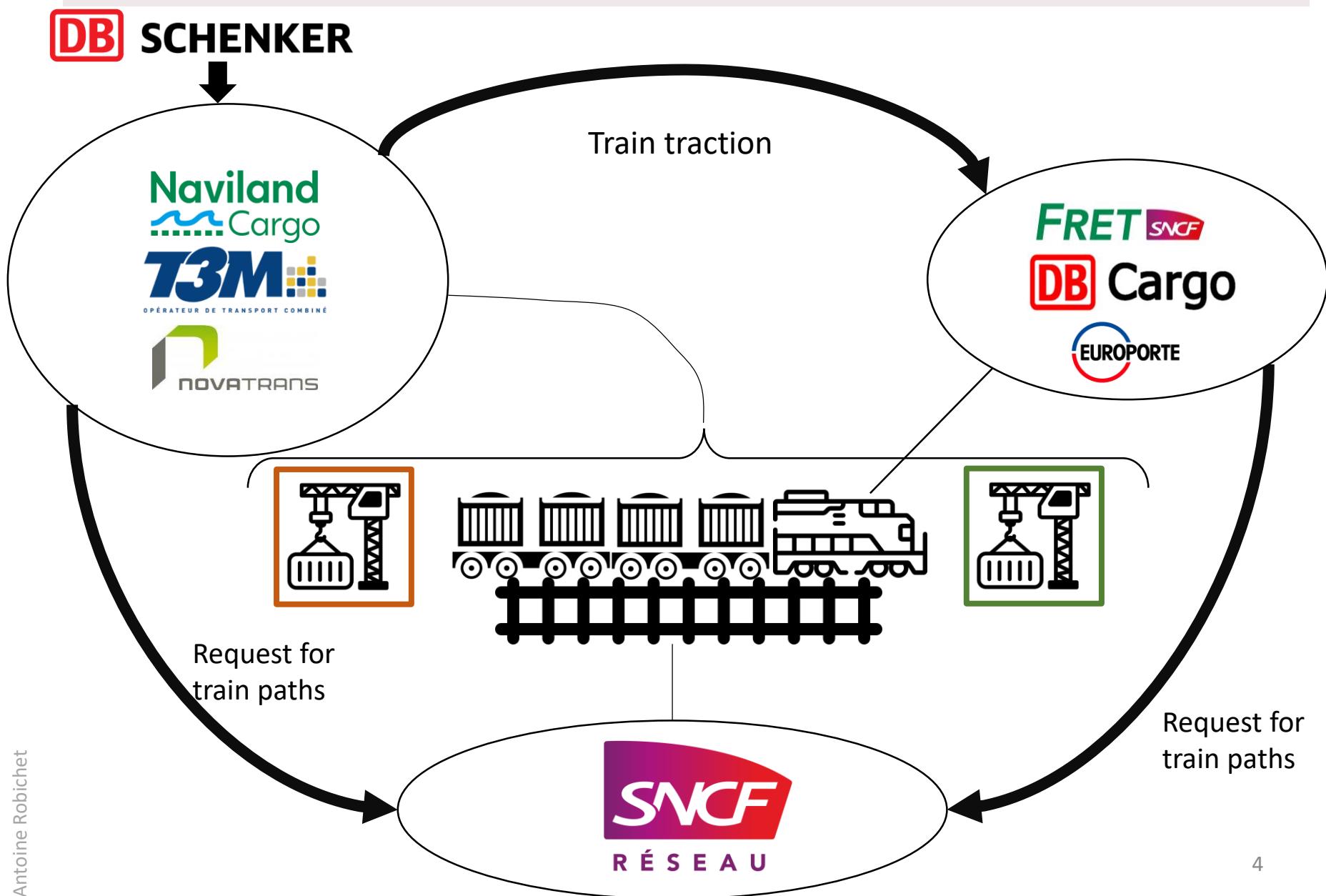


19h

Territoire d'étude : France

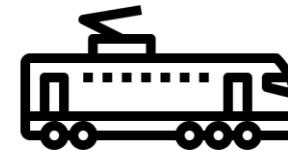
7h (j+1)

Mapping of the major players of rail in France



Methodology

1. Operational feasibility analysis (time constraint)



Analysis of DB Schenker's long-distance transport plan (analysis of time criteria, identification of flows near intermodal platforms)

