

**ECORails –
Energy efficiency and environmental criteria in the awarding of regional rail transport
vehicles and services**

ECORails

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Energy efficiency and environmental criteria in awarding procedures

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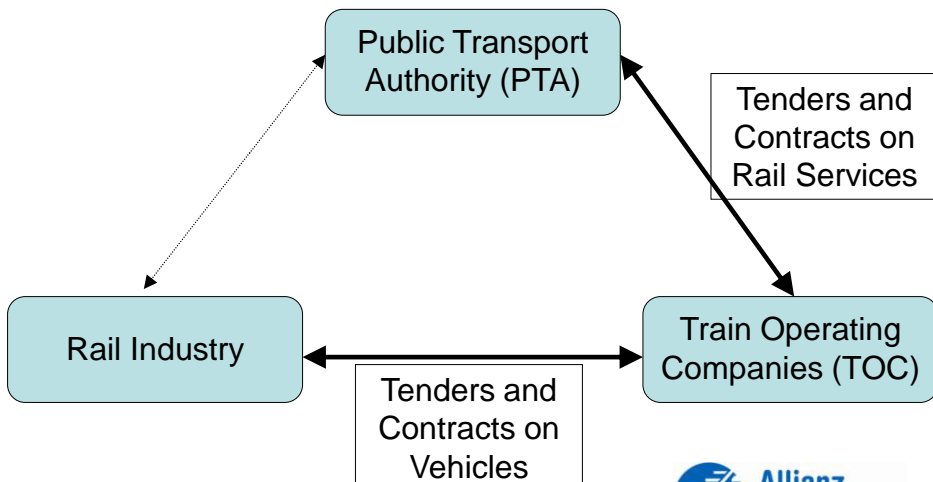
Why do we support the ECORails project?

- Climate protection is a main issue for transport policy
- The energy efficiency of the railways is one of the main arguments for public support
- Authorities pay for public services. They should request appropriate quality criteria, including the environmental performance
- Improved energy efficiency makes railway services more attractive for both – passengers and society (governments)

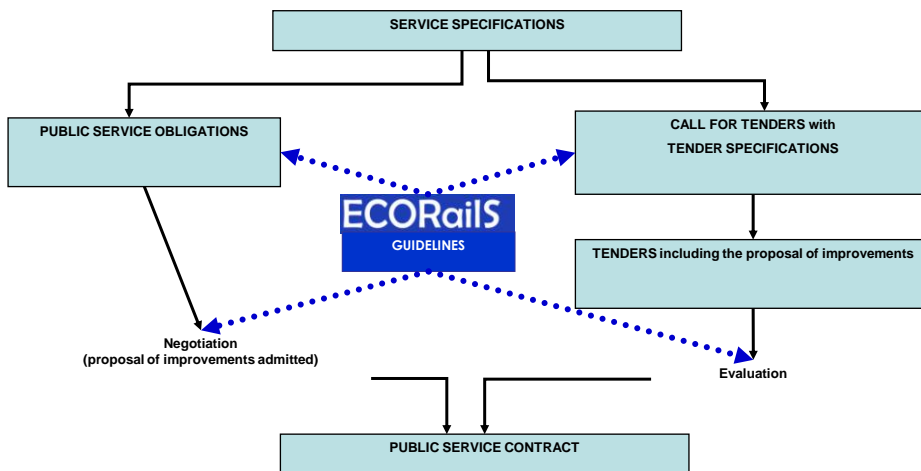
Why do we support the ECORails project?

- Investments for improved energy efficiency, noise abatement, and air quality protection need a clear financial and institutional basis, e.g. good contracts between governments and railways.
- ECORails provides expertise and a means of standardisation for all involved partners in contracted railway passenger services: PTAs, train operators, railway supply industry.

