

PROSPER II

**Procedures for Rolling Stock Procurement
with Environmental Requirements
phase II**

Presentation at the
Procurement & Environment Network Meeting
Paris, 26th April 2005

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Overview



Scope of the Leaflet

Structure of the Leaflet

Selected Highlights

Fields of Application

Scope of the Leaflet

„Environmental Specifications for New Rolling Stock“

- Guidebook on “Eco-Procurement”
Compliance “Clause by Clause” not possible
- Functional Approach
- Status “Recommended”

- **Adaptation** to specific company conditions
- **Implementation** into companies’ procurement process

Structure of Leaflet

Introduction - Environmental key areas

Legal Framework of Procurement

Environmental Specifications in Invitations to Tender

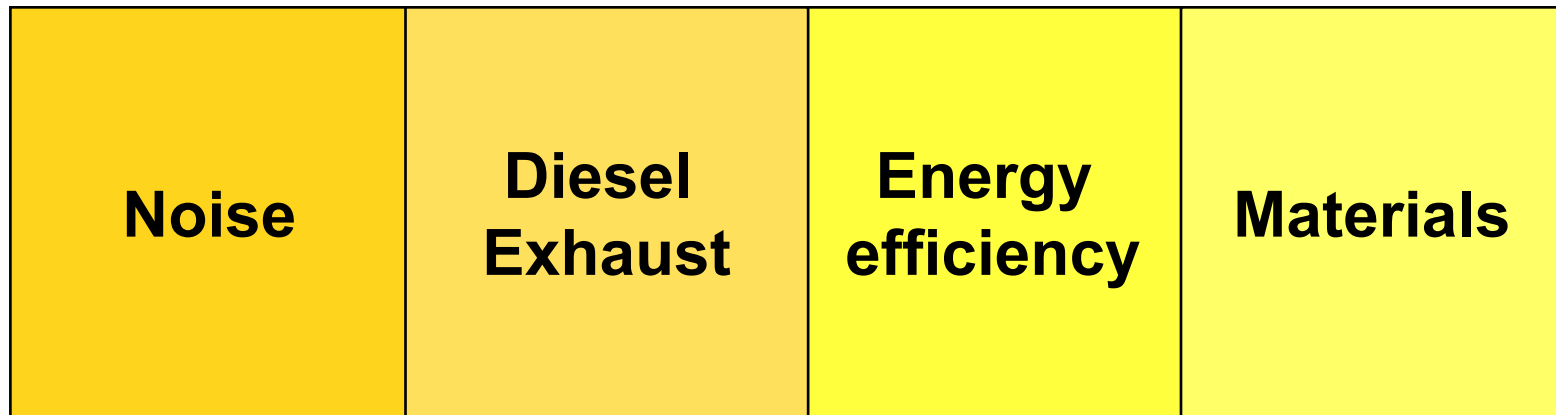
Integration of environmental requirements into the procurement process

List of harmonised environmental framework specifications

Annex: Background Information for Key Areas

Key Areas

Environmental Performance is mainly defined by



Key Areas

	Noise	Diesel Exhaust	Energy efficiency	Materials
Main driver	Public	Public	Operators	Policy
Legislation	EU	EU	None	Intern. & EU
Potential & Costs	Additional costs	Additional costs	High LCC Potential	Additional costs vs. long-term risks
General Approach of Leaflet	Comply with legislation	Comply with legislation	Exploit potential	Guiding principles

