

MED ATLANTIC ECOBONUS



Co-financed by the Connecting Europe
Facility of the European Union

SHORT PRESENTATION

On a possible common EU approach to eco-incentive measures

March, 2019

Datasheet

Project	MED ATLANTIC ECOBONUS (2014-EU-TM-0544-S)
Call	CEF 2014
Type	Policy study
Member States	SPAIN, ITALY, PORTUGAL, FRANCE
Beneficiaries	Puertos del Estado (ES) Ministero delle Infrastrutture e dei Trasporti (IT) Instituto da Mobilidade e dos Transportes (PT) Ministère de la Transition Écologique et Solidaire (FR)
Implementing bodies	Rete Autostrade Mediterranee S.p.A. Rina Services S.p.A.
Coordinator	Puertos del Estado (ES)
Schedule	Start date: July 2015 End date: December 2018
Budget	1,543,838 € (Funded 50%)
Contact	mae.project@puertos.es

What is MAE Action...

- **Policy study** intended to the debate (ends at proposal level)
- Promoted by **Portugal, Spain, France and Italy** (Ministries of Transport)
- ➔ Proposing a **common EU approach on eco-incentives measures based on actual socio-environmental merits** to foster sustainable freight transport services (open to all modes of transport and EU regions)
- ➔ Delivering a complete example (**ex-ante analysis**) taking the motorways of the sea in the West-Med and the Atlantic regions to prove the impacts of the approach

MAE approach. Setting

FOSTERING SUSTAINABLE FREIGHT TRANSPORT SERVICES: Since 1991 (white papers)

Goals: reducing carbon emissions, air pollution and social costs (congestion, ...)

❑ **Regulation:** setting market standards for all modes of transport as regards socio-environmental performance (EURO standard, Sulphur Directive, etc.)

❑ **Incentives:** stimulating sustainable behavior of the market

i. Charging (stick) Directive 1999/62/EC

ii. Grants (carrot)

○ Compensating costs (for the market viability):

- Capital costs (funding gap principle, CEF)
- Operating costs (“start-up aid” principle, Marco Polo) → terminated (EU)

○ Targeting actual socio-environmental outcomes (in market conditions):

- Eco-incentive schemes (to accelerate the market uptake)

iii. Other financial support (EFSI, financial instruments,...)

MAE approach. Common principles

Main REFERENCES:

- Recommendations from EC and ECA after [Marco Polo program](#)
- Regulation EU 1315/2013 and Reg EU 1316/2013 on the [TEN-t guidelines/CEF](#)
- Regulation on [State aids](#) (art. 107 and art. 93) and further interpretation from EC Guidelines

Main PRINCIPLES:

- [No market distortion](#)
- [Targeting actual socio-environmental outcomes](#) in market conditions
- [Incentive calculation](#) based exclusively on demonstrated socio-environmental merits (measuring and monetizing external costs savings)
- [Technologically agnostic](#) on how the environmental merit is achieved
- [Co-responsibility from MS](#) (implementing and co-financing)
- [Transferable](#) to all EU regions and all modes of transport (regional approach)
- [Compatible](#) with state aid rules
- [Funding](#) conditional upon results

MAE approach. Common methodology

In addition, **granting EU financial support** to any eco-incentive action shall be conditional to an **ex ante analysis, based on relevant tools**, showing whether and to what extent there is an EU added value (ECA report)



MAE example

DEFINITION:

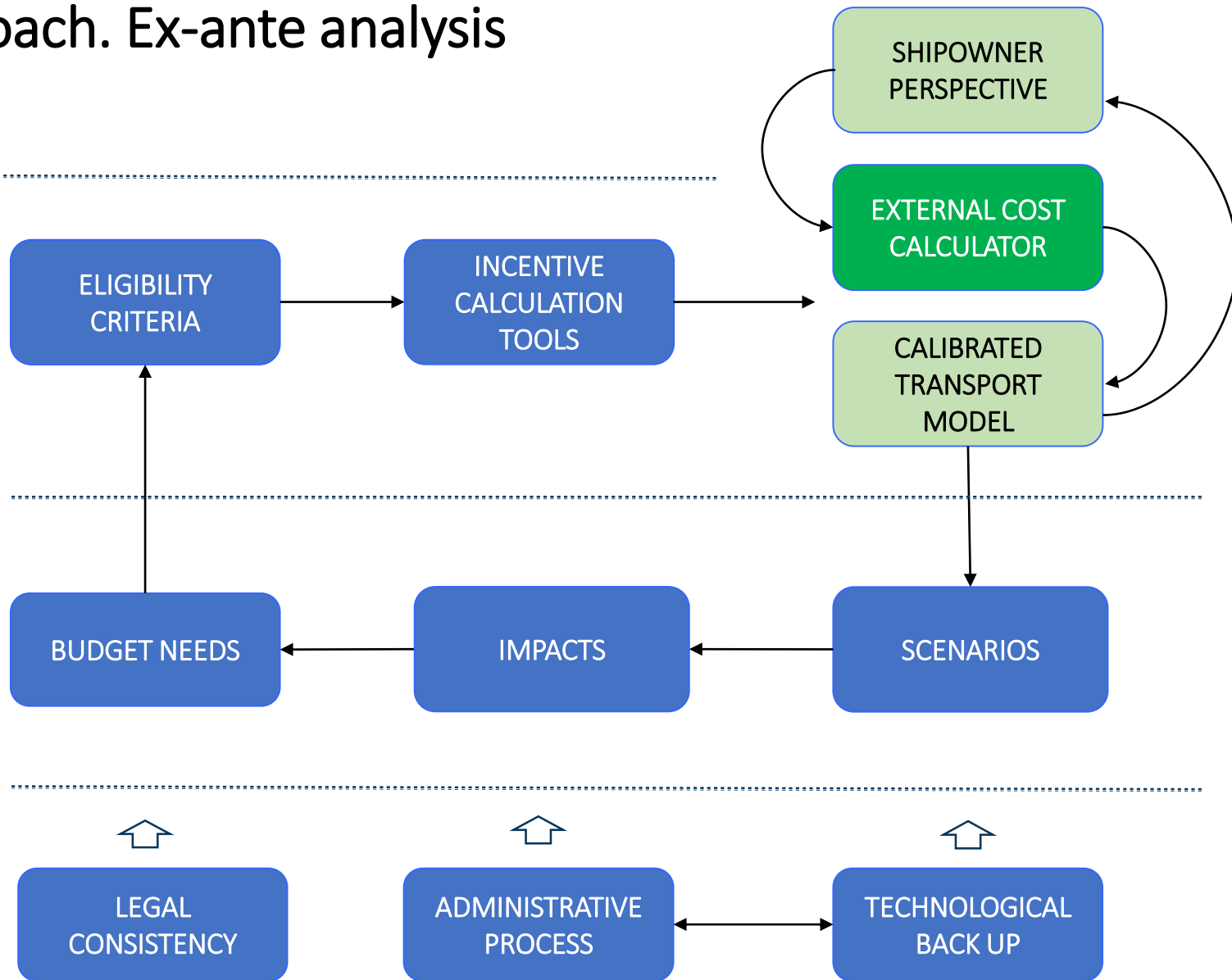
1. **Targeted market:** ro-ro/ferry motorways of the sea servicing alternative routes to the road transport in the West Mediterranean and the Atlantic regions
2. **Goal:** greener performance of the maritime leg (while securing modal balance)
3. **Socio-Environmental merit incentivized:** External costs savings from **freight units using the maritime service compared to the road-only alternative** due to a green action in the maritime leg

