ALOT
SUSTAINABLE TRANSPORT
COMPETITIVE LOGISTICS

The test process in the four regions (overview)

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ALOT

The ECORailS Pilot Applications

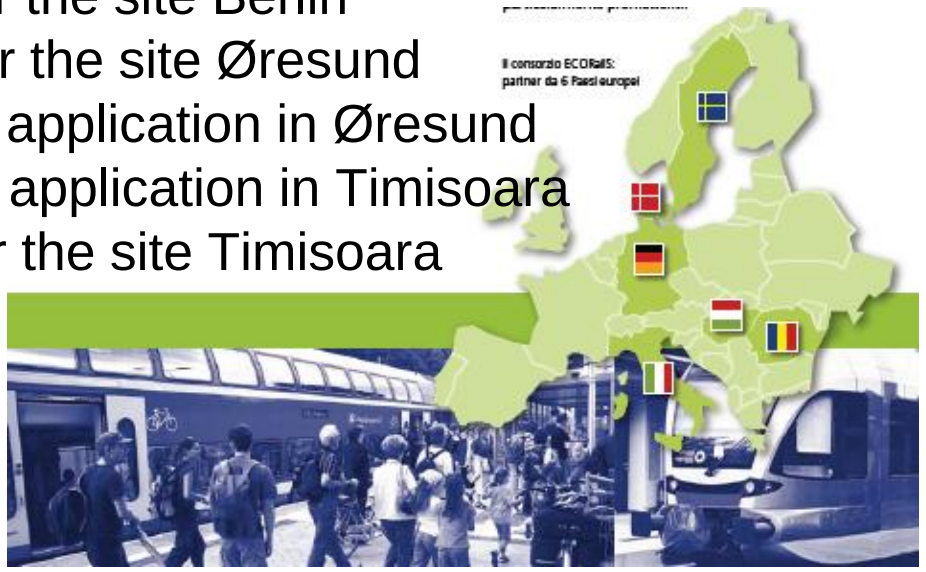
1. Developing new text modules and clauses to improve the present awarding of services and rolling stock with Energy Efficiency and ENVironmental targets
2. Increasing the awareness of the potentials for saving energy and for reducing the environmental impact of regional rail
3. Testing the ECORailS Guidelines

Main activities

- **To undertake a performance test of the ECORailS Guidelines by the formulation of awarding texts** for the four test sites respectively, integrating energy efficiency and environmental criteria into awarding texts used in real-life awarding
- **To estimate the quantitative/qualitative impacts**
- **To discuss implications and needs with the local stakeholders**
  (PTAs, TOCs, manufacturers, regulators)

Participants

- **PoB/ALOT:** Manager of the Work Package;
  Responsible for the pilot application management;
  Responsible for the test application Brescia;
  Test of the Guidelines for the site Brescia
- **ApS:** Elaboration of the test methodology
- **TSB FAV:** Responsible for the test application in Berlin
- **SenStadt:** Test of the guidelines for the site Berlin
- **TSY:** Test of the guidelines for the site Øresund
- **TFK:** Responsible for the test application in Øresund
- **IRD:** Responsible for the test application in Timisoara
- **CFR:** Test of the guidelines for the site Timisoara



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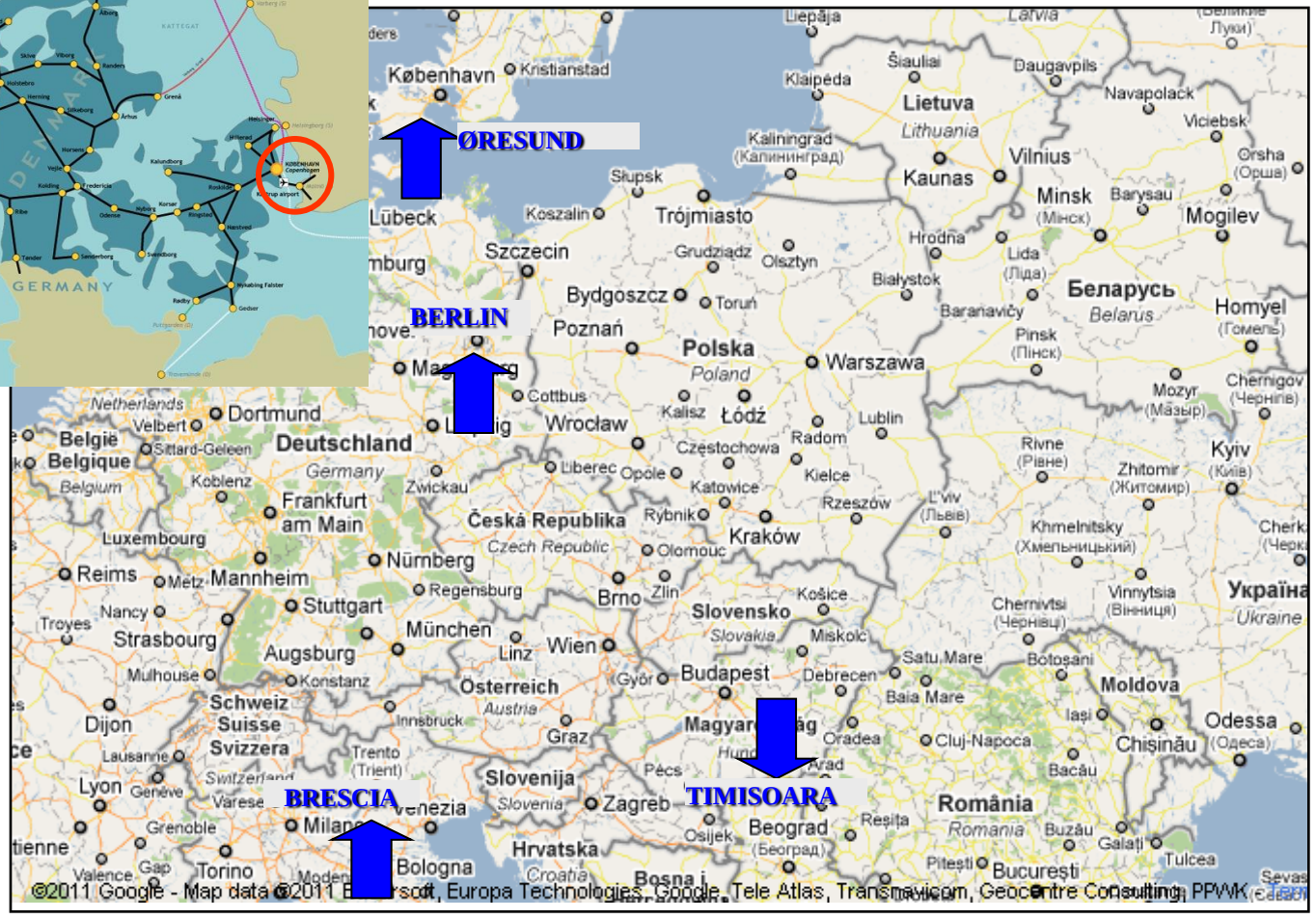
4 test sites representing EU