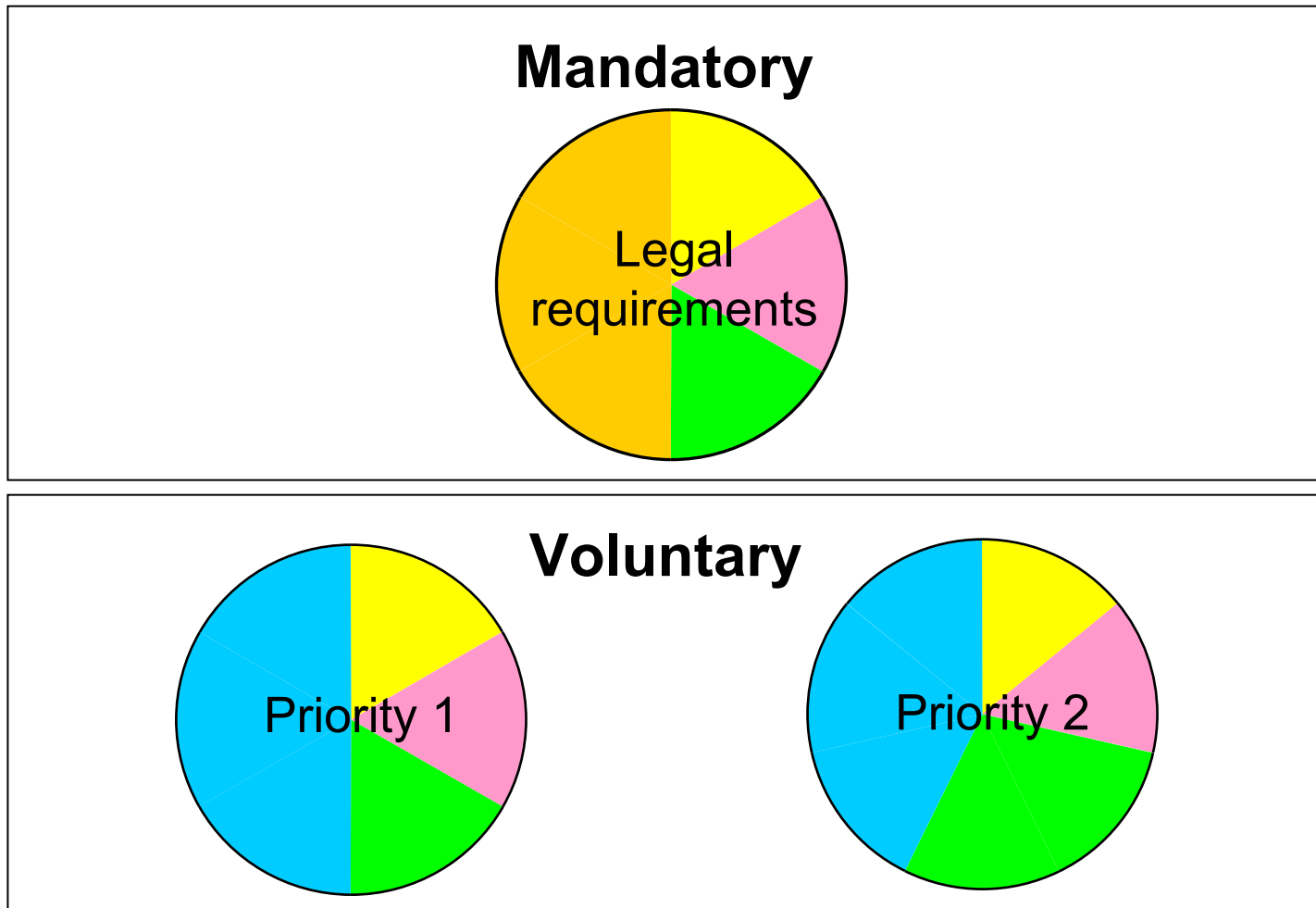
And “Other” miscellaneous issues

Documentation of Legal Aspects

- Legislation on Procurement
EU Directive on awarding procedures (“Utilities Directive”)
- Legislation on Key Areas
Status of Legislation / Other Regulation / Trends
- Focus on Europe