MAE approach. Ex-ante analysis

DEFINITION

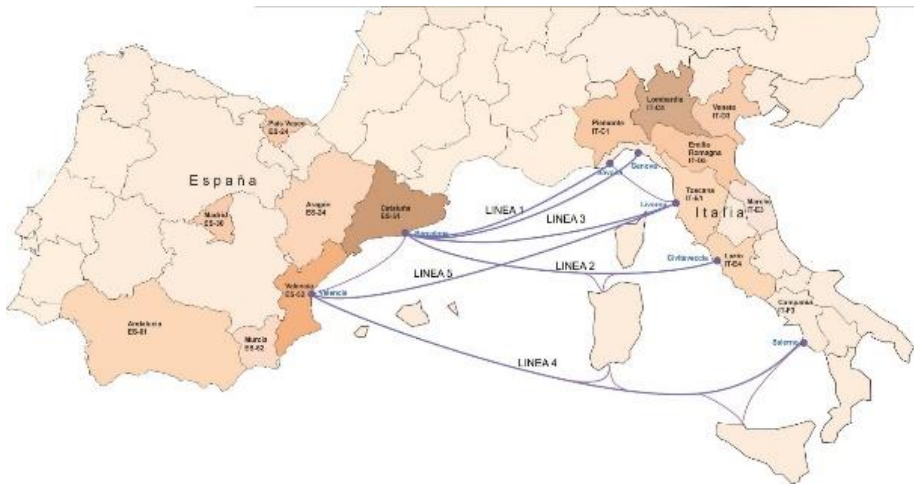
SIMULATION

IMPLEMENTATION



MAE example. Definition

WEST MED REGION



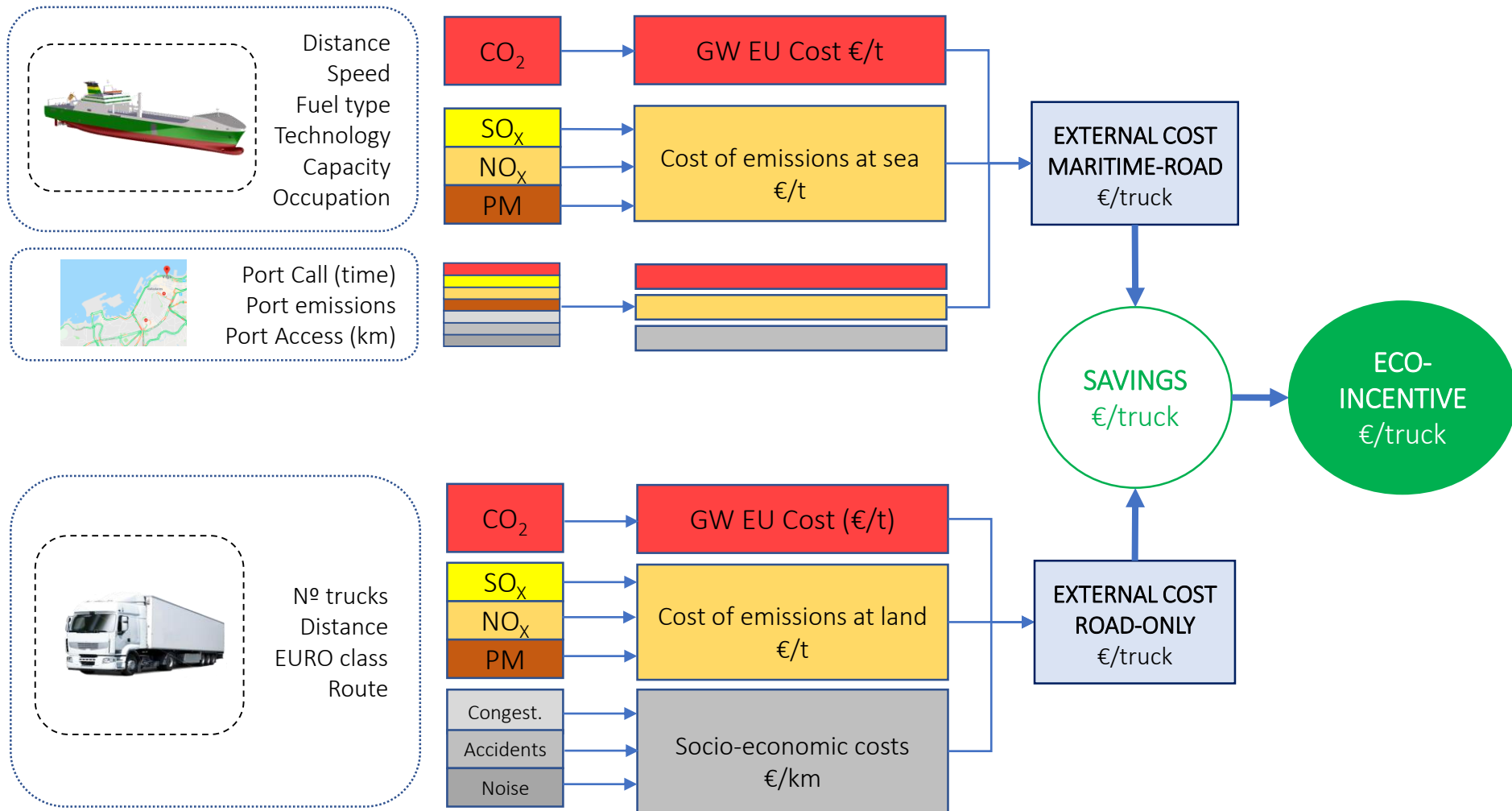
Relevant eligibility criteria:

- Only for trucks using the maritime services. **Road is the direct beneficiary → Demand approach (IT Ecobonus)**
- Only for maritime services demonstrating a socio-environmental merit **due to a green action in the maritime leg**. Such merit shall be quantified using a **External Cost Calculator (TOOL_1)**

MAE example. External cost calculator

- Designed *ad hoc* to estimate the socio-environmental merit which is incentivized
- Using EU references (EC's Handbook of external costs)
- External costs considered: greenhouse gases (CO₂), air pollution (NOx, Sox and PM) and social costs (congestion, accidents and noise only for the road-only alternative).
- External costs of infrastructure are not considered
- Prepared to measure the main possible green actions to be taken by the shipowners (technology and not technology based)
- Featuring the specific performance for each vessel
- Accepting direct values if they are provided
- Including impacts at ports due to road access (urban areas) and vessels during port call.
- Allowing simulation with different values of CO₂ cost (significant gaps depending on the criteria used)

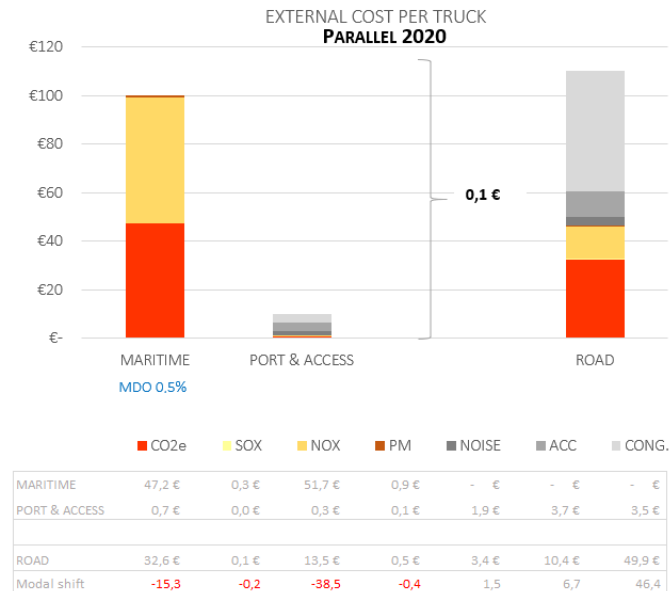
MAE example. External cost calculator (cont.)



MAE example. External cost calculator (cont.)

