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European tyre & rubber
manufacturers'association

An overview of waste & ELT management in Europe

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THE VOICE OF THE EUROPEAN TYRE & RUBBER MANUFACTURERS

TYRE CORPORATE members are

MICHELIN
BRIDGESTONE
GOODYEAR DUNLOP EUROPE
Continental
PIRELLI
HANKOOK PERFORMANCE TIRES
COOPERTIRES
nokian TYRES
Mitas
apollo
VREDESTEIN
MARANGONI
BRISA
TRELLEBORG

- **13 Tyre Corporate, 91 tyre plants in 21 EU countries, 15 R&D centers.**
- **EU production = 21% of the world tyre production;**
- **EU market ~251 million tyres sold; *of which ~23% are imports from non-ETRMA members (60 million tyres)***
- **EU tyre market = 32% of world tyre market;**
- **Direct employment in tyre sector : 360 000 people;**

Context

yesterday, today and tomorrow = 2030

Yesterday till today:

Our economy is built on cheap resources, cheap food, cheap water in an almost “unlimited” way and volume

Limited resources are: - Capital

- Labour

Technological innovation for more economics and return on investments

Tomorrow:

All natural sources have limited availability!

Context

Context and Intro

yesterday, today and tomorrow = 2030

yesterday, today and tomorrow = 2030

From yesterday till today and tomorrow = 2030

6 → 9 billion people on earth

30 % more water

45 % more energy

50 % more food

85 % more meat

100% more tyres?

Context

yesterday, today and tomorrow = 2030

1 kg of beef needs 1500 litres of water

70 % of all water consumption goes to agriculture!

Energy producers are amongst the largest industrial consumers of fresh water globally!

Alternative energy available?

Yes, no problem: Sun, wind, reuse heat, steam, etc.

Biomass-energy?? Only from " un-renewable" natural waste!

Plants, etc. 80–975 % = water; 25-20% = solid biomass, max!

Context

yesterday, today and tomorrow = 2030

There is hope!

For example, Urbanisation

2 % of the surface of the Globe

50 % of the number of people

Using 75 % of the energy and

80 % of the world's carbon footprint!

Source: Urban – Think Tank

Context

Context and Intro:
yesterday, today and tomorrow = 2030

yesterday, today and tomorrow = 2030

- **Energy, Water and Food-Nexus**
- **New energy-librium**
- **Re-inventing the world economy**

……..Economy = an opinion; base our economy on ecological rules, decouple the economic model, it's growth from energy and natural resources (DK)

- **Measure not only in money**
- **CO2-neutral is not enough; aim for positive carbon footprint**
- **Circular economy**
- **Renewable (raw) materials!**

Context

Context and Intro
yesterday, today and tomorrow = 2030
yesterday, today and tomorrow = 2030

Relevance for end of life products ??

VERY HIGH

Municipal Solid waste	**EU-yearly arising**	**300 million Tons**
End of life Tyres	**EU - Yearly arising**	**3.3 Mio Tons**
Packaging...		
Electric and electronic waste ...		
.....		

EU Waste Policy: Legal framework

Waste Legislation

- **Waste Framework Directive (incl. Hazardous waste)**
- **Waste Shipment Regulation**

Waste treatment operatio

- **Landfill Directive**
- **Incineration Directive**

- **Priority waste streams:**
  - → Packaging Waste
  - → End-of-life Vehicles
  - → End-of-life Batteries
  - → Waste from Electrical and Electronic Equipment

Waste Hierarchy

Producer responsibility is (not) the issue!

EU Waste Legislation Targets

SOME TARGETS IN EU WASTE LEGISLATION				
		min recovery	min recycling	collection rate
Packaging	2008	60%	55%	
Cars	2015	95%	85%	100%
Electronics	2015	70-80% (by August)	70-80% (by August)	min. 4kg/inhabitant per year or μ amount of WEEE collected in the three preceding years (by year-end)
	2015-2018	75-85%	55-80%	
	2016-2018			45% of EEE put on the market
	2019			65% of EEE put on the market or 85% of WEEE generated
Batteries	2011		50% to 75% (efficiency)	
	2012			25%
	2016			45%
Tyres	2006	0 landfill of tyres		
Biowaste diverted from landfills	2006	reduction to 75% of the 1995 level		
	2009	reduction to 50% of the 1995 level		
	2016	reduction to 35% of the 1995 level		
New targets (WFD)	2015	separate collection: at least paper / metal / plastic / glass		
	2020	50% municipal waste		
	2020	70% construction and demolition waste		