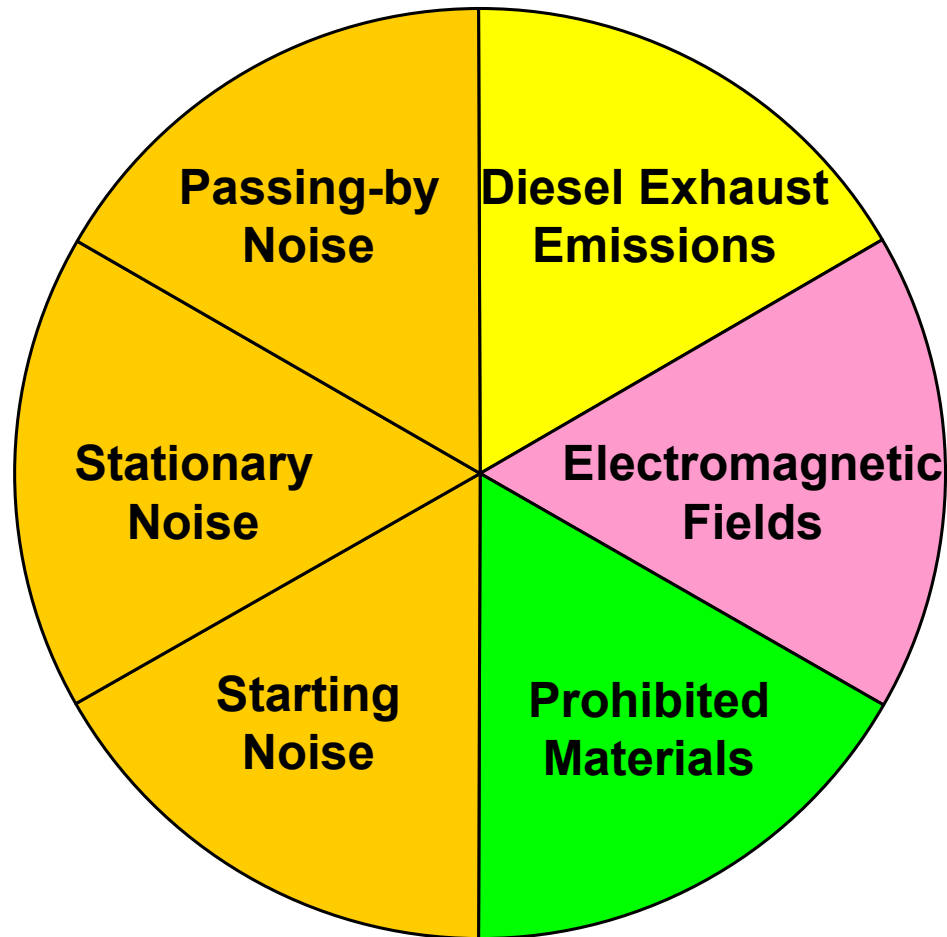
Details in a Separate Document

Priorities of Specifications



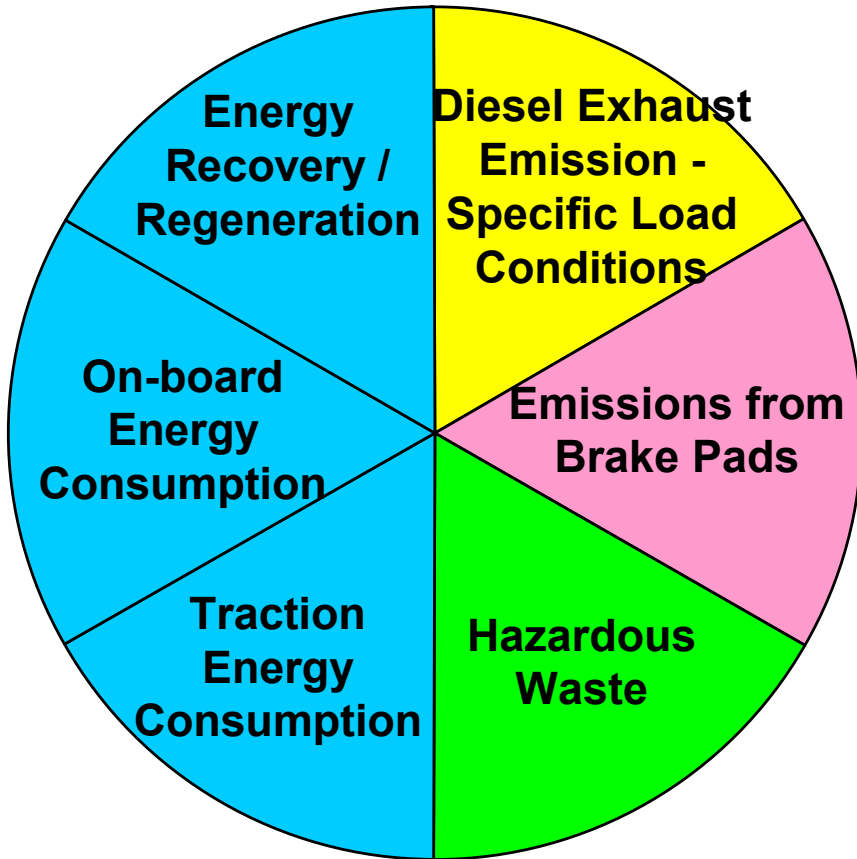
Mandatory Specifications

Legal requirements

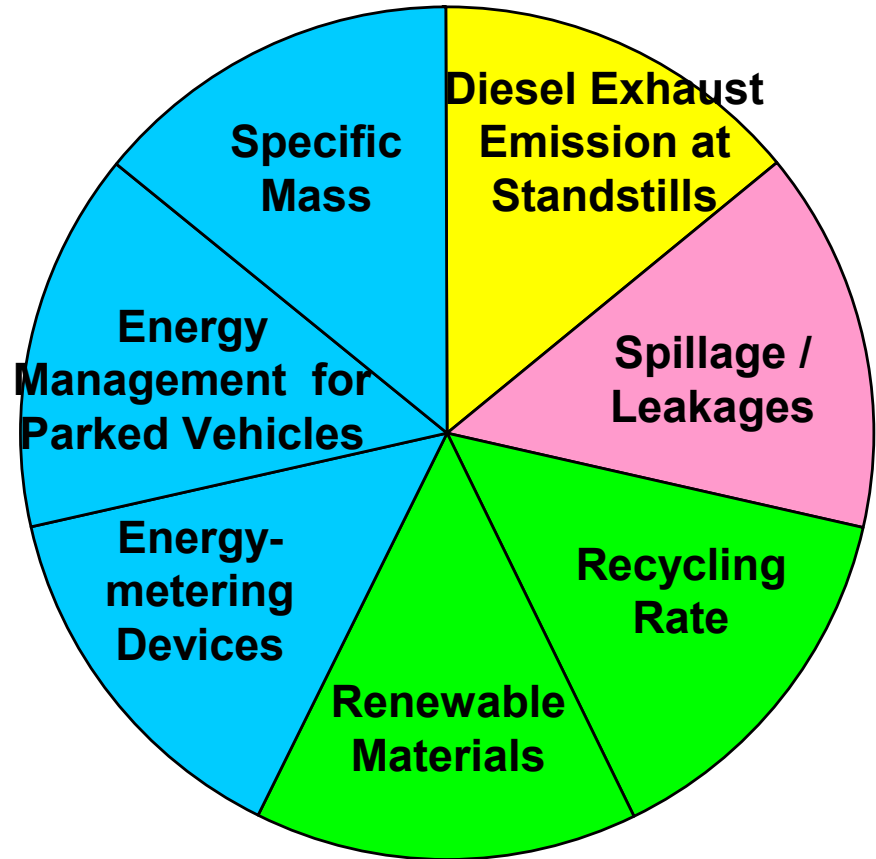


Voluntary Specifications

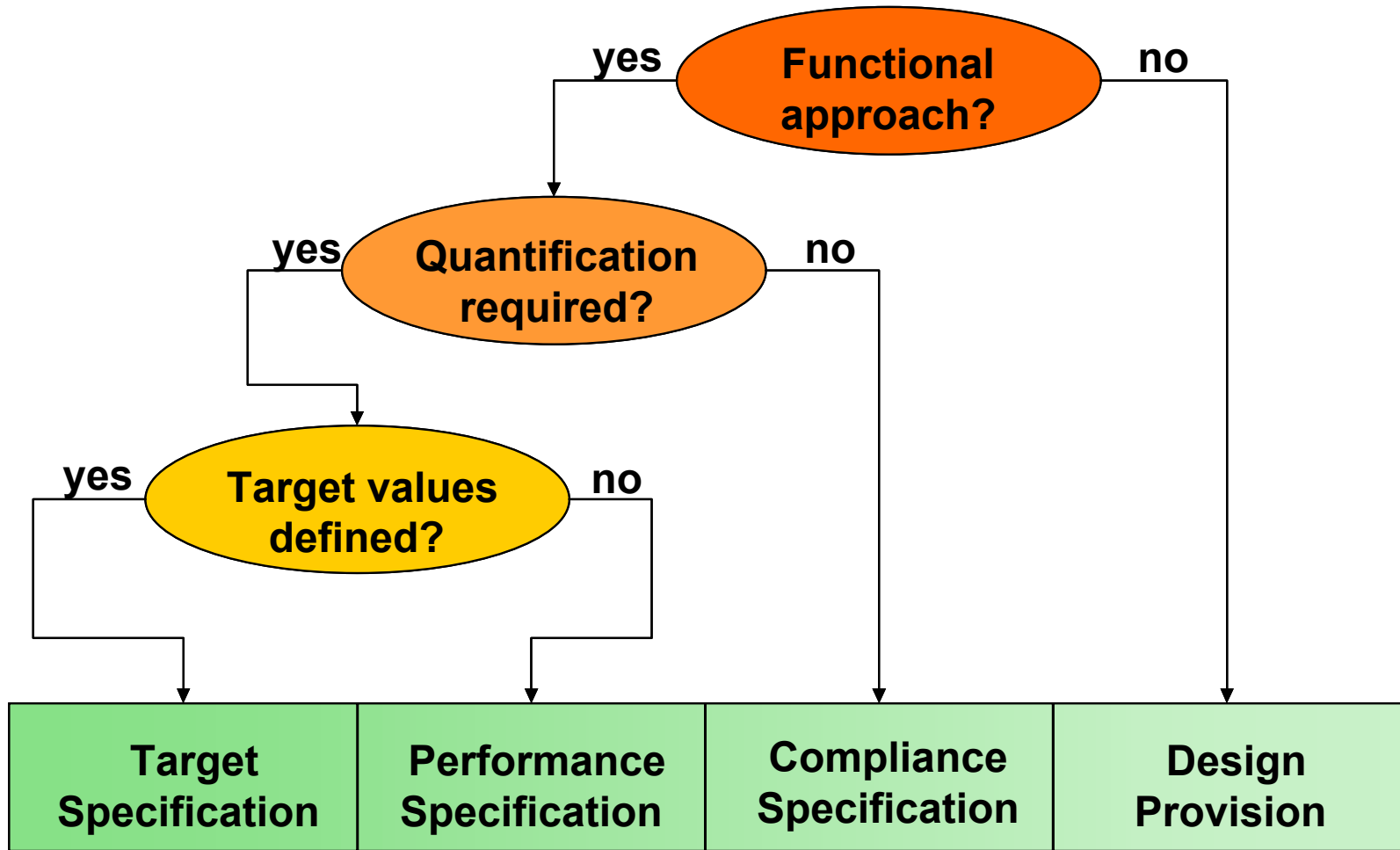
Priority 1



Priority 2



Types of Environmental Specifications



Noise Specifications

No	Priority	Environmental Specification	Type	Applicable for
		Noise Emissions		
7	Mandatory	Passing-by Noise	T	All
8	Mandatory	Stationary Noise	T	All
9	Mandatory	Starting Noise	T	MUs, locos

Spec. 7 - Passing-by Noise

<u>Definition of environmental specification:</u>				
Passing-by noise				
<u>Environmental performance indicator:</u>				
LpAeq,Tp in 7,5m distance for conventional trains and TEL in 25m distance for high-speed trains. (Measurement conditions specified by TSI)				
<u>Target Value:</u> As defined by TSI				
<u>Long-term Goal:</u> to be defined				
Priority:	Mandatory			
Type of specification:	Target specification			