Route ---->	Parallel	
MARITIME DATA		
SHIP	Lane meters	3000
	Occupancy*	70%
	Pax	0
	New Veh	0
FUEL		MDO 0.5%
REDUCTION TECH.		SCRUBBER
SPEED		18
FUEL CONSUMPTION	t/day	46
*Occupancy: Set 70% as default		
ROAD DATA		
NUMBER OF TRUCKS		140
NUMBER OF TRUCKS equivalent		140
FUEL CONSUMPTION	l/km*100	36,0
EURO STANDARD		2020
CO _{2eq} VALUE	€/t	34
Include: <input checked="" type="checkbox"/> SOCIO-ECONOMIC Direct entry: <input type="checkbox"/> USE DIRECT ENTRY Cold Ironing: <input checked="" type="checkbox"/> ON		

EXTERNAL COSTS		Paralel 2020					
	CO ₂ e	SO _x	NO _x	PM _{2,5}	DISTANCE	TIME	
	t		kg		km	hrs	days
MARITIME	194,3	12,5	3.000,3	20,5	1.000	31,0	1,3
PORT & ACCESS	0,0	0,0	0,0	0,0	32	6,0	0,3
ROAD	134,1	0,9	199,3	2,5	1.000	27,8	3,1
MARGINAL EXTERNAL COST ESTIMATION							
	ENVIRONMENTAL				SOCIO-ECONOMIC		
€/veh 1000 Km	CO ₂ e	SO _x	NO _x	PM _{2,5}	NOISE	ACCIDENTS	CONGESTION
MARITIME	47,2 €	0,3 €	51,7 €	0,9 €	- €	- €	- €
ROAD	32,6 €	0,1 €	13,5 €	0,5 €	3,4 €	10,4 €	49,9 €
€ veh trip							
MARITIME	47,2 €	0,3 €	51,7 €	0,9 €			
PORT & ACCESS	0,7 €	0,0 €	0,3 €	0,1 €	1,9 €	3,7 €	3,5 €
ROAD	32,6 €	0,1 €	13,5 €	0,5 €	3,4 €	10,4 €	49,9 €
TOTAL EXTERNAL COST ESTIMATION							
€/veh	ENVIRONMENTAL				SOCIO-ECONOMIC		TOTAL
MARITIME	100,0 €						100,0 €
PORT & ACCESS	1,1 €				9,0 €		10,1 €
ROAD	46,6 €				63,6 €		110,2 €
Modal shift	↓ -54,5 €				↑ 54,6 €		↑ 0,1 €



Input tables

Output tables

Output chart

- Results are presented in **€ per unit** comparing the road-only vs maritime-road
- The overall external cost savings per unit (€) returns the **value of the eco-incentive** when using a specific maritime service

MAE example. Scenarios

GREEN SCENARIO

- All vessels **switch to LNG** → **MAXIMUM ECO-INCENTIVE GIVEN** (*)
- **Green Actions** (maritime leg) → **343,0 M€**
- Sea rates are maintained → **Modal shift effect**

2020

5 years period

2024

BASE SCENARIO

- **No green action** in the maritime leg → **NO ECO-INCENTIVE GIVEN**
- Strict compliance with sulphur directive → “Regulation merit”
- All vessels using 0,5% sulphur fuel (more expensive)
- Average increase of 12% in the sea rates → **Modal back shift effect**

(*) LNG is taken just as example, to provide maximum budget needs (from today's perspective LNG is the maritime cleanest technology available on deployment)

→ **IMPACT ASSESSMENT = GREEN SCENARIO – BASE SCENARIO** (“regulation merit”)

MAE example. Simulation exercise (eco-incentives)

Eco-incentives in the **GREEN SCENARIO**

Line	Region	Eco-incentive (€/unit)	Discount (%)
Valencia Salerno	West Med	161	23
Leixoes Zeebrugge	Atlantic	146	12
Lisbon Zeebrugge	Atlantic	123	10
Valencia Livorno	West Med	92	13
Vigo-Nantes	Atlantic	89	12
Barcelona Civitavechia	West Med	86	12
Barcelona Livorno	West Med	84	12
Gijon-Nantes	Atlantic	67	11
Santander Portsmouth	Atlantic	60	7
Barcelona Genoa	West Med	52	10
Bilbao-Zeebrugge	Atlantic	44	4

Great variety of intensities:

- **Geographical factors:** the maritime distance and the 'shortcut' over the road-only route
- **Other factors** (behaving): Vessels' capacity and speed

The eco-incentives are simulated as **virtual discounts over the sea rates**, using a **Calibrated Transport Modelling tool (TOOL_2)**

MAE example. Calibrated transport model

- Design and calibrated *ad hoc* to the **targeted market**
- Aimed at replicating the market performance and **simulating the effects of the eco-incentive measure**
- Following the classic **four-step transport modelling approach**: (i) global mobility, (ii) spatial distribution, (ii) modal choice and (ii) route assignment, including the shares between lines). The last two models using logit formulations.
- **GDP evolution** (per zone), **transport prices** (road and maritime) and **frequencies** (on the maritime services) as the main explanatory variables.
- The result of the calibration is valid (the tool is OK for simulation)

REAL (e.g. West med)

AÑO	TOTAL	Solo carretera	Autopista del Mar	LINEA 1 BCN-GEN	LINEA 2 BCN-CIV	LINEA 3 BCN-LIV	LINEA 4 VAL-SAL	LINEA 5 VAL-LIV
2008	8.931	5.757	3.174	1.113	875	488	524	174
2009			2.687	468	1.090	493	394	243
2010	8.318	5.631	2.687	341	1.189	451	445	262
2011			3.290	437	1.126	636	425	666
2012			2.771	181	1.010	506	364	710
2013			2.805	67	1.189	395	398	756
2014			3.266	29	1.281	473	541	943
2015			3.840	69	1.350	780	635	1.006
2016			3.410	30	1.282	662	600	836
2017			3.711	32	1.384	715	660	920

ESTIMATED (e.g. West med)

AÑO	TOTAL	Solo carretera	Autopista del Mar	LINEA 1 BCN-GEN	LINEA 2 BCN-CIV	LINEA 3 BCN-LIV	LINEA 4 VAL-SAL	LINEA 5 VAL-LIV
2008	8.978	5.796	3.182	1.125	815	496	415	331
2009	8.095	5.425	2.670	604	990	521	308	247
2010	8.318	5.388	2.930	410	1.276	621	338	285
2011	8.297	5.079	3.218	474	1.154	853	269	468
2012	7.812	5.134	2.678	214	1.146	535	273	511
2013	7.601	4.875	2.726	74	1.104	576	371	600
2014	7.794	4.456	3.338	86	1.345	660	501	747
2015	8.116	4.261	3.855	83	1.540	706	658	868
2016	8.492	4.806	3.686	83	1.371	705	657	869
2017	8.917	5.085	3.833	84	1.456	715	704	873

MAE example. Calibrated transport model (cont.)