ØRESUND LINK (Denmark + Sweden)
- Tender
- Services



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PROVINCIA DI BRESCIA

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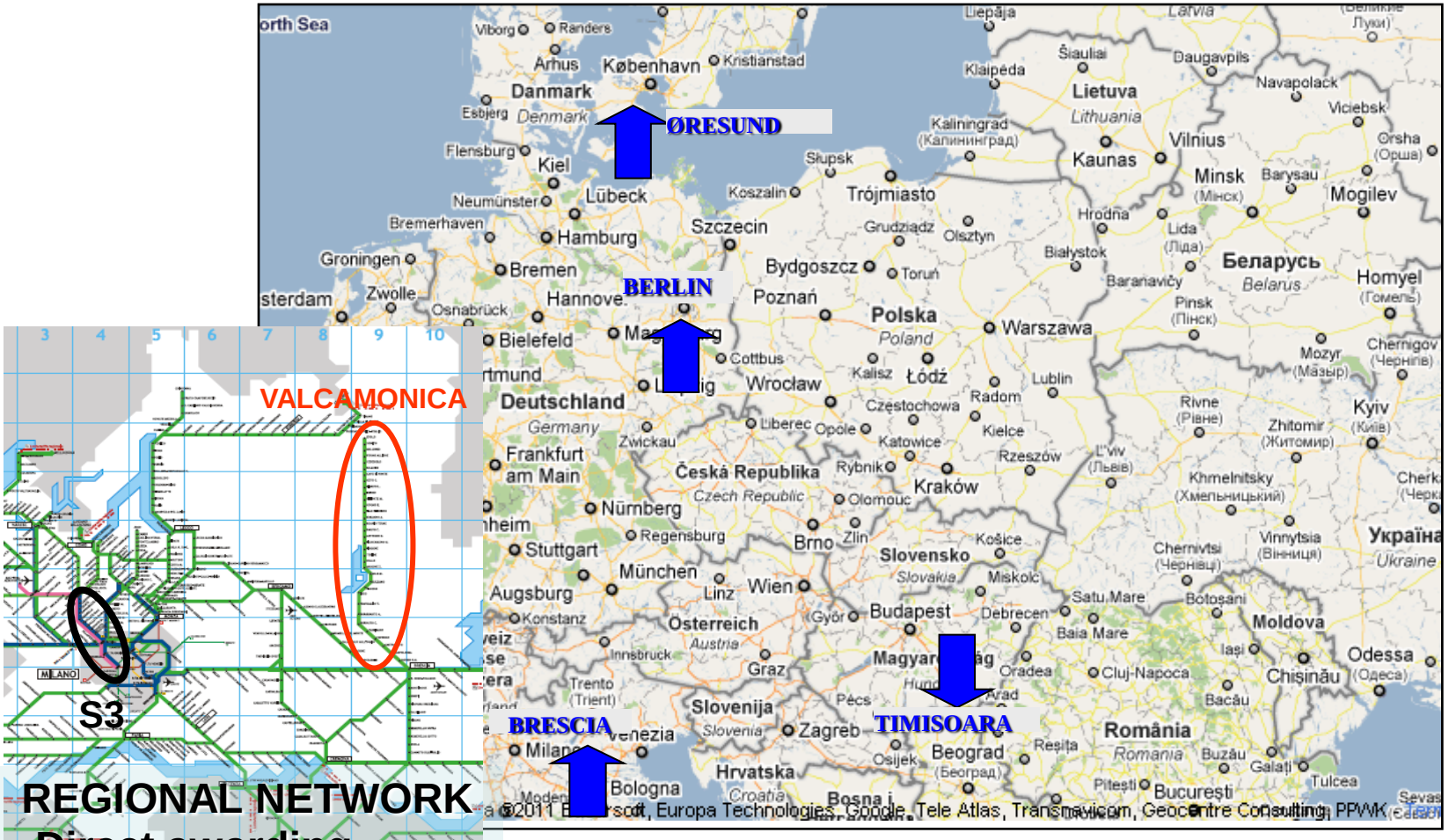
4 test sites representing EU