Application:	All kinds of rolling stock			
Economic effects on:	Initial investment costs	Operating costs	End-of life costs	Image gain
	↑	→	→	↑

Diesel Exhaust Specifications

No	Priority	Environmental Specification	Type	Applicable for
		Diesel Exhaust Emissions		
10	Mandatory	Diesel Exhaust Emissions	T	DMUs, D-locos
11	1	Diesel Emission Factors for Specific Load Conditions	P	DMUs, D-locos
12	2	Diesel Exhaust Emissions at Longer Standstills	D	DMUs, D-locos

Spec. 10 - Diesel Exhaust Emissions

<u>Definition of environmental specification:</u> Exhaust Emissions for NOx, CO, HC, and PM				
<u>Environmental performance indicator:</u> Emission in g/kWh for standardised load factors (load cycles)				
<u>Target Value:</u> As defined by EU directive 97/68/EC (and 2004/26/EC) and their equivalent in national laws				
<u>Long-term Goal:</u> Stage III B values (only achievable by exhaust gas after-treatment – feasibility subject to technical review of the directive before 31 December 2007)				
Priority:	Mandatory			
Type:	Target specification			
Application:	Diesel multiple units and locomotives			
Economic effects on:	Initial investment costs	Operating costs	End-of life costs	Image gain
	↑	↗	→	↑

Spec. 11 - Emission – Specific Load Conditions

Definition of environmental specification:

Exhaust emission of NOx, CO, HC, PM according to the “homologation certificate” (for each load stage of the applied test cycle, e.g. ISO 8178 F or C1)

Environmental performance indicator:

Emission in g/kWh

Priority:

1

Type of specification:

Performance specification

Application:

Diesel multiple units and locomotives

Economic effects on:

Initial investment costs

Operating costs

End-of life costs

Image gain

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→

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Spec. 11 - Emission – Specific Load Conditions

Allows to:

- Compare engines in realistic load conditions
- Design low-emission driving patterns
- Communicate exhaust emissions of fleet