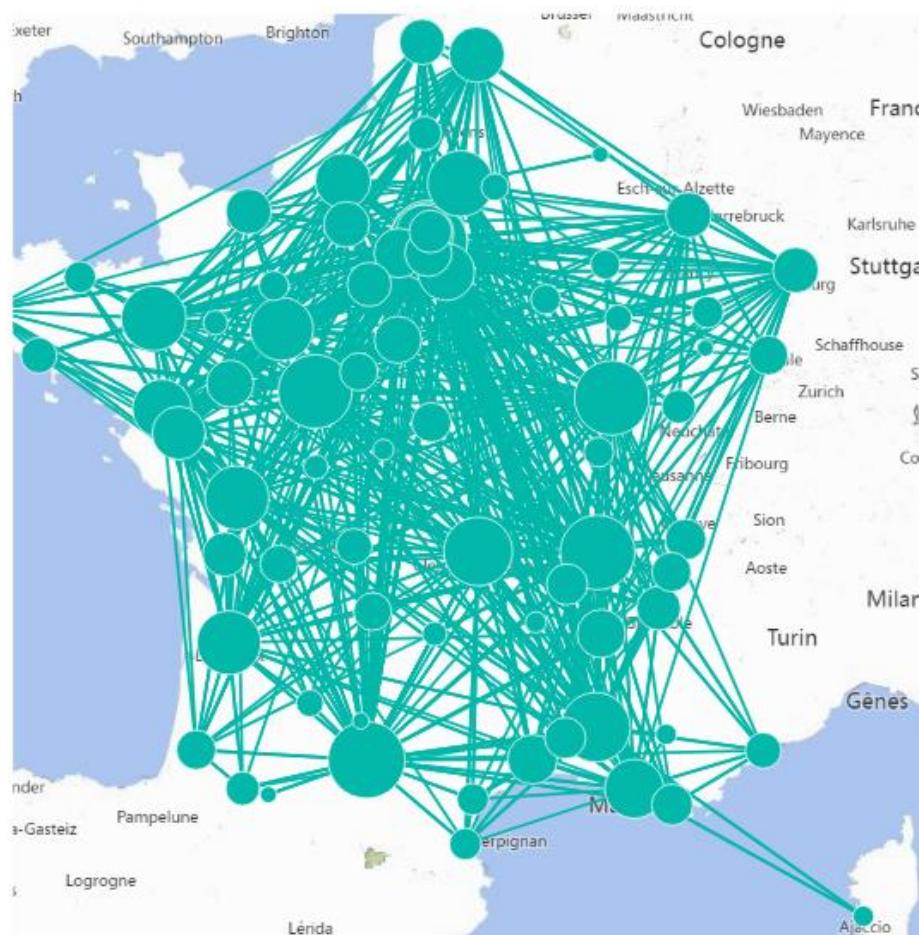
Collecting the intermodal transport offer on a French scale (4 major players)

Use of SQL queries to identify the road flows that are feasible with the intermodal transport offer