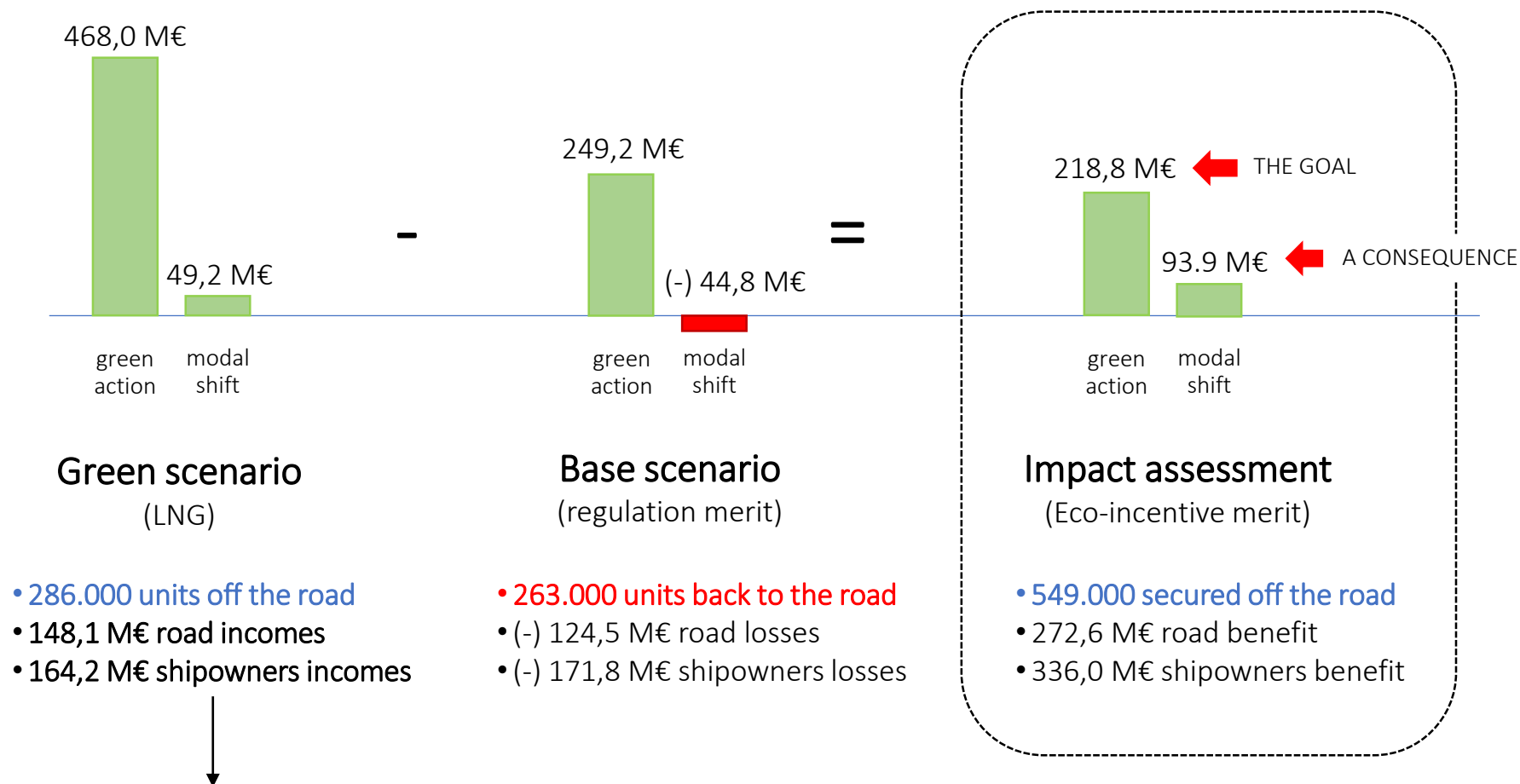
The calibrated transport modelling tool returns the following **values per scenario, per line:**

- TOTAL **EXTERNAL COST SAVINGS (i)**, due to the green action
- TOTAL **EXTERNAL COST SAVINGS (ii)**, due to the modal (back) shift effects
- TOTAL **NUMBER OF UNITS**, shifted or back shifted (+) and (-)
- TOTAL **ECO-INCENTIVE GIVEN**, i.e. the budget needs
- TOTAL **ADDITIONAL INCOMES** to the shipowners

As mentioned, the merit credited to the eco-incentive measure is the **difference between the values (impacts) in each scenario** (**ASSESSMENT = GREEN - BASE**)

MAE example. Simulation (main impacts)

EXTERNAL COSTS SAVINGS (accumulated 2020-2024)



To trigger **343,0 M€** investments on green actions → using the **Shipowners' perspective tool (TOOL_3)**

MAE example. Shipowners' perspective tool

- It estimates the financial ratios (IRR, NPV and payback) from the shipowners' perspective in the **green scenario** (i.e. **343,0 M€ additional investments** on green actions to switch vessels to LNG) **comparing the situation with and without eco-incentive**
- The tool has been calibrated with the **additional incomes** as a result of the modal shift effect and the **additional CAPEX and OPEX incurred by the green action** (LNG compared to MGO)
- **Latest references from DNV-GL** have been used for LNG investments
- The fuel cost at the time of the calibration **643 €/ton** for the low sulfur conventional fuel -MGO or alternatively ULSFO- and **472 €/ton** for the LNG - using 25 €/MWh for the molecule and a 5 €/MWh for logistics-
- The weighted average cost of capital (WACC) is simulated at **8%** and the residual value of the investment at **5%**, based on market values.

MAE example. Shipowners' perspective tool (e.g. West Med)

	BCN-GEN	BCN-CIV	BCN-LIV	VAL-SAL	VAL-LIV
	Barcelona Genoa	Barcelona Civitavecchia	Barcelona Livorno	Valencia Salerno	Valencia Livorno
<u>Line details</u>	Mediterranean Sea	Mediterranean Sea	Mediterranean Sea	Mediterranean Sea	Mediterranean Sea
Fuel saving per trip	9.311 €	19.812 €	9.334 €	22.876 €	17.384 €
<u>Induced modal shift</u>	1 K units	33 K units	17 K units	32 K units	22 K units
Unit net contribution	400 €	580 €	540 €	560 €	580 €
<u>Indirect benefits</u>	342.549 €	19.130.713 €	9.035.129 €	17.770.427 €	12.613.527 €
Unit investment	23.362.069 €	29.913.793 €	15.172.414 €	18.103.448 €	18.103.448 €
<u>Incremental LNG inv.</u>	23.362.069 €	59.827.586 €	30.344.828 €	36.206.897 €	36.206.897 €
cost of LNG Kw	667 €	598 €	702 €	754 €	754 €
<u>Annual fuel saving</u>	2.904.954 €	12.362.770 €	2.912.153 €	7.137.159 €	5.423.849 €
Additional income/investment	1%	32%	30%	49%	35%
Additional income/operation	1%	8%	7%	13%	13%
WITH NPV	6.240.147 €	79.797.641 €	6.301.793 €	49.755.647 €	28.498.696 €
IRR	11%	25%	11%	26%	19%
Payback	14 years	5 years	14 years	6 years	7 years
WITHOUT NPV	5.712.920 €	64.441.166 €	-1.198.004 €	35.571.241 €	18.247.189 €
IRR	11%	20%	7%	19%	14%
Payback	14 years	7 years	NEVER	7 years	9 years

- The **financial returns** of the investment are **clearly improved** and the **paybacks are reduced**
- Only in one case the eco-incentive is determinant to the viability of the investment
- The **co-financing rate** for the shipowner is placed over **30%** ⁽¹⁾
- The weight over operating costs remains **within state aid rules limits** for max. intensities

(1) The Genoa-Barcelona line is not considered in this analysis. Most of the route is not eligible (Tangier-Genoa) leading to results that are not consistent

MAE example. Shipowners perspective tool (e.g. Atlantic)

	BIO-ZBR	SAN-PMT	GIJ-NAN	VGO-NAN	LEX-ZBR	LIS-ZBR
	Bilbao-Zeebrugge	Santander Portsmouth	Gijon-Nantes	Vigo-Nantes	Leixoes Zeebrugge	Lisbon Zeebrugge
Line details	Atlantic	Atlantic	Atlantic	Atlantic	Atlantic	Atlantic
Fuel saving per trip	16.188 €	12.960 €	7.372 €	11.509 €	17.129 €	20.642 €
Induced modal shift	10 K units	22 K units	18 K units	22 K units	43 K units	23 K units
Unit net contribution	765 €	612 €	446 €	509 €	883 €	1.172 €
Indirect benefits	7.838.936 €	13.692.791 €	8.204.422 €	11.271.814 €	37.574.383 €	26.692.211 €
Unit investment	18.103.448 €	26.315.789 €	15.172.414 €	15.172.414 €	18.103.448 €	18.103.448 €
Incremental LNG inv.	36.206.897 €	26.315.789 €	15.172.414 €	30.344.828 €	54.310.345 €	18.103.448 €
cost of LNG Kw	754 €	658 €	702 €	843 €	724 €	724 €
Annual fuel saving	5.050.652 €	2.021.721 €	2.300.087 €	5.386.389 €	5.344.146 €	2.146.794 €
Additional income/investment	22%	52%	54%	37%	69%	147%
Additional income/operation	5%	23%	14%	15%	19%	30%
WITH NPV	20.956.322 €	5.123.801 €	14.522.347 €	32.852.529 €	29.565.724 €	24.753.280 €
IRR	16%	11%	22%	22%	17%	34%
Payback	9 years	13 years	5 years	5 years	6 years	3 years
WITHOUT NPV	14.444.700 €	-6.074.107 €	7.944.104 €	23.778.924 €	-643.537 €	3.583.278 €
IRR	13%	5%	14%	17%	8%	10%
Payback	12 years	NEVER	10 years	8 years	NEVER	14 years