Regional Rail Services Interaction of Involved Actors



Development of the awarding texts



The ECORails Guidelines

Strategy		Strategic considerations; definition of mid-term and long-term objectives	
Main phases at PTA in a typical award project:		Main associated actions at PTA:	
Competitive Awarding	Direct Awarding / In-house provision	Competitive Awarding	Direct Awarding / In-house provision
A. Preparation		A. Definition of the award project: decision on award procedure; identification of needs, options and targets	
B. Elaboration		B. Elaboration of ITT / (direct) contract text plus planning of phases D-G; publication of tender documents	
C. Response to tender	C. + D. + E. Negotiation	C. Mainly bidding operators to work; PTA to answer bidders' questions	C. + D. + E. Agreement on the contractual clauses and on the economical and technical details of the contract
D. Evaluation and awarding		D. Evaluation, decision and justification; communication of the result	
E. Negotiation		E. Further negotiations and specifications; preparation of the contract	
F. Preparation of contract period		F. Verification of performance with selected operator; preparing of monitoring	
G. Follow up during the contract period		G. Monitoring and bonus/penalty awards on annual basis	

Relevant European Law for awarding

- **Non-discrimination**

No contracting entity may, for example, give preference to a local company simply because it is located in the municipality.

- **Equal treatment**

All suppliers involved in a procurement procedure must, for example, be given the same information at the same time.

- **Transparency**

The contract document has to be clear and unambiguous and contain all the requirements made of the items to be procured.

- **Proportionality**

The subject matter of the contract must have a natural relation to the supplies, services or works which are being procured and not be disproportionate.

European law relevant for awarding and tendering

Main result:

- EU legislation explicitly encourages the application of environmental criteria!
- PTAs have freedom of manoeuvre WHAT to award and ...
- which quality criteria to apply
- There are restrictions HOW to award.
- Great flexibility (although not unlimited) in case of awarding rail passenger services: types of awarding procedures, contract duration, selection of TOC, definition of criteria
- If the PTA procures vehicles or when it comes to specifications about the rolling stock in tenders for rail services, the EU procurement directives have to be respected.

Legal restrictions are not the main obstacles, but technical expertise, analysis of markets and technologies and economic aspects.

Summary of legal aspects

- European legislation defines how to award – not the subject of awarding – no obstacle for inclusion of EE/ENV
- Basically allows freedom of manoeuvre for the contracting authority (PTA) ...
 ...as long as the 4 principles of the European Treaty must be fulfilled:
 Non discrimination - Equal treatment -
 Transparency - Proportionality

No obstacle for the inclusion of Environmental and Energy efficiency criteria in the awarding process:

PTA can include EE/EF criteria either in:

- Public Service Contract (PSC),
 rolling stock provided by the TOC
- PSC, rolling stock provided by the PTA
- Awarding (procurement) of rolling stock by the PTA
- (Procurement of rolling stock by the TOC)

In certain cases, the stricter procurement Directives need to be respected. But this is not a general obstacle.

Concept of the Guidelines

- Enable PTAs to make good strategic decisions on service, timetable and operations in terms of energy efficiency
- Extend awareness for “green” technologies and information on ecology-oriented strategies for procurement
- Provide detailed specification of energy efficiency and environmental matters for rolling stock and services related to regional passenger rail transport
- Provide standardised methods but not invent own standards competing with UIC 345 or TECREC 100 001

General aims of the Guidelines

- to convince the responsible persons in the PTAs to include energy efficiency criteria in their awarding procedures (political level, government, heads of departments / management units, persons who compile tender documents, contracts etc.)
- [to provide a toolbox and show how to use it](#)
- to help the Train Operating Companies (TOCs) to deal with the new requirements
- to show which achievements can be reached in regional passenger transport (short, middle and long-term perspective)

Instruments

- Requirements
- Weighting and scoring
- Penalties (if a defined quality is not realised during the contract duration)
- Incentives (bonus/malus) for good performance or improvements during the contract period



Requirements

- TOC/Manufacturer must fulfil the specified criteria.
- PTA needs to check before whether bidders can fulfil these requirements.
- Simple evaluation of offers (yes/no)
- Compliance must be checked → penalties if necessary.

Recommended for detailed monitoring system for energy consumption, eco-driving and driver training, parked train control systems, on-board equipment for energy recovery/storage (electric operation), maintenance procedures, emission limits (noise, pollutants).

Higher scoring for preferred solutions or (promised) better performance

- Used in the evaluation of tenders (weighting schemes)
- additional scores for offers with good EE/ENV quality
- Useful instrument when availability, costs and reliability of technologies are unclear to the PTA

Recommended for advanced energy consumption limits/objectives and mainly for innovative technologies (e.g. onboard energy storage), also for ambitious noise or pollutant values.