REGIONAL NETWORK
- Direct awarding
- Plan for EE/Env
- Services+vehicles

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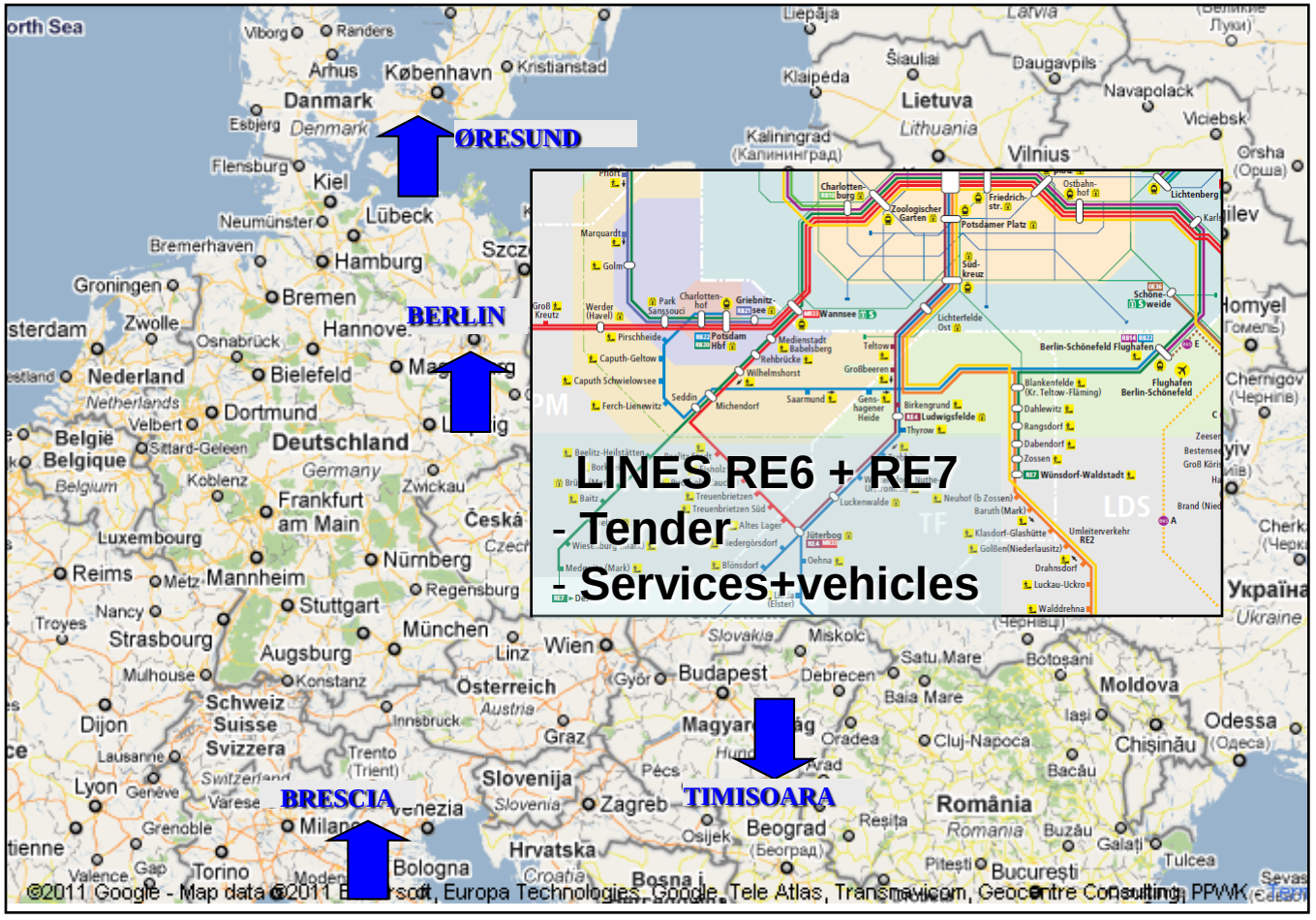
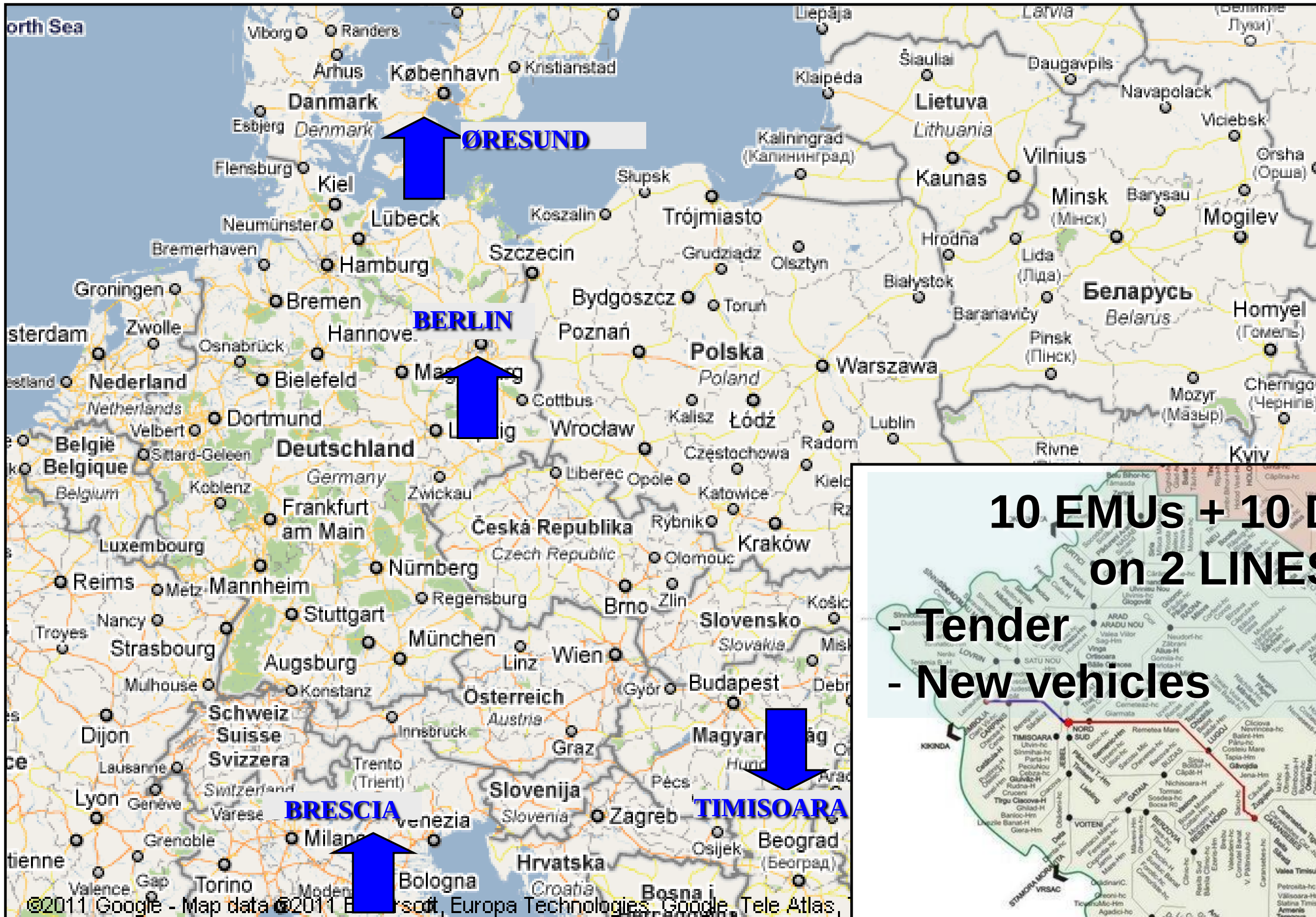
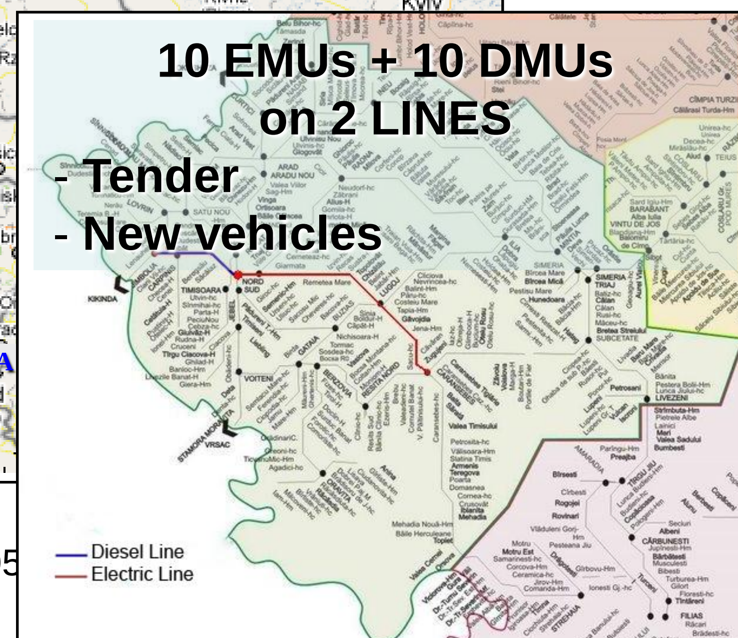
PROVINCIA DI BRESCIA