- The **financial returns** of the investment are **clearly improved** and the **paybacks** are **reduced**
- In most cases the **eco-incentive** is **not determinant** to the viability of the investment
- The **co-financing rate** for the shipowner is over **50%** in most cases
- The weight over operating costs remains **within state aid rules limits** for max. intensities

MAE example. Final Assessment (by corridor)

Final Assessment (x1000 €) - leverage effect

● tools		PERIOD 20-24			
		ECO-INCENTIVE	IND. INCOMES	GREEN ACTIONS	EXT. SAVINGS
WEST MED		98.324	58.892	162.586	157.714
ATLANTIC		49.813	105.275	180.454	154.983
TOTAL	1 → 148.137 → 2 → 164.167 → 3 → 343.040 → 1 → 312.697 → 1 →				

27,9 M€ on CO₂ reduction

- **549.000 trucks** secured off the MED and ATL corridors:
 - 309.000 in the ATL
 - 240.000 in the WEST MED
- **Market share** (MoS vs “Road-only”):
 - ATL: from 3% to 5%
 - WEST MED: from 31% to 33%

Final considerations. MAE approach

- Giving an additional narrative to the financial support of the [sustainable freight transport services](#) component of the TEN-t with a focus on socio-environmental achievements
- Based on a multilateral and [regional approach](#) (transferable to all EU regions and transport markets)
- Granting aids on the grounds of [actual socio-environmental merits](#) (not as with the **funding gap principle**), thus stimulating the market deployment to decide on those Actions that contribute most to reducing transport external costs
- Making use and deepening the EU references for [measuring and monetizing transport external costs](#) (strengthening consensus around the **EC's handbook of external cost of transport**)
- [Co-responsibility](#) between the MS and EU, with the [MS as promoters](#) on both the implementing and the financing perspectives and the [EU granting a co-finance](#) to the MS
- Giving the possibility to modulate the EU and the MS financial support by means of the scheme's contribution to [decarbonization](#) (global impacts) and air pollution/social costs (local impacts), respectively
- Market oriented thus reducing the risk of demand, which might grant the green actions with [better access to finance](#) (**EU financial instruments**)
- [Intended to the debate...](#) informal contacts made so far with EU institutions (EC and EP) and with relevant stakeholders, influencing the approach. **More debate still needed.**
- If validated, the approach is aimed at being considered within the **working programs of the CEF2** as a basis for eligible Actions on sustainable freight transport services (eco-incentive schemes)

THANK YOU

<http://mae-project.eu>





SUPPORTING SLIDES

MAE common EU approach (basing grants on actual environmental outcomes)

A main aspect of the proposed approach to eco-incentive measures has to do with the way in which the grants are calculated and awarded, irrespective of the type of Actions that are considered as eligible by the funding instruments (for instance CEF). In fact, the MAE example considers green Actions incurring investment costs on LNG vessels (343M€), which is a type of eligible Action within CEF.

In this regard, what is important to be noticed about the approach is that the grant is calculated on the grounds of the actual socio-environmental outcomes attained by the Action. Whereas with the current approach, following the “funding gap” principle, the calculation of the grant is basically based (as regards investments) on the financial needs of the Action to reach the financial break even.

In other words, the eco-incentive approach, as proposed, leaves the financial risk to the market and modulates the grant based on the actual external cost savings that the Action is demonstrating, making the funding conditional upon results (this is why a common reference to the external cost calculations is so critical in this approach).

Conversely, the “funding gap” approach, which for instance is driving the current EU support through the CEF work programs, modulates the grant based on the financial risks that the Action demonstrates, regardless of the intensity of the actual external cost savings that the Action brings.

Therefore, one question which is raised to the debate by the study is whether the funding instruments (for instance CEF) should consider other possible means to award the grants, based on actual socio-environmental merits that could accelerate the uptake of the market towards the greenest Actions possible (the ones with the highest savings, not with the highest financial risks).

As well, under the eco-incentive approach the grant might be directed not directly through the promoter of the Action (supply approach) but also indirectly through the users (demand approach) in order to attain additional effects regarding the optimization and integration of transport which also contribute to improve sustainability.

Basically, these two aspects (enabling grants based on actual socio-environmental outcomes and flexibilizing the funding instrument to allow a demand approach) are the main issues that the MAE study could bring to the debate on CEF2.

Ultimately, in a context where very ambitious environmental targets and strategies are being set (short, mid and long term), the eco-incentive approach for EU/MS grants is just aimed at raising to the debate an additional way to accelerate the transition towards a sustainable transport behaving. Therefore, this approach is not intended to replace the “funding gap” approach in this field (which for instance has proved to be very effective for pilot Actions), but to complement it in order to improve the effectiveness of the different incentive mechanisms supported by the EU and the MS (including charging measures, grants and other financial support such as EFSI, financial instruments, etc.)