2. Economic and environmental analysis of the identified axes

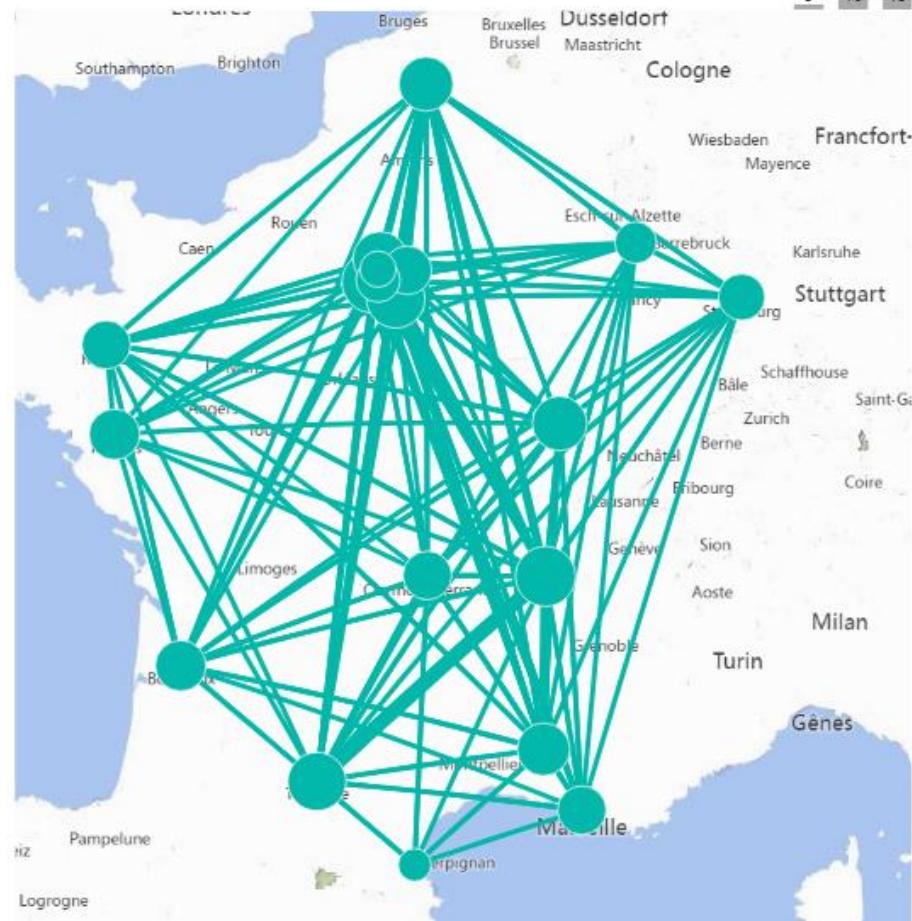
DB Schenker's domestic transport plan

~2000 different daily trips



All domestic DB Schenker connections in one week

~200 different daily trips

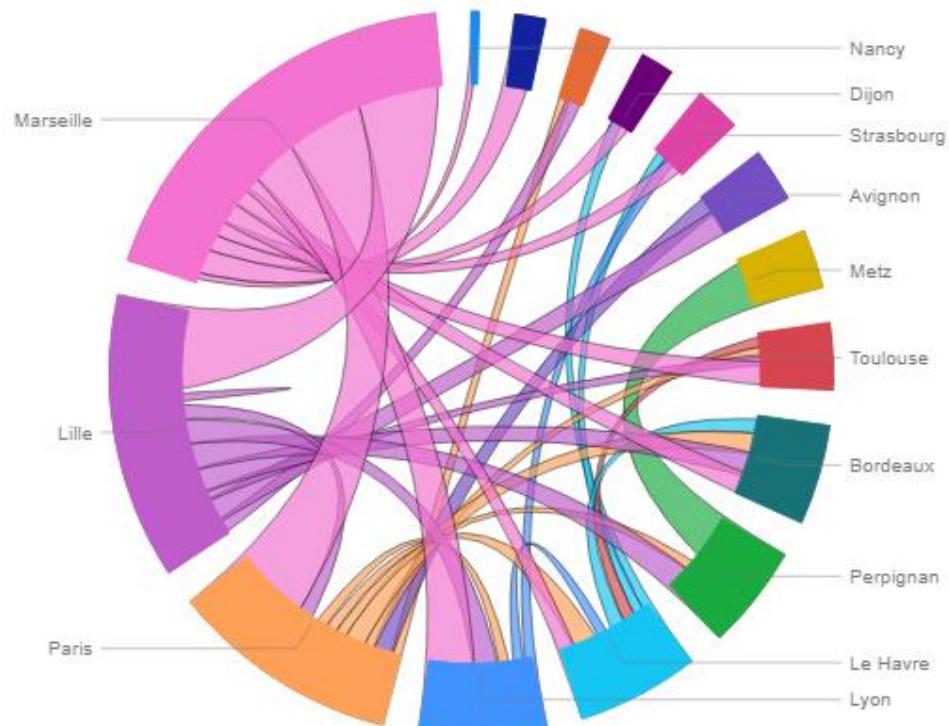


All domestic DB Schenker connections in one week next to an intermodal platform

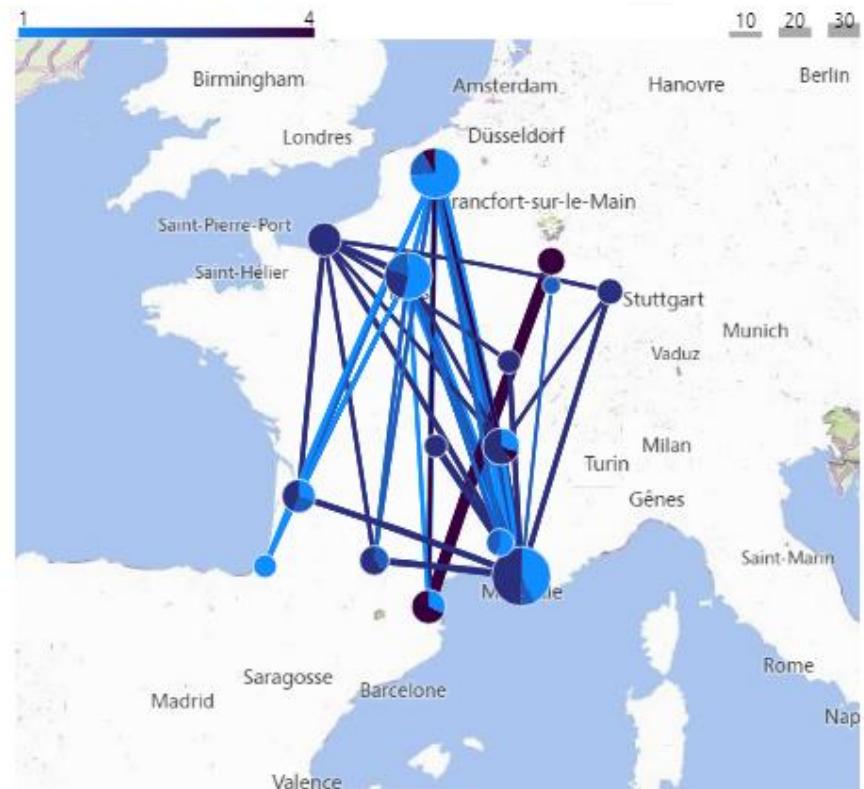
5 10 15

Multimodal transport offer (rail)

63 different daily trips



All multimodal transport offers



- Novatrans (27)
- T3M (18)
- Naviland (32)
- VIIA (6)