How to design weighting & scoring schemes

- No standard method is possible, instead the method is largely dependent upon financial and political parameters
- Most important:
 - Energy cost in relation to total cost for the services
 - Bearer of energy costs
 - Charging system for energy costs
 - Overall size of the services
 - Internal or external environmental goals (political dimension)
 - Financial situation
 - More....?

Penalties

- Penalties can be applied in case of non-compliance to requirements during contract period.
- Also in case of non-compliance with offered / agreed standards
- Can be used as negative incentive in order to avoid bad performance.

Incentives (bonus/malus)

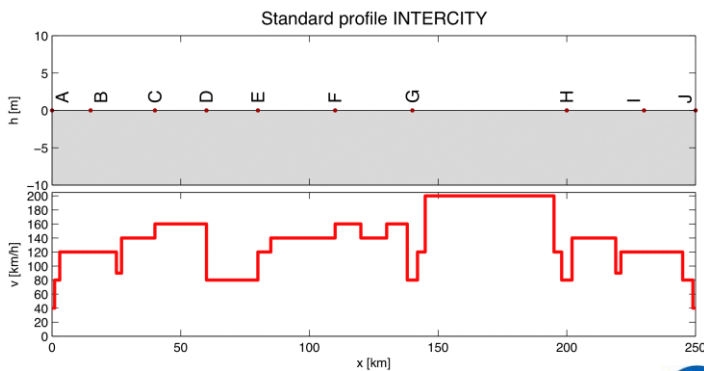
- Optionally used as incentive for good real life performances during contract period
- Bonus and penalties requiring monitoring of operators' actual performances
- Applicable when including indicators (e.g. kWh/seat km)
- May also be used for investments during contract period (e.g. procurement of new rolling stock; retrofit).

Summary - requirements, bonus/malus, penalties

- For transparency – Requirements, Bonus/Malus, Weights used for evaluation of tenders and Penalties need to be defined in awarding documents as well as in the public service contracts including the method for calculation
- Requirements to be used for minimal standard that is not too far reaching or innovative
- Incentives and weights for evaluation of tenders can be used to reach further
- Penalties can be used as negative incentive or for non-compliance to required criteria during contract period

Practice of awarding

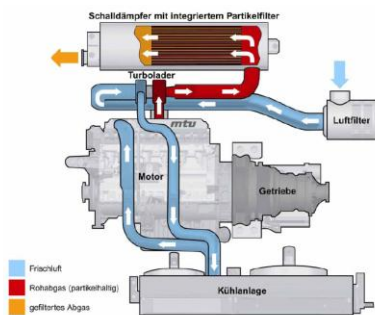
Energy efficiency was decisive at a recent tender by the Swiss Federal Railways (SBB) for new double-deck stock.



Practice of awarding

Rhein-Main Verkehrsverbund (RMV, German PTA) procured a series of DMU (Alstom LINT 41) with particle filters for their own vehicle pool. The additional costs were partially born by the communities which are served by the „Taunus railway“ between Friedrichsdorf and Brandobendorf.

The DMUs fulfil Stage IIIa and the particle limits of Stage IIIb.



Source (diagram and photo): VDB, 2007

Practice of awarding

Verkehrsverbund Berlin-Brandenburg (VBB) used in its recent tender a scoring model which encouraged the use of DMUs with advanced exhaust emission standards.

The result of the 2008 decision was:

One successful bidder will use DMUs fulfilling Stage IIIa,

The other successful bidder will use DMUs with Stage IIIb.



Regio Shuttle (Stadler) : DMUs of the same basic design but upgraded for Stage IIIb will be used on the VBB network

Practice of awarding

As part of the same tendering project, the Verkehrsverbund Berlin-Brandenburg (VBB) also rewarded ambitious noise standards with additional scores.

Although the weight of these criteria was not very high, some of the trains to be used in the future will be better than required by TSI Noise.

Practice of awarding

Val Venosta Line and Ferrovia Circumvesuviana (FCV), both in Italy, use damped wheels in order to avoid noise. In case of FCV thus investments for protection walls could be avoided.

The mentioned railways are owned by the regions and noise reduction was required by the government.



DMU (Stadler) with Syope wheels on the Val Venosta line (photo: Pippert)

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