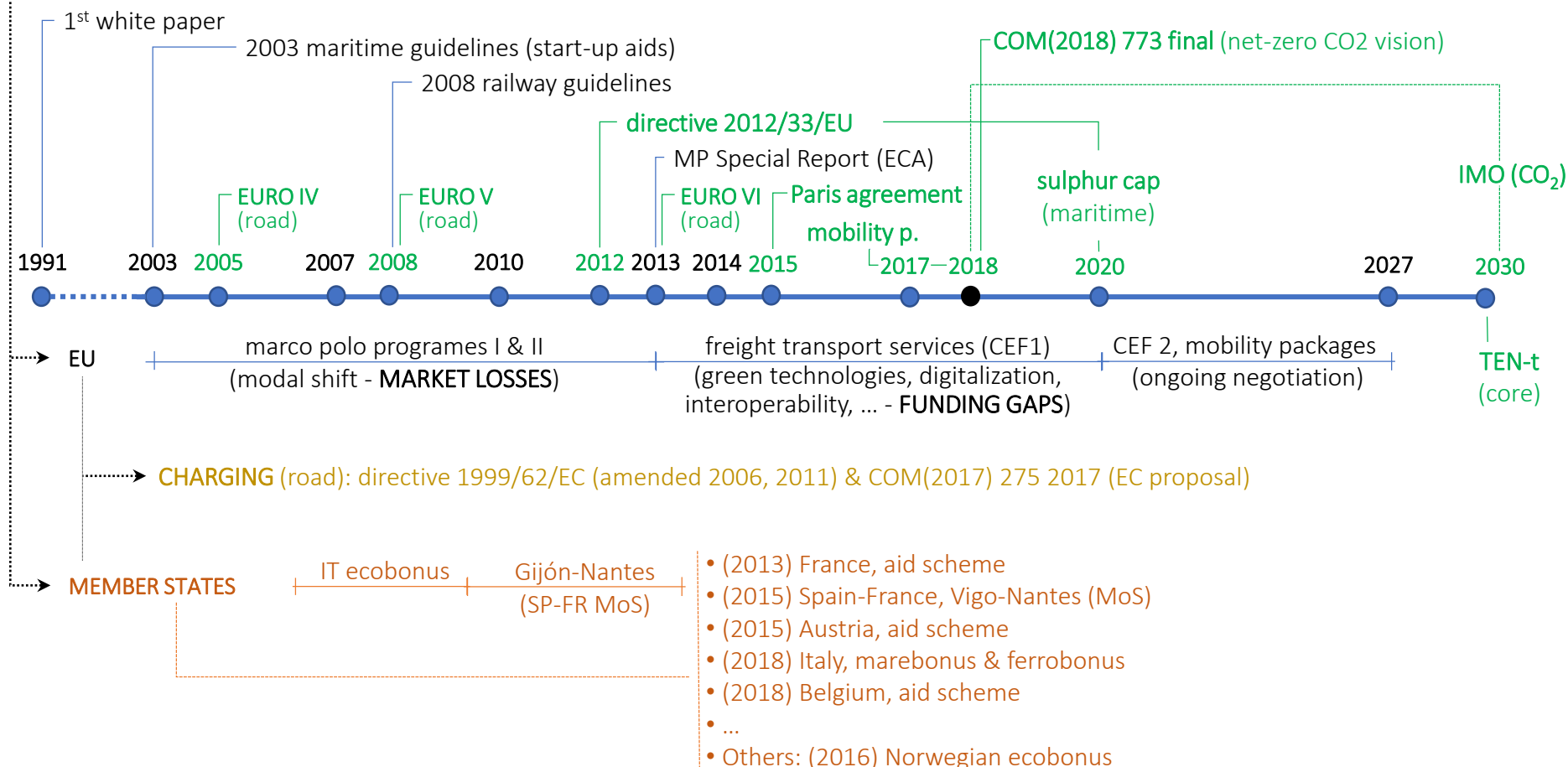


Framework

SUPPORTING SUSTAINABLE FREIGHT TRANSPORT

Goals: reducing carbon emissions, air pollution and social costs

Means of achievement: Integration, Optimization, Modal balance, Resource efficiency, Technology, Clean fuels, etc.



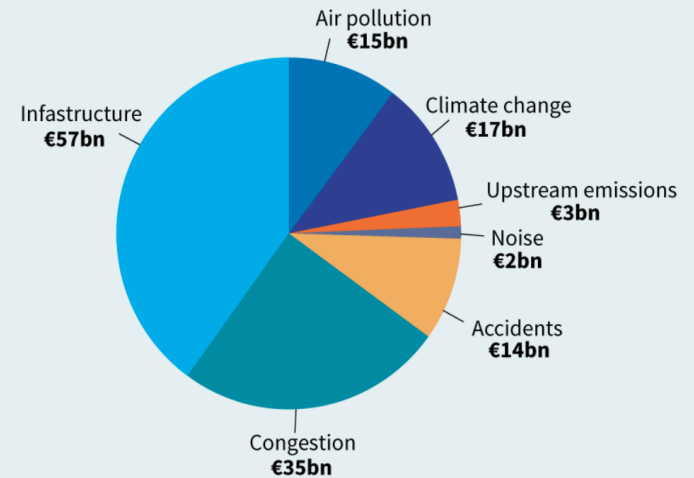
Preliminary assumptions for the MAE example (i)

External costs on infrastructure (provision and maintenance) are excluded for the maritime and the road transport.

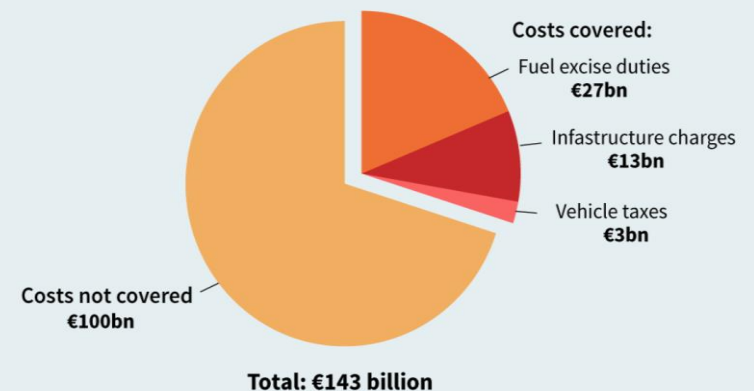
- Maritime transport is already paying for the port infrastructure (port dues)
- Road transport seems to not be paying all infrastructure costs. However, there are charging measures for the road on the debate (COM(2017)0275 on the amending of Directive 1999/62/EC)

Assumption: Level playfield for the modes of transport with regards to socio-environmental externalities

The external costs of heavy goods vehicles (in bn euro)

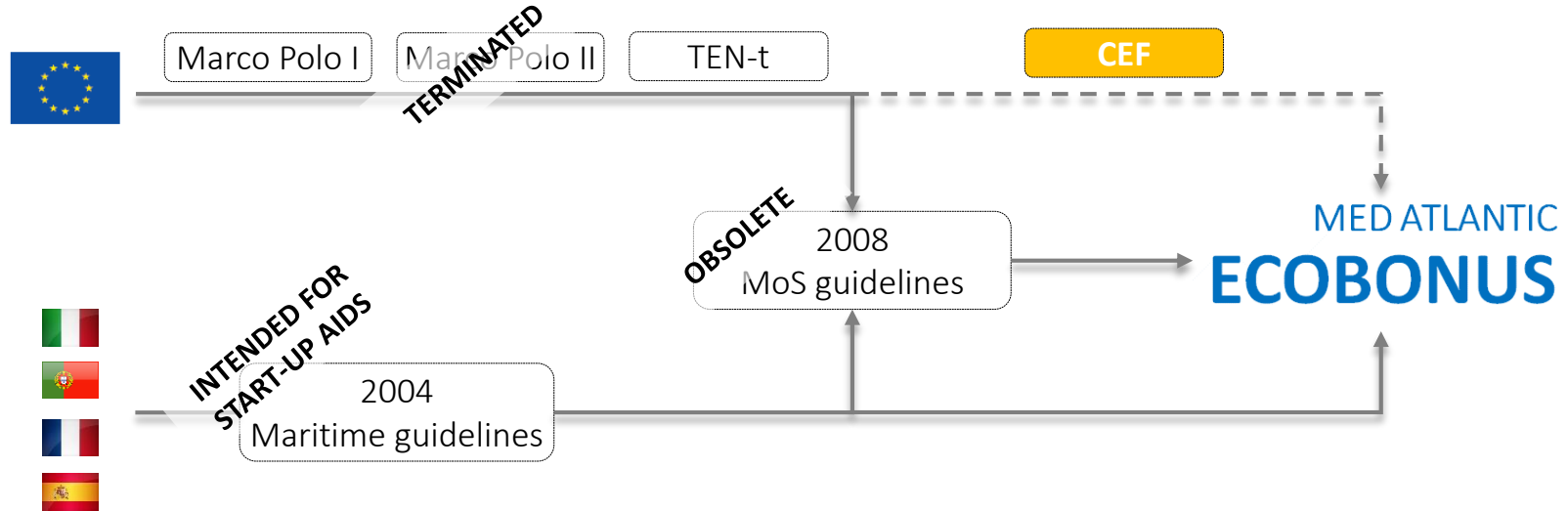


How much of the external costs of trucks are being covered?