Results

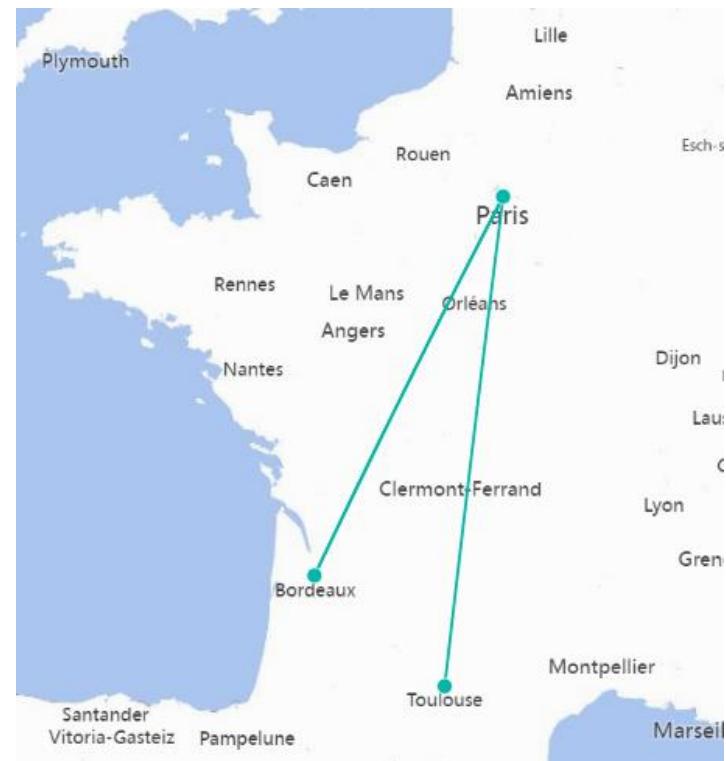
Comparison of 3,294 constrained trips

Rail trips

- 7% depart after 7pm
- 41% arrive before 7am

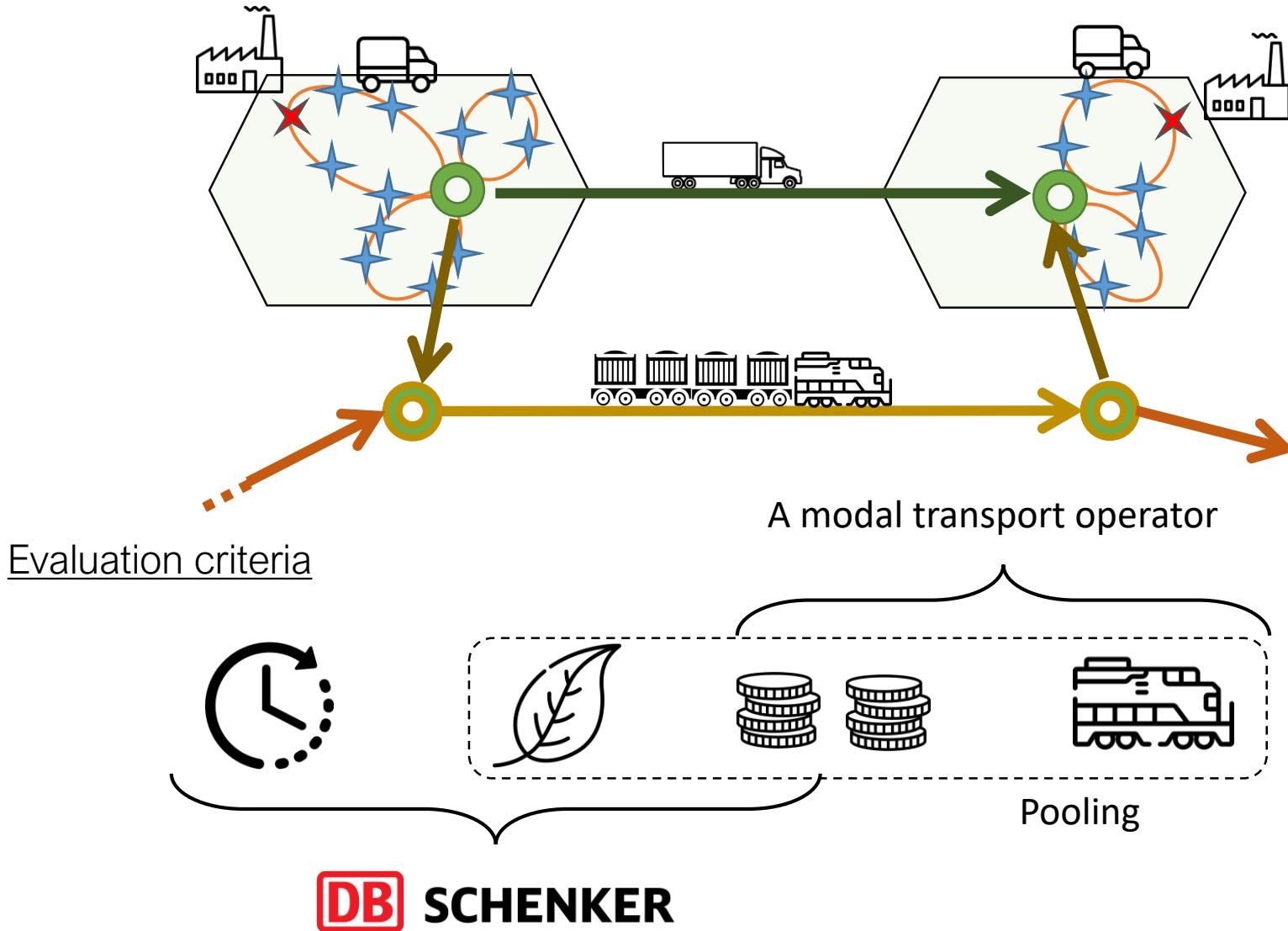
In the current offer, 2 (3?) routes are compatible with the above criteria