4 test sites representing EU



4 test sites representing EU

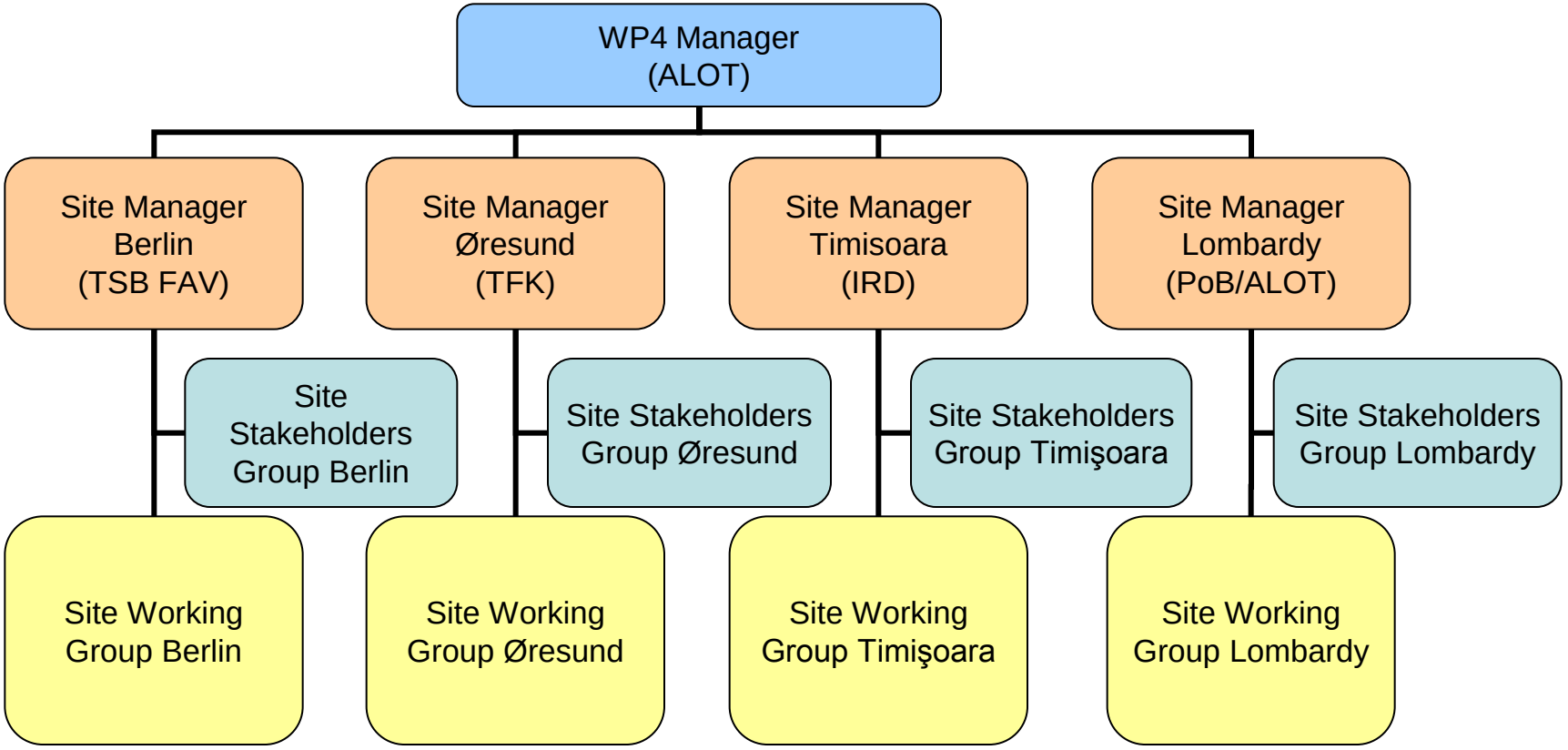




The starting points

Present status of EE/Env criteria before using ECORailS Guidelines	Test area			
	Lombardy	**Berlin**	**Øresund**	**Timisoara**
▪ No use of EE/Env criteria in the awarding procedures		☑	☑	☑
▪ Pilot use of some EE/Env criteria in the awarding of services				
▪ Pilot use of some EE/Env criteria in the awarding of rolling stock	☑			
▪ Pilot use of EE/Env technologies / policies not in awarding procedures	☑	☑	☑	☑
▪ Availability of on-board energy meters		☑	☑	☑

Organization



- **1 WP Manager and 4 Site Managers**
- **4 Site Working Groups where the PTAs and/or TOCs are directly involved**
- **4 Site Stakeholders Groups for consultation**

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Workflow

		2010																		2011			
		April		May		June		July		August		September		October		November		December		January		February	
		15	30	15	31	15	30	15	31	15	31	15	30	15	31	15	30	15	31	15	31	15	28
Task 3	**Execution of the tests**																						D14
	Step 1 Preparation																						
																	ISR 1						
	Step 2 Scenarios																						
																	ISR 2						
	Step 3 Execution																						
	Step 4 Analysis of the results																						
																					ISR 4		

STEP	PERIOD	MAIN ACTIVITIES
1. Preparation	April-September 2010	Organization, scoping, baseline, first approach to the Guidelines
2. Scenarios	June-December 2010	Choice of the ECORailS technologies & measures to be tested, legal analysis
3. Execution	August 2010 – January 2011	Writing of awarding texts, impacts estimation/simulation/measure, feedbacks from the use of the Guidelines, agreements
4. Analysis	December 2010 – February 2011	International Evaluation Group meeting, transnational comparison of the results