Source: CE Delft, 2016. Revenues from HGV taxes and charges in the EU28 in 2013. Addendum to 'External and infrastructure costs of HGVs in the EU28 in 2013', Delft: CE Delft

Preliminary assumptions for the MAE example (ii)

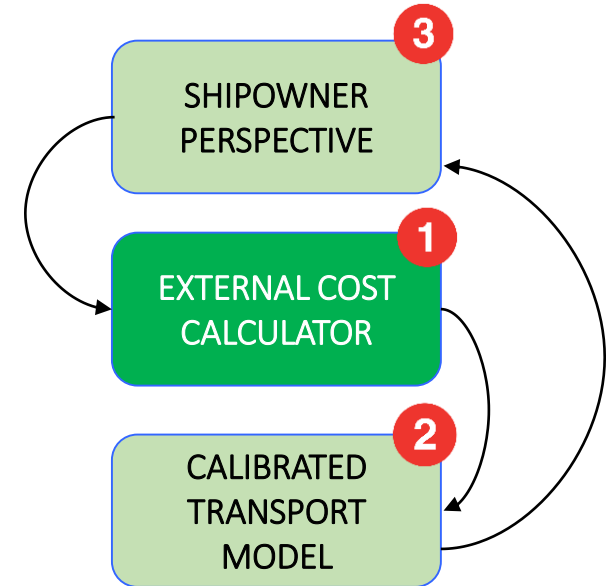


- It is unlikely that the 2004 maritime guidelines are amended (variety of topics)
- 2008 motorways of the sea guidelines are more likely to be amended to meet the CEF standards on aid's maximum intensities and duration
- MAE example takes 5 years as a reference

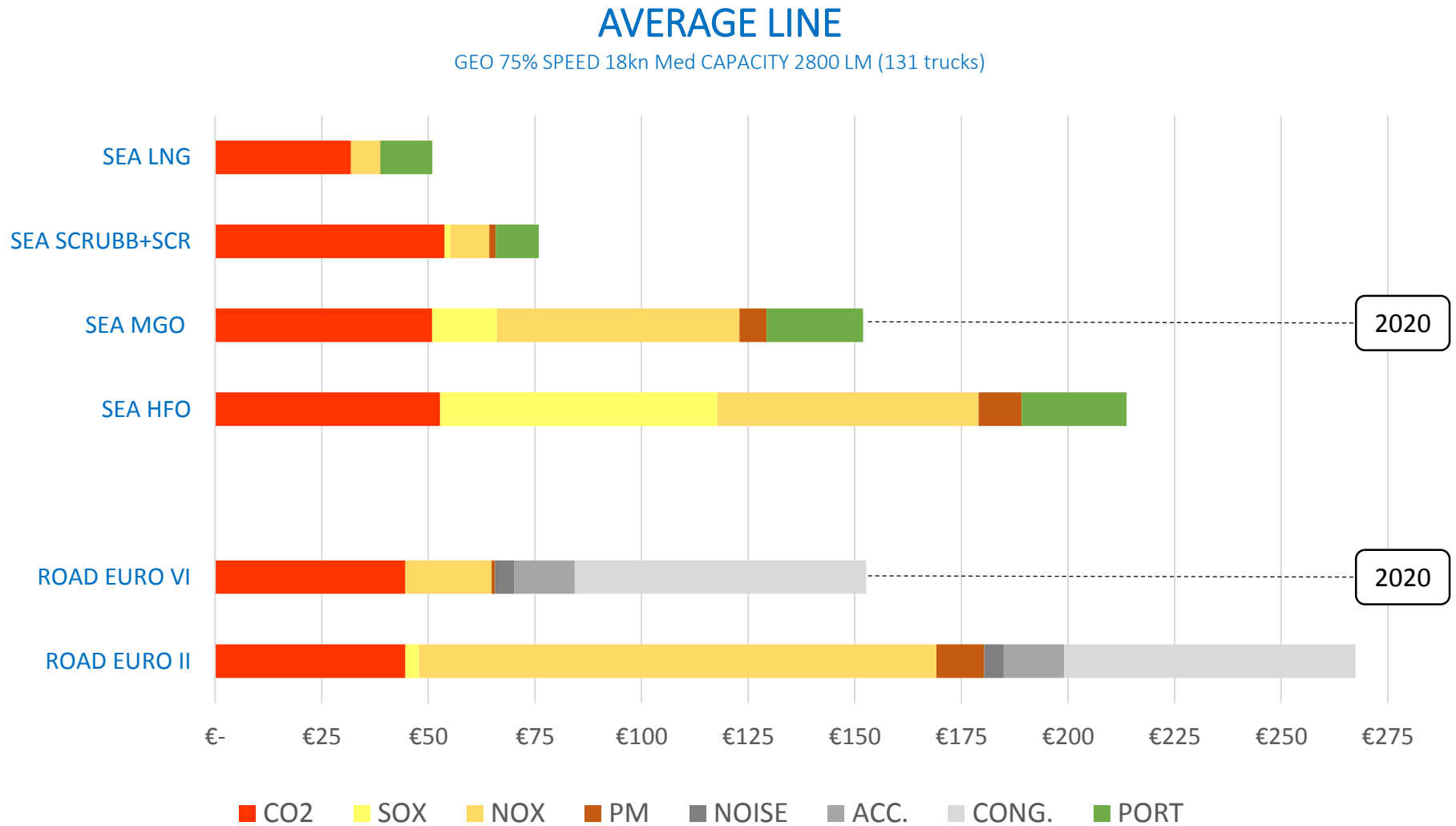
Ex-ante analysis

The simulation implements **THREE TOOLS** in a sequence:

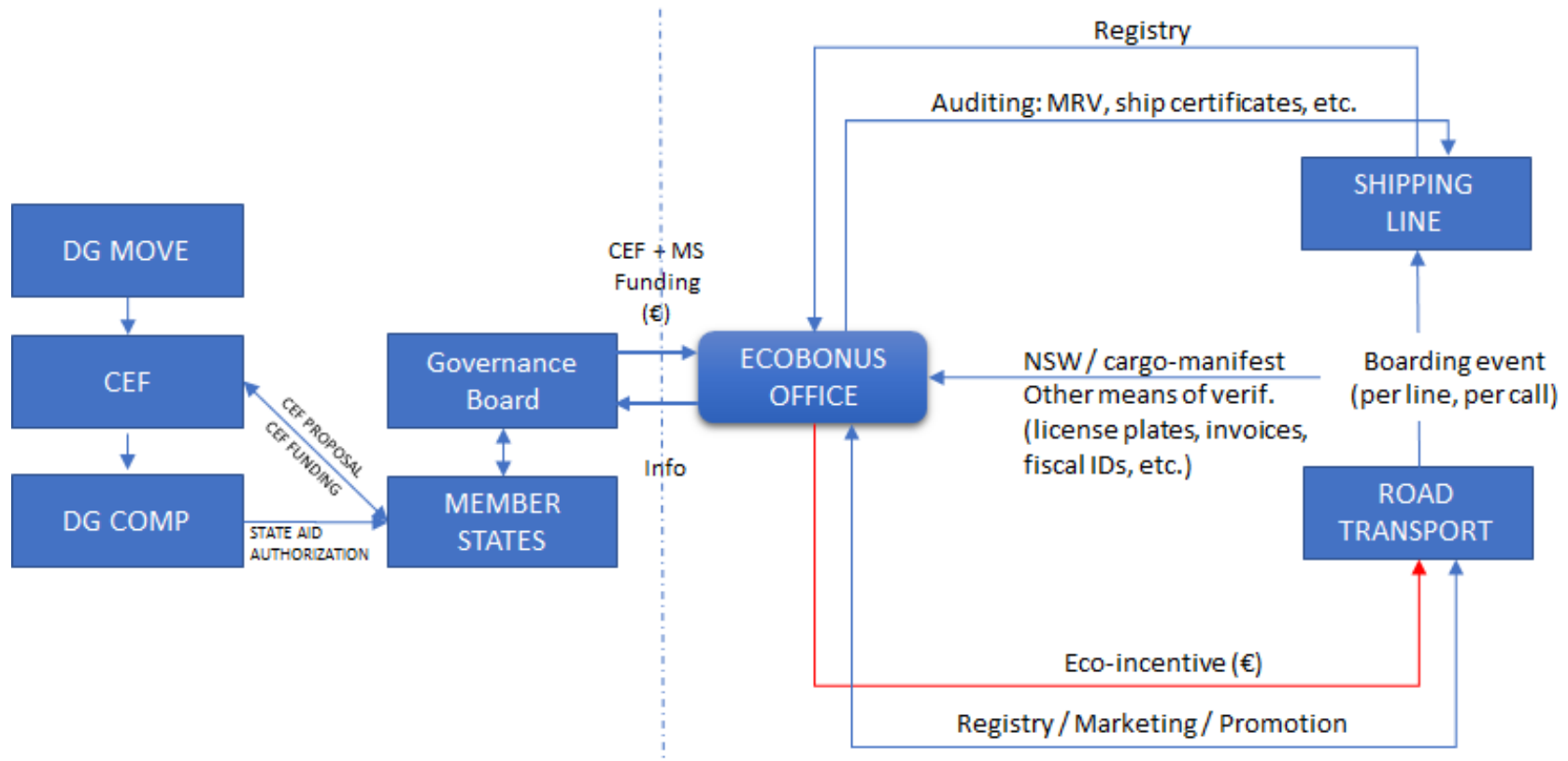
- 1** The **external cost calculator** estimates the merit and calculates the eco-incentive per unit and per specific line
- 2** The eco-incentive feeds the **calibrated transport model** as a virtual discount on the sea rate, returning the following impacts:
 - On modal (back) shift → new shares
 - On the total externalities savings due to (i) the green action (GOAL) and (ii) the modal shift (CONSEQUENCE)
 - On the total eco-incentive given (BUDGET NEEDS)
 - On the additional incomes to shipowners as a result of the modal shift effect
- 3** The **shipowners' perspective tool** performs a basic financial assessment taking the additional incomes against the direct costs that would be incurred by shipowners as a result of the green action