Bordeaux	Paris	T3M
Paris	Bordeaux	T3M
Paris	Toulouse	T3M

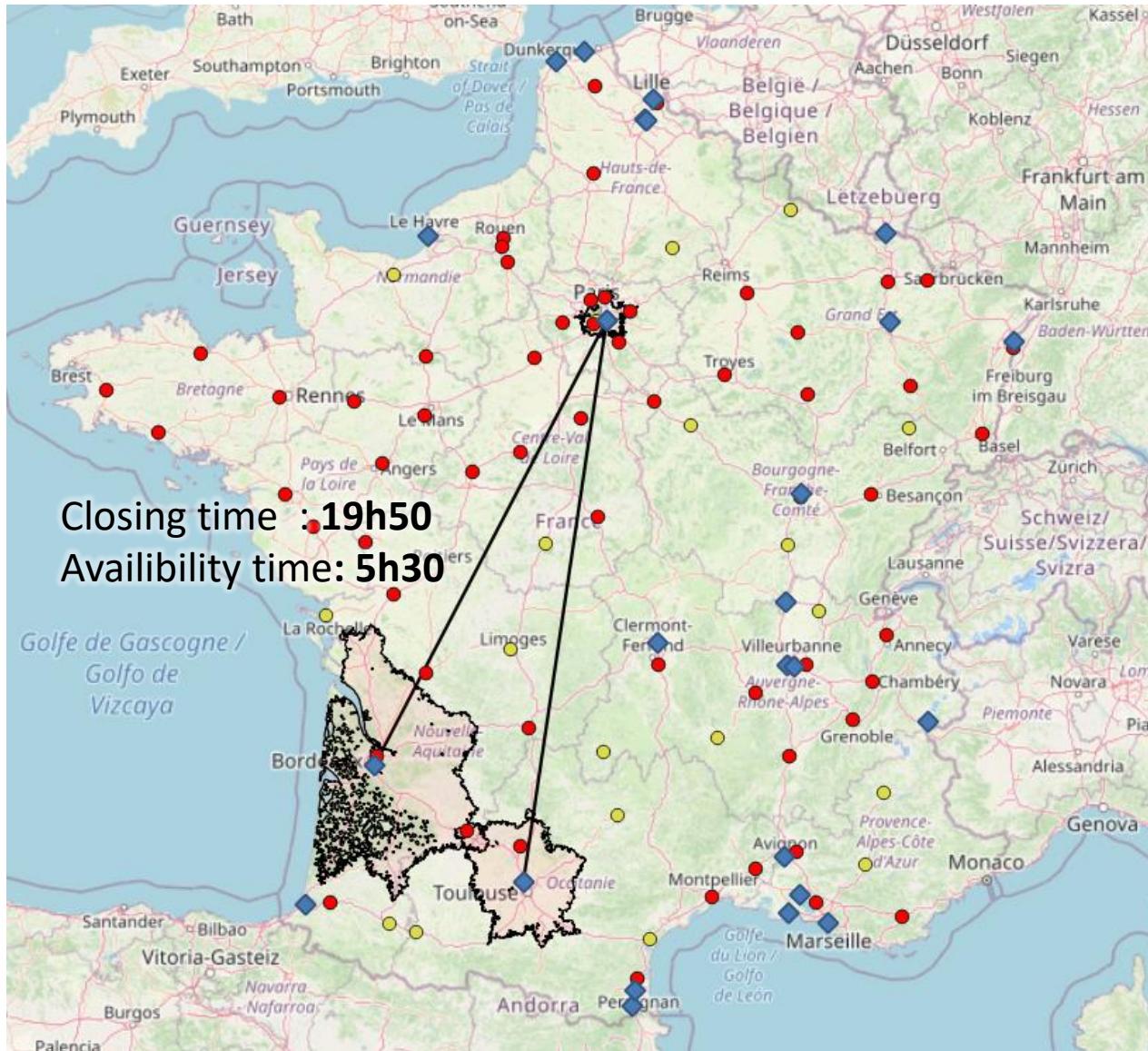


Current rail offer on D+1

Evaluation of the Paris – Bordeaux axis



Current offer – time slot 7pm → 7am

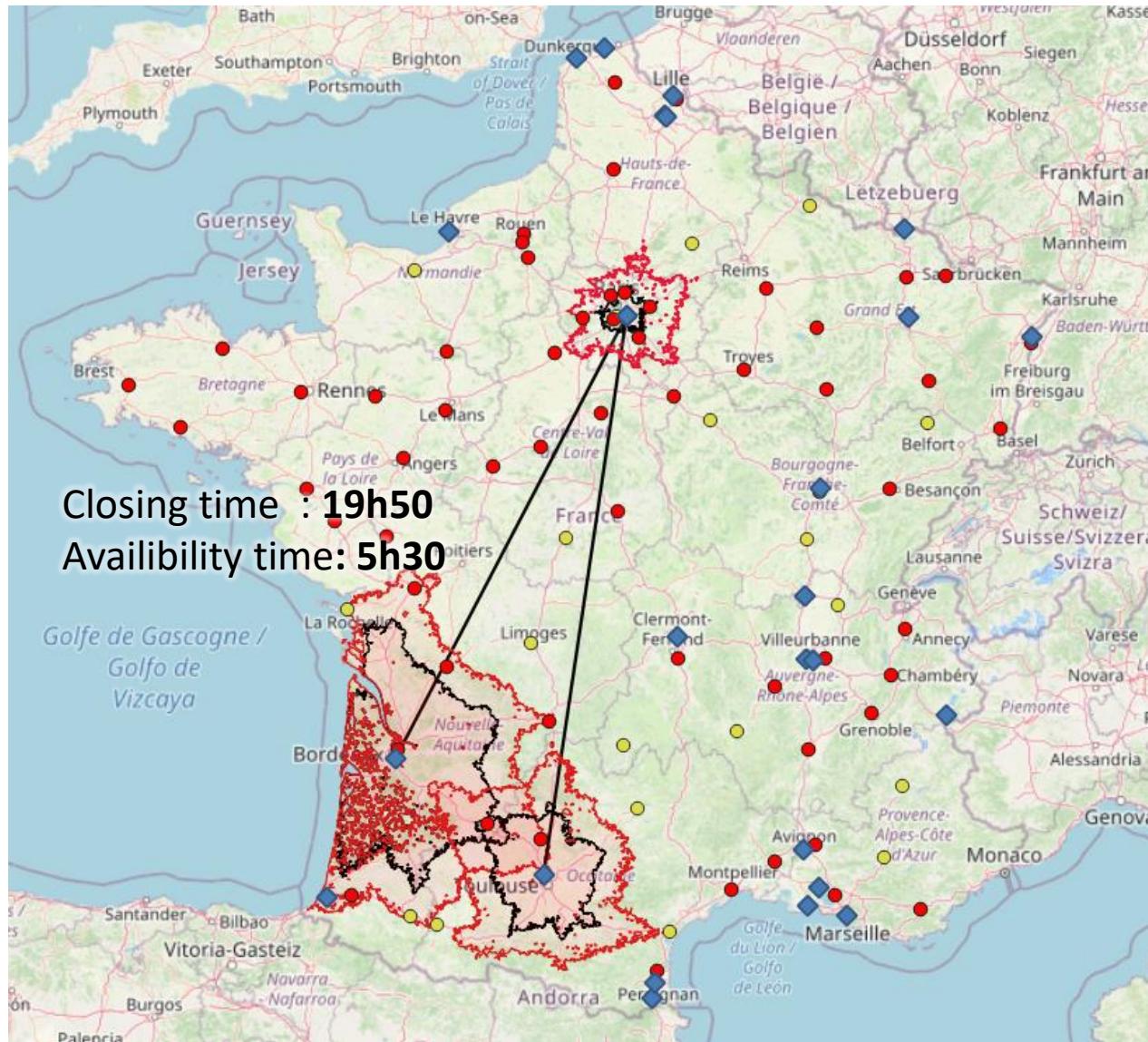


Paris – Bordeaux

50 min for the pre-routing

1h30 for the post routing

Current offer – time slot 6:30pm → 7:30 am



Paris – Bordeaux

1h20 for the pre-routing

2h for the post routing

Results - Paris ⇄ Bordeaux axis

Studied scenarios (from DB Schenker's point of view)

S0 - Reference



100% Truck

S1 - the most favorable



Train: the ratio of the occupation

Truck: only pre and post routing

S2 - the less favorable



Train: the whole train

Truck: AR from the agency

Results

Direction	Time slot	Number of connections	Emission [TCO2equi]		Cost	
			S1/S0	S2/S0	S1/S0	S2/S0
Paris - Bordeaux	19h - 7h	3	-93%	-84%	0.3%	737.2%
	19h30 - 7h30	20	-68%	-37%	0.2%	110.6%
Bordeaux - Paris	19h - 7h	3	-95%	-90%	0.3%	737.2%
	19h30 - 7h30	3	-93%	-84%	0.3%	737.2%

Conclusion – expérience DB Schenker (1/2)

~2,000
daily trips

~200
daily trips near a multimodal hub

DB Schenker

3
daily connections on D+1
2 railway axes

Current offer

Conclusion – expérience DB Schenker (2/2)



Combined transport offer does not cover the national territory (11% of DB Schenker's connections)
Offers and needs do not match (99.8% of DB Schenker's connections cannot be switch to rail)
Localization of the terminals vis-à-vis the intermodal platforms



How to improve pre and post routing (mutualization with other flows)?
Cost of the service, how to make it attractive?
Availability of multimodal platforms (Valenton is saturated - Paris)
For whom is the combined transport offer made (in France)?

Should combined transport be adapted to courier services, which represent only
a fraction of logistics?

Projet Chargeurs

Peut-on augmenter la part du rail ?

Sur quels axes ?

Si impossible, quels sont les points bloquants?