Source: EU Commission DG Environment

EU Waste Legislation Targets

All targets are up for review

End of Life Tyres

DRIVERS:

- **<u>THE LEGISLATION</u>: LANDFILL BAN, INCINERATION DIRECTIVE**

16.7.1999

Whole tyres landfill ban as from 16.7.2003

16.7.1999

Shredded tyres Landfill ban as from 16.7.2006

- **THE <u>INDUSTRY</u> COMMITMENT AND <u>PROACTIVE STRATEGY</u>**

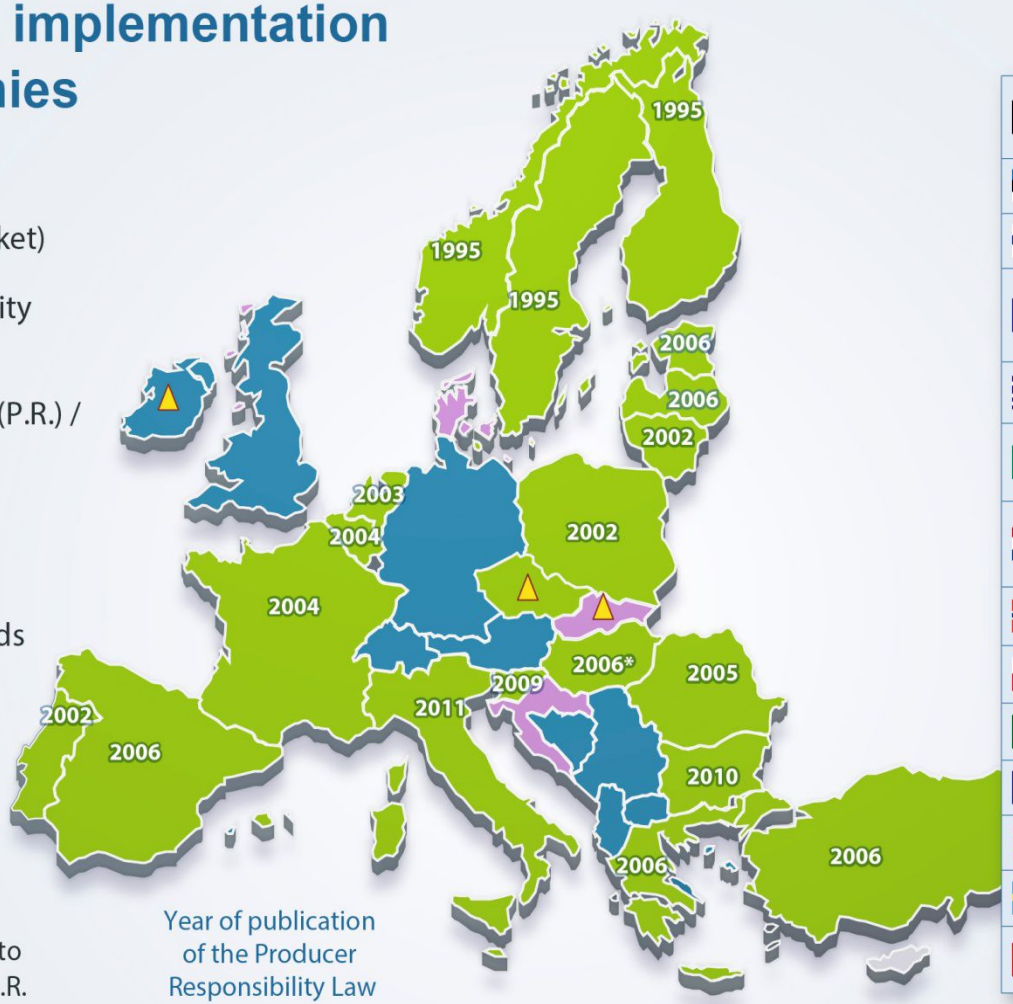
The EU Tyre Producers Strategy

- **Proactively** play a primary role in achieving the EU “0 landfill” objective on a sustainable basis
- **Long standing policy** of the European tyre industry
  started in 1994 → 2012 **~ 65%** of the European arising under P.R.
- Support **creation of ELT management companies (like LASDER)** at country level to implement the statutory requirements
- To **decrease** over years the **environmental fee for the benefit of the consumers**
- **No discrimination** between recycling and energy recovery options
- Active support to **R&D programs** and **standards** for the ELT derived products

ELT Management models in EUROPE

Country specific implementation and ELT companies

- Liberal system (Free Market)
- Government responsibility financed through a tax
- Producer Responsibility (P.R.) / System with take-back obligation
- Change of regulatory framework (on-going / under discussion) towards a collective P.R.