Energy Specifications

No	Priority	Environmental Specification	Type	Applicable for
		Energy Efficiency		
1	1	Traction Energy Consumption	P	MUs, locos
2	1	On-board Energy Consumption	P	All
3	1	Energy Recovery / Regeneration	D	All
4	2	Energy Management for Parked Vehicles	D	MUs, pass. coaches
5	2	Energy-metering Devices	D	MUs, locos
6	2	Specific Mass	P	All

Spec. 1 - Tractive Energy Consumption

<u>Definition of environmental specification:</u>				
Energy consumption of tractive effort				
<u>Environmental performance indicator:</u>				
Traction energy consumption (kWh) for specific operation pattern				
<u>Long-term Goal:</u>				
Traction energy consumption for given operation patterns according to standardised methodology (standardised definition of simulation and verification measurements)				
Priority:	1			
Type of specification:	Performance specification			
Application:	Multiple units, locomotives			
Economic effects on:	Initial investment costs	Operating costs	End-of life costs	Image gain
	↑	↓	→	↗

Spec. 1 - Tractive Energy Consumption

Basis to evaluate energy-related Life Cycle Costs

Operation pattern:

- one (or a set of several) specific route(s) or
- a standardised pattern

➤ ***Need: Harmonisation of test cycles for energy consumption***

Spec. 3 - Energy Recovery / Regeneration

<u>Definition of environmental specification:</u>				
Equipment of the train with energy recovery / regeneration / storage				
Priority:	1			
Type of specification:	Design provision			
Application:	All kinds of rolling stock			
Economic effects on:	Initial investment costs	Operating costs	End-of life costs	Image gain
	↗	↓	→	↗

The railway has to specify the detailed functionality of the energy recovery/regeneration/storage system in the invitation to tender.

Materials/Recycling/Waste Specifications

No	Priority	Environmental Specification	Type	Applicable for
		Materials/Recycling/Waste		
13	Mandatory	Prohibited Materials	P	All
14	1	Hazardous Waste	P	All
15	2	Recycling Rate	P	All
16	2	Renewable Materials	P	All

Spec. 14 - Hazardous Waste

Definition of environmental specification:

Materials and components which during the lifespan or at the end of life of the vehicle will have to be treated as hazardous waste

Environmental performance indicator:

Amount (weight) of hazardous waste (according to European waste catalogue)

Priority:	1			
Type of specification:	Performance specification			
Application:	All kinds of rolling stock			
Economic effects on:	Initial investment costs	Operating costs	End-of life costs	Image gain
	↗	→	↘	↗