Mutualisation comme clef de la réussite

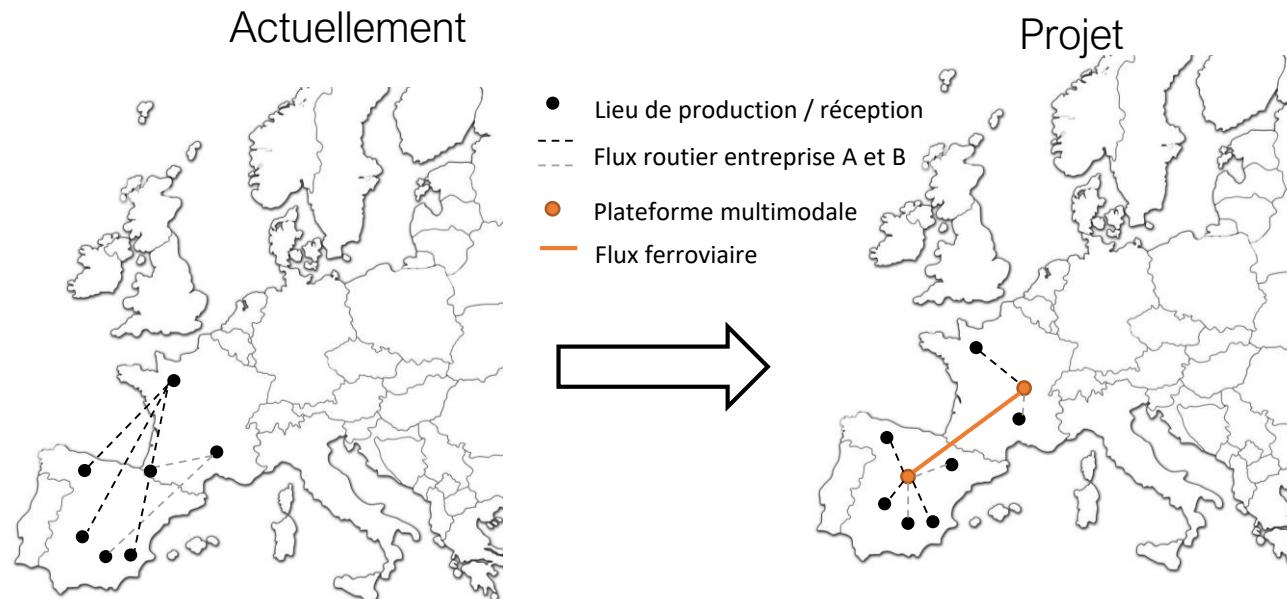
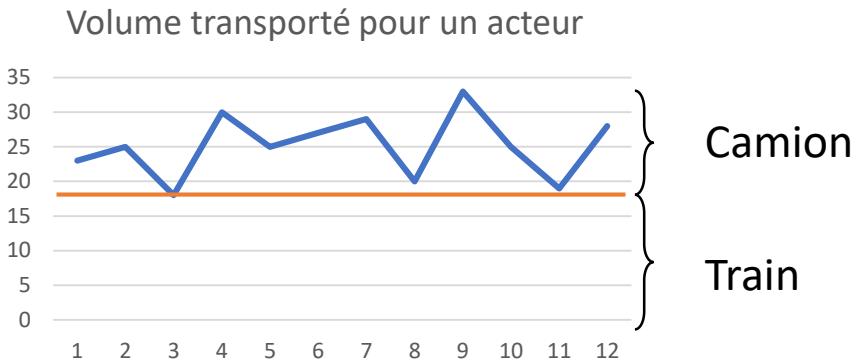
Volonté de mettre en application si cela est possible

Mise à disposition de données de 8 chargeurs (industriels)



Méthodologie

1. Identification des flux minimaux par acteur
2. Mise en commun de l'ensemble des flux
3. Identification des axes forts
4. Identification d'un parcours ferroviaire sur les axes forts (plateforme départ – plateforme arrivée)
5. Approche théorique des gains en émission (et coût économique)