Belgium	RECYTYRE
Estonia	Eesti Rehviliit
Finland	Suomen Rengaskierrätys Oy
France	ALIAPUR
Greece	eco elastika
Italy	ecopneus
Netherlands	Vereniging Band & Milieu
Norway	Norsk Dekkretur AS
Poland	CUO
Portugal	valorpneu
Romania	ECO ANVELOPE
Spain	SIGNUS
Sweden	SDAB
Turkey	LASDER

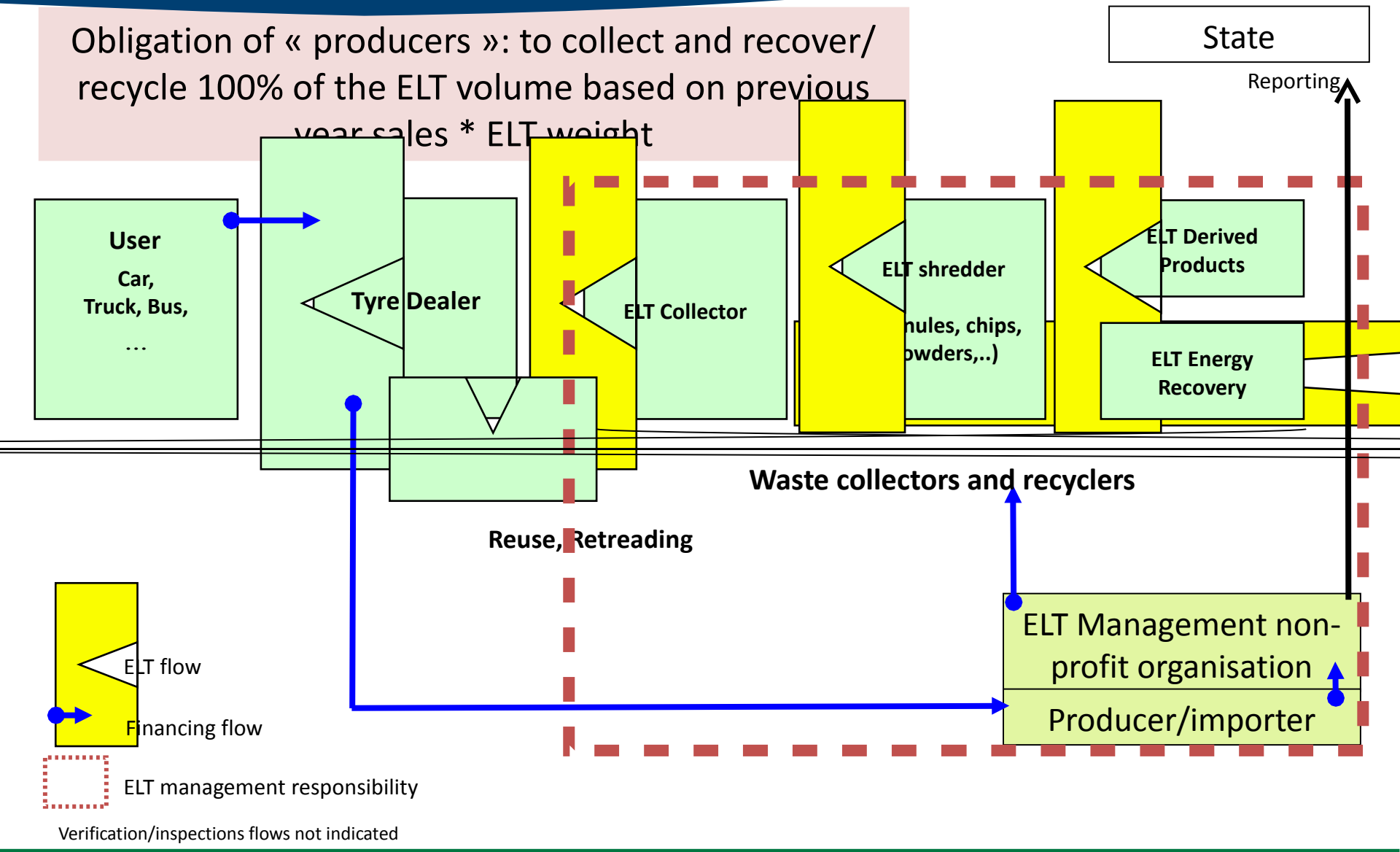
*** Hungary:**
In 2012, the Hungarian administration changed the 2006 legal framework from a collective to an individual implementation of P.R.