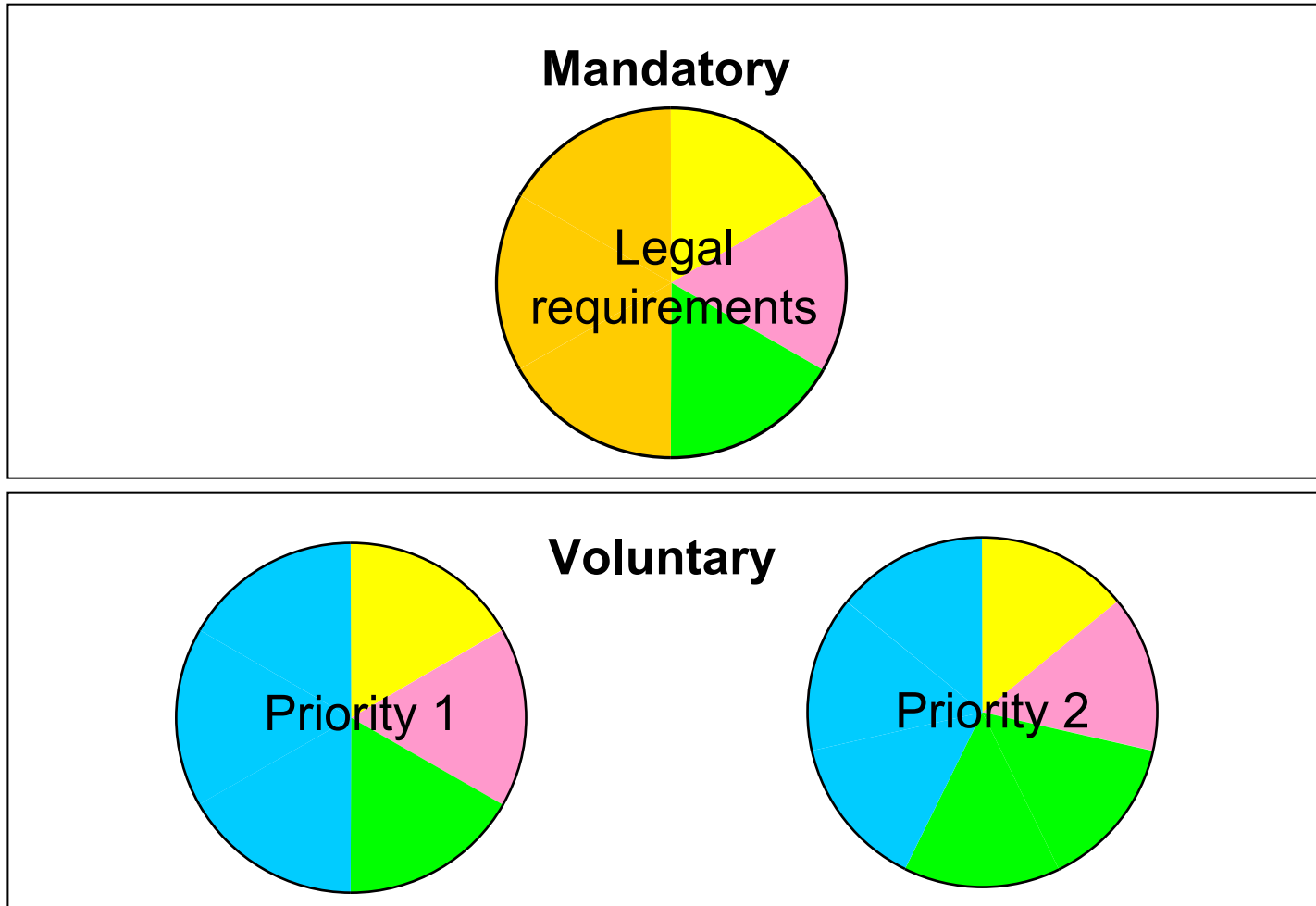
Other Specifications

No	Priority	Environmental Specification	Type	Applicable for
		Other		
17	Mandatory	Electromagnetic Fields	C	All
18	1	Emissions from Brake Pads	P	All
19	2	Spillage / Leakages	C	All