Outputs

- 1 Workshop with the administrations on the common and site-related goals of the pilot applications
- 1 Workshop with the administrations on the methodology of the pilot applications
- Site Stakeholder Groups meetings
- 4 Awarding texts serving as examples for energy efficient/environmental friendly and sustainable awarding in Europe
- User Platform workshop on the results of pilot applications (administration level)
- Presentations of the test results at international dissemination events

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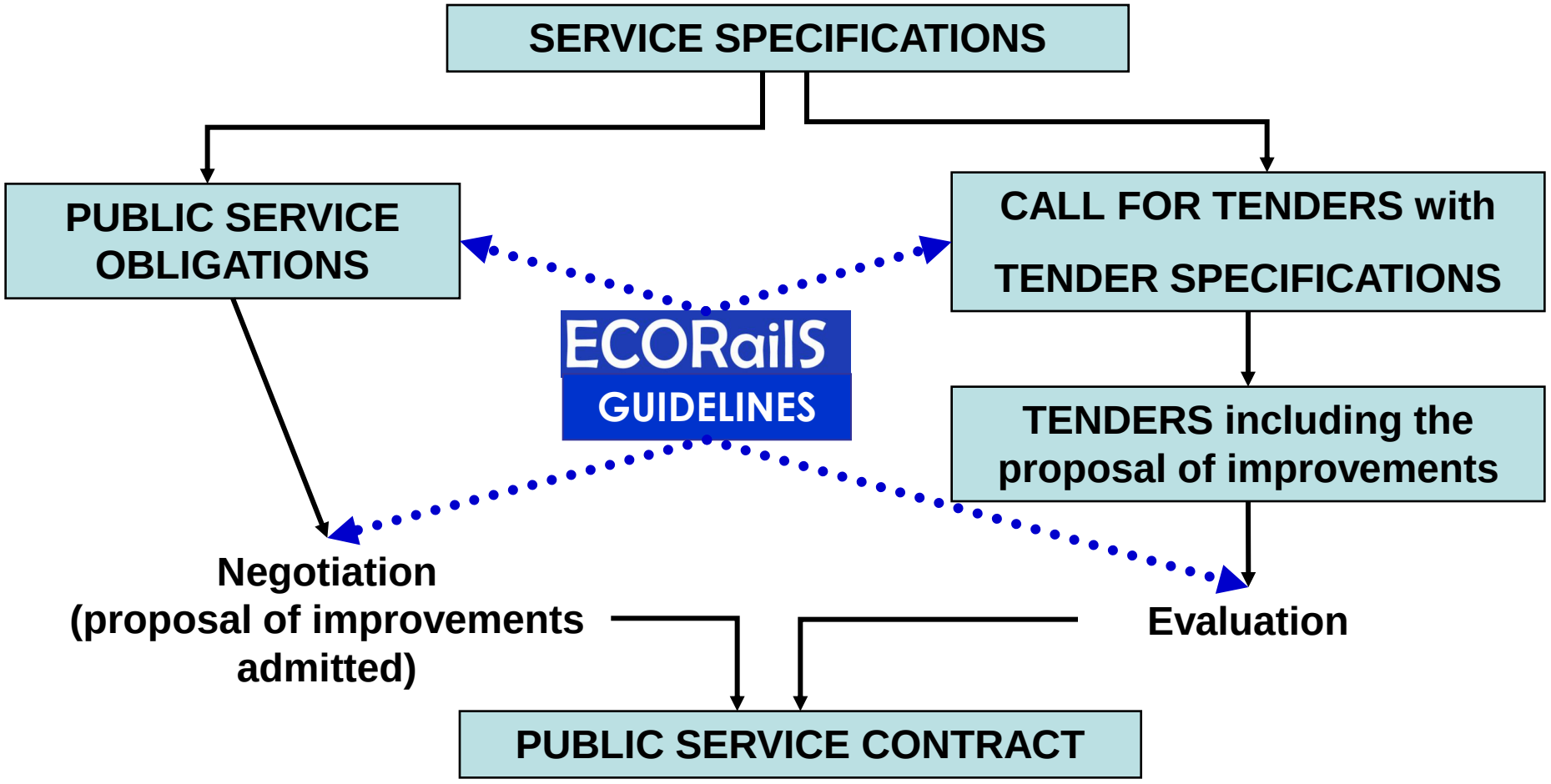
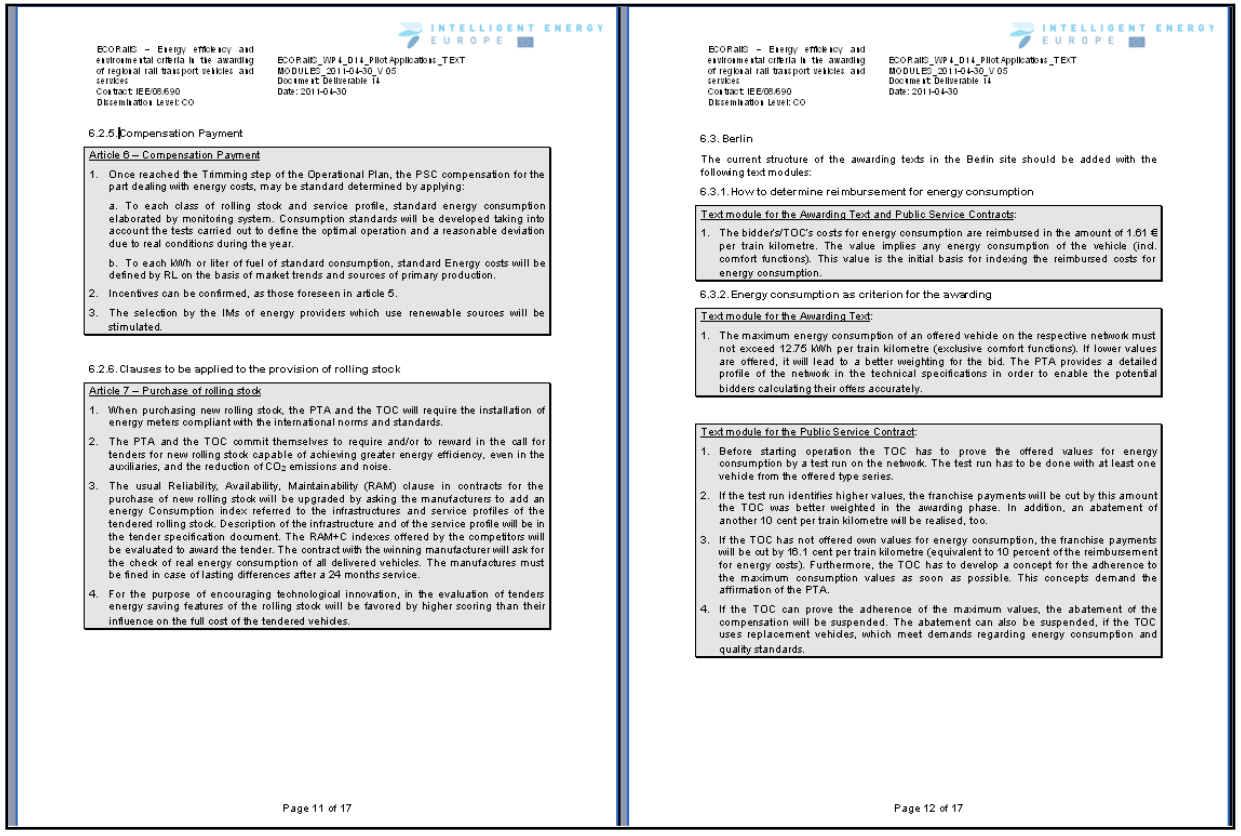
Main results