MAE External cost calculator results



Possible scheme implementation



- Minimize the risk of fraud
- Minimize additional bureaucracy
- Demonstrate the performance achieved
- Meet the operational structures of the EU funding program to which the scheme is submitted (for instance CEF)

MAE example. Market share

‘Road only’ and MoS volumes (units x 1000) and shares (%).

Observed (2015-2019) and Simulated values for the base scenario and the green scenario (2020-2024).

Annual average values. West Med & Atlantic

	CURRENT 15-19				WITH ECO-INCENTIVE ALL LNG 20-24				WITHOUT ECO-INCENTIVE 20-24			
	TOTAL	ROAD	MoS	share	TOTAL	ROAD	MoS	share	TOTAL	ROAD	MoS	share
WEST MED	496	344	152	31%	595	397	198	33%	604	445	160	26%
Increase over current					20%	15%	30%	3%	22%	29%	5%	-4%

	CURRENT 15-19				WITH ECO-INCENTIVE ALL LNG 20-24				WITHOUT ECO-INCENTIVE 20-24			
	TOTAL	ROAD	MoS	share	TOTAL	ROAD	MoS	share	TOTAL	ROAD	MoS	share
ATLANTIC	2.218	2.146	73	3%	2.676	2.538	138	5%	2.684	2.600	83	3%
Increase over current					21%	18%	89%	2%	21%	21%	14%	0%

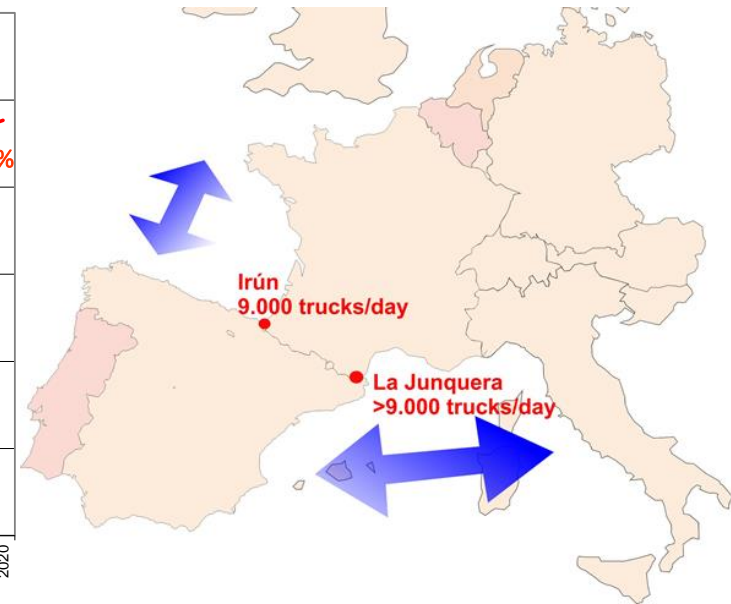
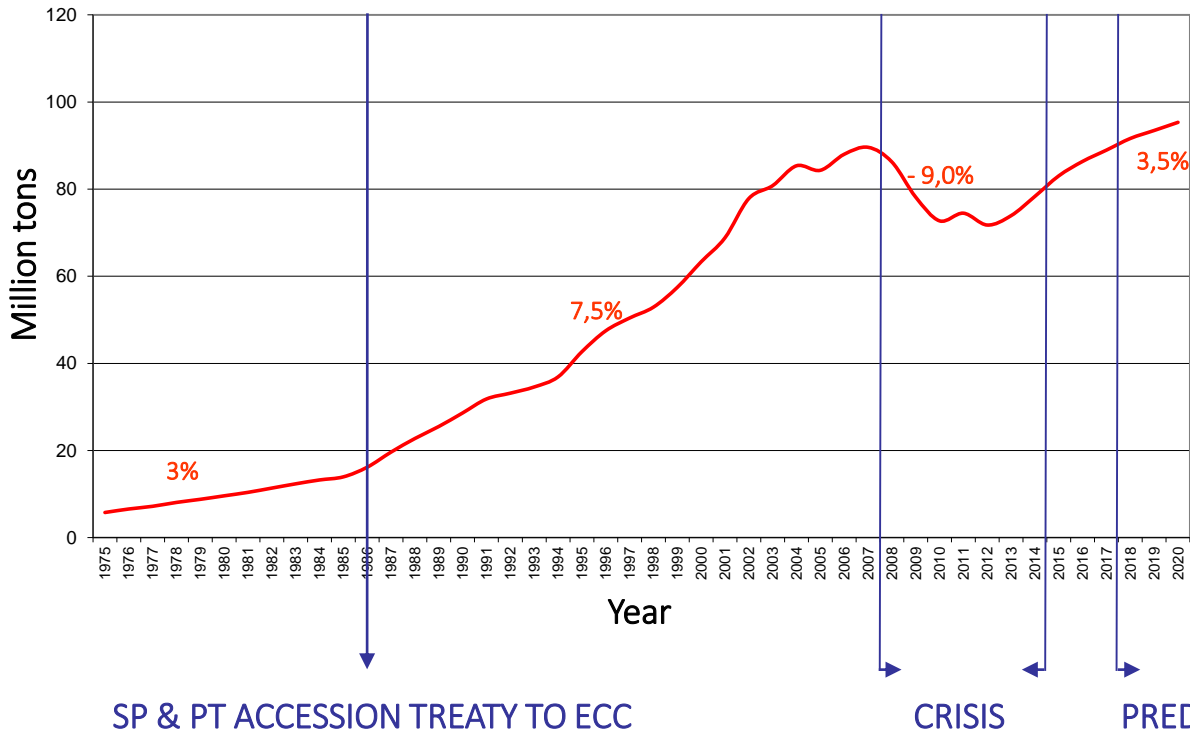


Why MoS example?

ROAD CONGESTION

YEARLY ROAD FREIGHT MOVED THROUGH PYRENEES: Junquera & Irún sections

Sources: WEST MOS (TEN-T) Transyt 2010. SP-FR Observatory



Directive (EU) 2016/802 of the European Parliament and of the Council on the reduction of the sulphur content of certain liquid fuels