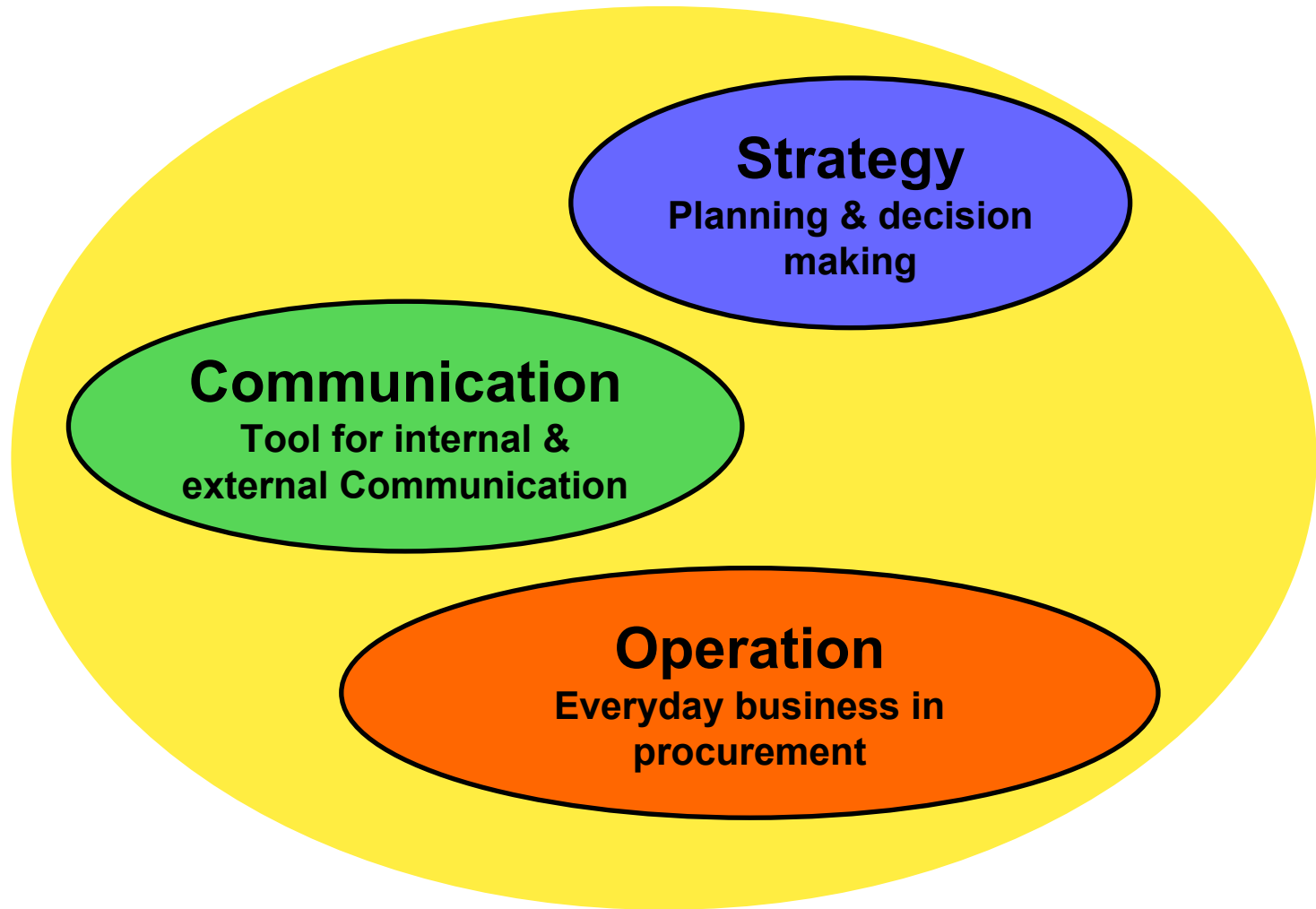
Spec. 17 - Electromagnetic Fields

<u>Definition of environmental specification:</u>				
EMF exposure at all locations of the vehicle where people are present				
<u>Mandatory compliance:</u>				
As defined in 2004/40/EC for all places where staff can be present				
<u>Target compliance:</u>				
As defined in EU Council Recommendation 1999/519/EC and EN 45502-1, -2-1, -2-2 for all places where passengers can be present				
Priority:	Mandatory			
Type of specification:	Compliance specification			
Application:	All kinds of rolling stock			
Economic effects on:	Initial investment costs	Operating costs	End-of life costs	Image gain
	↗	→	→	↗

Priorities of Specifications



Fields of Application



Fields of Application

Everyday Business in procurement

- Guideline for environmental procurement
- Has to be adapted
- Needs active promotion & implementation
- Feedback on experiences for revision of leaflet

Fields of Application

Planning & decision making

- Optimisation of procurement process with regards to environmental performance
- Defining mid- & long-term priorities in environmental performance
- Strategic fleet planning
- Identifying needs for monitoring
- Outlook on harmonisation

Fields of Application

Tool for internal and external Communication

Facilitate communication between

- Companies' units
- Different operators/manufacturers
- Operators \Leftrightarrow manufacturers
- Rail industry \Leftrightarrow public, politics & other stakeholders

Summary

Leaflet „Environmental Specifications for New Rolling Stock“

Current Status

- First step towards a harmonised approach in “Eco-Procurement”
- Guidebook with mainly functional specifications
- Needs adaptation and implementation

Outlook

- Feedback from practical use
- Further development of leaflet (revision process)

Thank You

More information and draft of leaflet downloadable from:

www.railway-procurement.org

Backup



Spec. 13 - Prohibited Materials

<u>Definition of environmental specification:</u>				
Hazardous materials used in construction				
<u>Environmental performance indicator:</u>				
Weight ratios or absolute amounts of defined hazardous materials				
<u>Mandatory performance:</u>				
Compliance with legislation (exclusion of legally forbidden materials)				
<u>Recommended performance:</u>				
Exclusion of unwanted materials				
Priority:	Mandatory			
Type of specification:	Performance specification			
Application:	All kinds of rolling stock			
Economic effects on:	Initial investment costs	Operating costs	End-of life costs	Image gain
	↗	→	→	↗

Spec. 18 - Emission from Brake Pads

<u>Definition of environmental specification:</u>				
Emissions from brake pads which are harmful to health or the environment				
<u>Environmental performance indicator:</u>				
Concentrations of defined hazardous materials in brake pads				
Priority:	1			
Type of specification:	Performance specification			
Application:	All kinds of rolling stock			
Economic effects on:	Initial investment costs	Operating costs	End-of life costs	Image gain
	↗	→	→	↗