- **Representativeness**: the 4 sites gave a picture of the existing different situations in the EU and feasible improvements, about:
  - Status of regional rail services
  - Use of energy efficiency and environmental criteria
- **Legal feasibility**: all sites considered feasible to implement the ECORailS Guidelines in the present legal framework and wrote text modules, but this process could be helped a lot by:
  - ***An impulse by the EU and the Governments*** *(requirements)*
  - ***More homogeneous rules in Europe*** *(e.g. energy meters, charging of real consumption of electricity by the IMs, assessment of the energy consumption of vehicles)*
- **Manageability**: the 4 sites practiced the ECORailS Guidelines, collected the stakeholders' opinions and supported the preparation of an user friendly final version
- **Energy and emissions savings**: on-field measurement, simulations and discussions with the stakeholders showed the reachability of the 5%, 10%, 15% ECORailS targets

Development of the awarding texts



The text modules



ECORailS – Energy efficiency and environmental criteria in the awarding of regional rail transport vehicles and services
Contract: IEE/08/690
Dissemination Level: CO

ECORailS_WP4_D14_Pilot Applications_TEXT MODULES_2011-04-30_V 05
Document: Deliverable T4
Date: 2011-04-30

6.2.5. Compensation Payment

Article 6 – Compensation Payment

1. Once reached the Trimming step of the Operational Plan, the PSC compensation for the part dealing with energy costs, may be standard determined by applying:

   a. To each class of rolling stock and service profile, standard energy consumption elaborated by monitoring system. Consumption standards will be developed taking into account the tests carried out to define the optimal operation and a reasonable deviation due to real conditions during the year.

   b. To each kWh or liter of fuel of standard consumption, standard Energy costs will be defined by RL on the basis of market trends and sources of primary production.
2. Incentives can be confirmed, as those foreseen in article 5.
3. The selection by the IMs of energy providers which use renewable sources will be stimulated.

6.2.6. Clauses to be applied to the provision of rolling stock

Article 7 – Purchase of rolling stock

1. When purchasing new rolling stock, the PTA and the TOC will require the installation of energy meters compliant with the international norms and standards.
2. The PTA and the TOC commit themselves to require and/or to reward in the call for tenders for new rolling stock capable of achieving greater energy efficiency, even in the auxiliaries, and the reduction of CO_2 emissions and noise.
3. The usual Reliability, Availability, Maintainability (RAM) clause in contracts for the purchase of new rolling stock will be upgraded by asking the manufacturers to add an energy Consumption index referred to the infrastructures and service profiles of the tendered rolling stock. Description of the infrastructure and of the service profile will be in the tender specification document. The RAM+C indexes offered by the competitors will be evaluated to award the tender. The contract with the winning manufacturer will ask for the check of real energy consumption of all delivered vehicles. The manufactures must be fined in case of lasting differences after a 24 months service.
4. For the purpose of encouraging technological innovation, in the evaluation of tenders energy saving features of the rolling stock will be favored by higher scoring than their influence on the full cost of the tendered vehicles.