Routier vs Ferroviaire en chiffre



92 g.CO₂e/T.km

Source: FNTR, 2017



17 g.CO₂e/T.km

Source: TREMOD 6.14

59,28 €/km

Pour 44 camions
Pour 1 camion -1,35 €/km

Source: CNR, 2021

? €/km

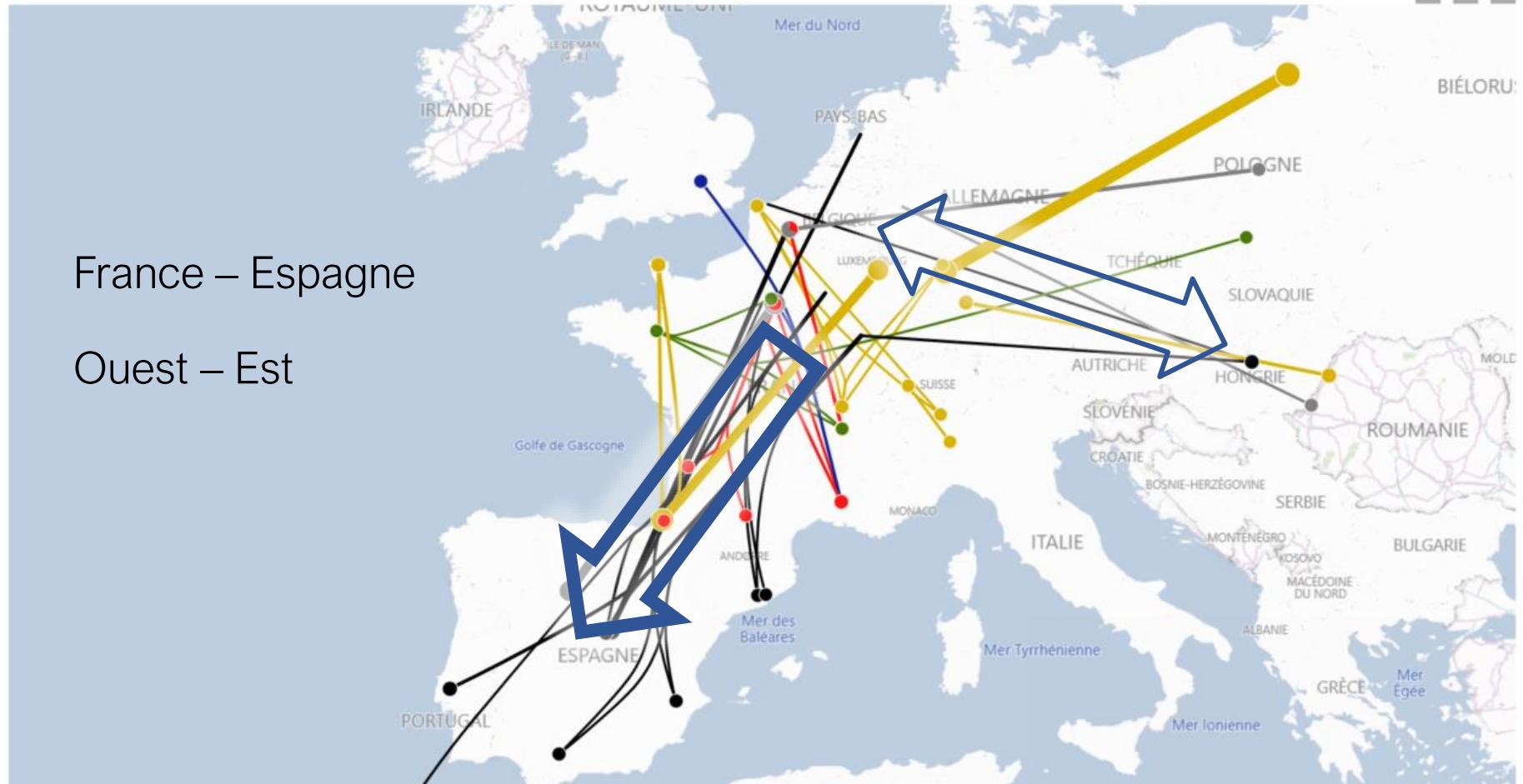
Sans le pré et post acheminement

Source:

44 UTI = 1 train

Analyse des flux

Nombre de d'UTI par train

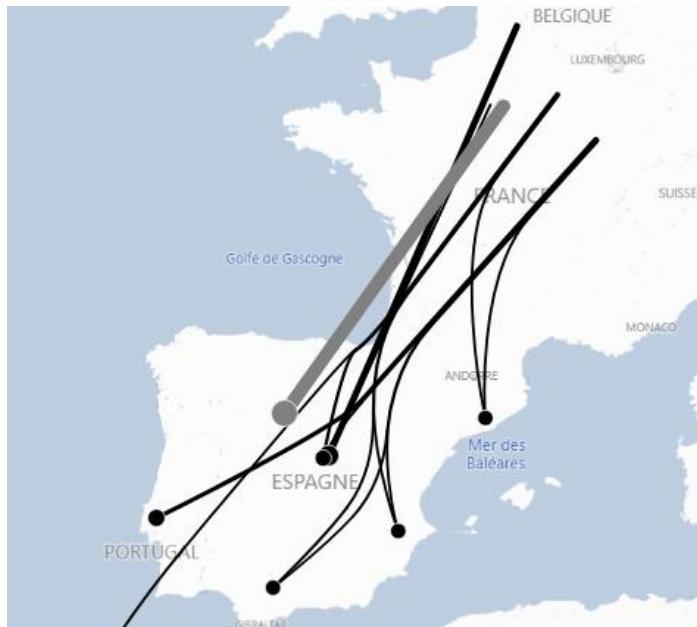


Flux des différents chargeurs en fonction du nombre d'UTI par train

France => Espagne



3 fois par semaine



Paris Valenton – Madrid Abroñigal



48 UTI Aller



-50%

58 T.CO₂e économisé*
par trajet



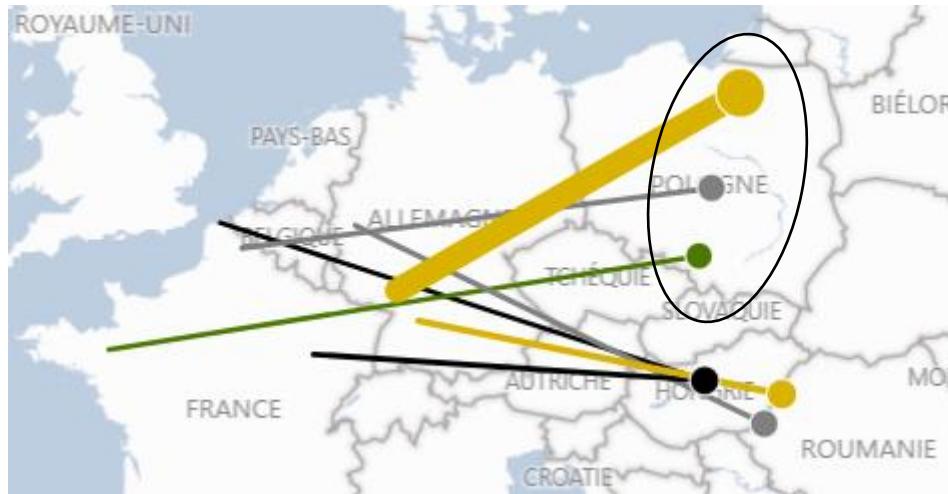
-22% pour le ferroviaire

Seulement 20 UTI retour

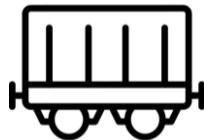
Ouest => Est (Nord)



2 fois par semaine



Bettembourg - Varsovie



35 UTI Aller



35 T.CO₂e économisé*
par trajet



Coût similaire

*Le non remplissage complet
du train (seulement 35 UTI)
engendre un surcoût par UTI*

38 UTI retour

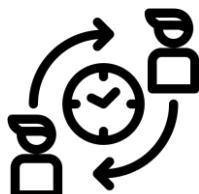
General conclusion



Cargo bikes



Trains



A major player structures the flow, the benefit comes from minor players that are added. One needs the other



Volume, scale of flows (distance)



Carriers already pool their flows in low-density areas via subcontractors

Mismatch between the expectations of shippers and rail carriers (time, flexibility, service level)

Shippers are more willing to organize themselves to use the railways