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6.3. Berlin

The current structure of the awarding texts in the Berlin site should be added with the following text modules:

6.3.1. How to determine reimbursement for energy consumption

Text module for the Awarding Text and Public Service Contracts:

1. The bidder's/TOC's costs for energy consumption are reimbursed in the amount of 1.61 € per train kilometre. The value implies any energy consumption of the vehicle (incl. comfort functions). This value is the initial basis for indexing the reimbursed costs for energy consumption.

6.3.2. Energy consumption as criterion for the awarding

Text module for the Awarding Text:

1. The maximum energy consumption of an offered vehicle on the respective network must not exceed 12.75 kWh per train kilometre (exclusive comfort functions). If lower values are offered, it will lead to a better weighting for the bid. The PTA provides a detailed profile of the network in the technical specifications in order to enable the potential bidders calculating their offers accurately.

Text module for the Public Service Contract:

1. Before starting operation the TOC has to prove the offered values for energy consumption by a test run on the network. The test run has to be done with at least one vehicle from the offered type series.
2. If the test run identifies higher values, the franchise payments will be cut by this amount the TOC was better weighted in the awarding phase. In addition, an abatement of another 10 cent per train kilometre will be realised, too.
3. If the TOC has not offered own values for energy consumption, the franchise payments will be cut by 16.1 cent per train kilometre (equivalent to 10 percent of the reimbursement for energy costs). Furthermore, the TOC has to develop a concept for the adherence to the maximum consumption values as soon as possible. This concepts demand the affirmation of the PTA.
4. If the TOC can prove the adherence of the maximum values, the abatement of the compensation will be suspended. The abatement can also be suspended, if the TOC uses replacement vehicles, which meet demands regarding energy consumption and quality standards.

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TEXT MODULES:

- **Annex M of the ECORailS Guidelines**
- **Examples of how the ECORailS Guidelines can be implemented in real life when local expectations have to be matched with general strategies**
- **Plausible texts which are feasible in the actual EU legal framework**

Regulatory frameworks

Regulatory framework involved	Text modules			
	Lombardy	Berlin	Øresund	Timisoara
▪ Direct awarding of services	☑			(☑)
▪ Competitive tendering of services			☑	
▪ Competitive tendering of new rolling stock	(☑)			☑
▪ Competitive tendering of services, including the rolling stock		☑		
▪ Energy provision by the Infrastructure Manager	☑	☑	☑	☑

Awarding instruments

Applied awarding instruments	Text modules			
	Lombardy	Berlin	Øresund	Timisoara
▪ Public Service Contract	☑	☑	☑	
▪ Tender specifications for services		☑	☑	
▪ Tender specifications for new rolling stock	☑	☑		☑
▪ Preparatory agreements and plans	☑			
▪ Regulations for the Infrastructure managers	☑			

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Issues addressed

Main clauses in the awarding documents	Text modules			
	Lombardy	Berlin	Øresund	Timisoara
▪ Measurement, reporting and monitoring of energy consumption	☑		☑	☑
▪ Energy efficiency incentives (bonus/malus)	☑		☑	
▪ Compensation payments taking into account EE/ENV criteria	☑	☑		
▪ LCC-driven procurement of rolling stock				☑
▪ Awarding criteria		☑	☑	☑
▪ Liability of rolling stock manufacturers	☑			☑
▪ Training of personnel (energy-efficient driving)	☑	☑	☑	☑
▪ Parked trains prescriptions		☑	☑	☑
▪ Pricing of electric energy for traction	☑			
▪ Operational measures on the side of the IM	☑			

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Technologies

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Main technologies involved in the awarding documents	Text modules			
	Lombardy	Berlin	Øresund	Timisoara
▪ Control of comfort functions in parked trains		☑	☑	☑
▪ Energy-efficient driving	☑	☑	☑	☑
▪ Vehicle concepts	☑			☑
▪ Diesel engine				☑
▪ Braking energy recovery				☑
▪ Fuel / energy consumption measuring- and recording system	☑			☑
▪ Train Control and Management System				☑
▪ Maintenance and Diagnose Software				☑
▪ Optimisation of the heating-air conditioning-ventilation system (HVAC)				☑
▪ Optimisation of lighting				☑
▪ Optimization of doors' actuation control				☑

Energy and emissions savings

- **The ECORailS targets for energy savings are reachable in all sites**
- **Not homogeneous starting conditions and estimating methods**
- **Estimations with the present energy mix (incentives to better the energy-mix included in the awarding documents developed by some sites)**

TOPIC	BERLIN	TIMISOARA	ØRESUND	LOMBARDY
Compared to current awarding	**up to 9%**	**10.5 %**	**12.9%**	**8% - 10%**
Compared to currently used rolling stock	**evaluated during the workshop process with the stakeholders**	**15.6 %**	**no change of rolling stock in the pilot**	**no change of rolling stock in the pilot (10% monitored)**
At system level	**evaluated during the workshop process with the stakeholders**	**27.56%**	**15% reachable with additional investments**	**15% reachable by implementing the agreed mid-term plan**

Contacts

Province of Brescia

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