Producer Responsibility Model ***65% -*** *Free Market Model* ***33% -*** *Tax Model* ***2%***

(of UT arisings in EU27+CH+NO+Turkey)

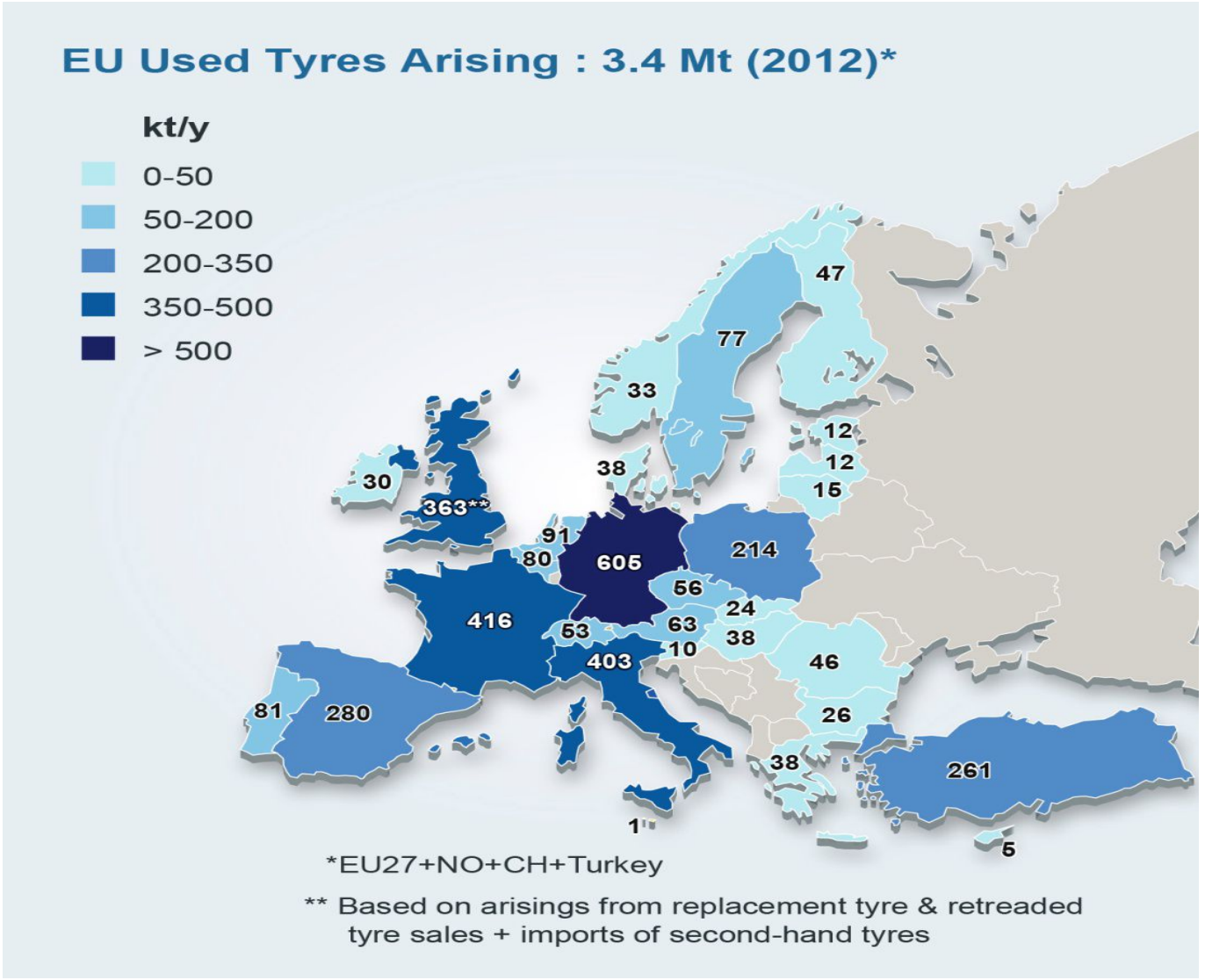
The main model in EUROPE is Producer responsibility system

Obligation of « producers »: to collect and recover/ recycle 100% of the ELT volume based on previous year sales * ELT weight



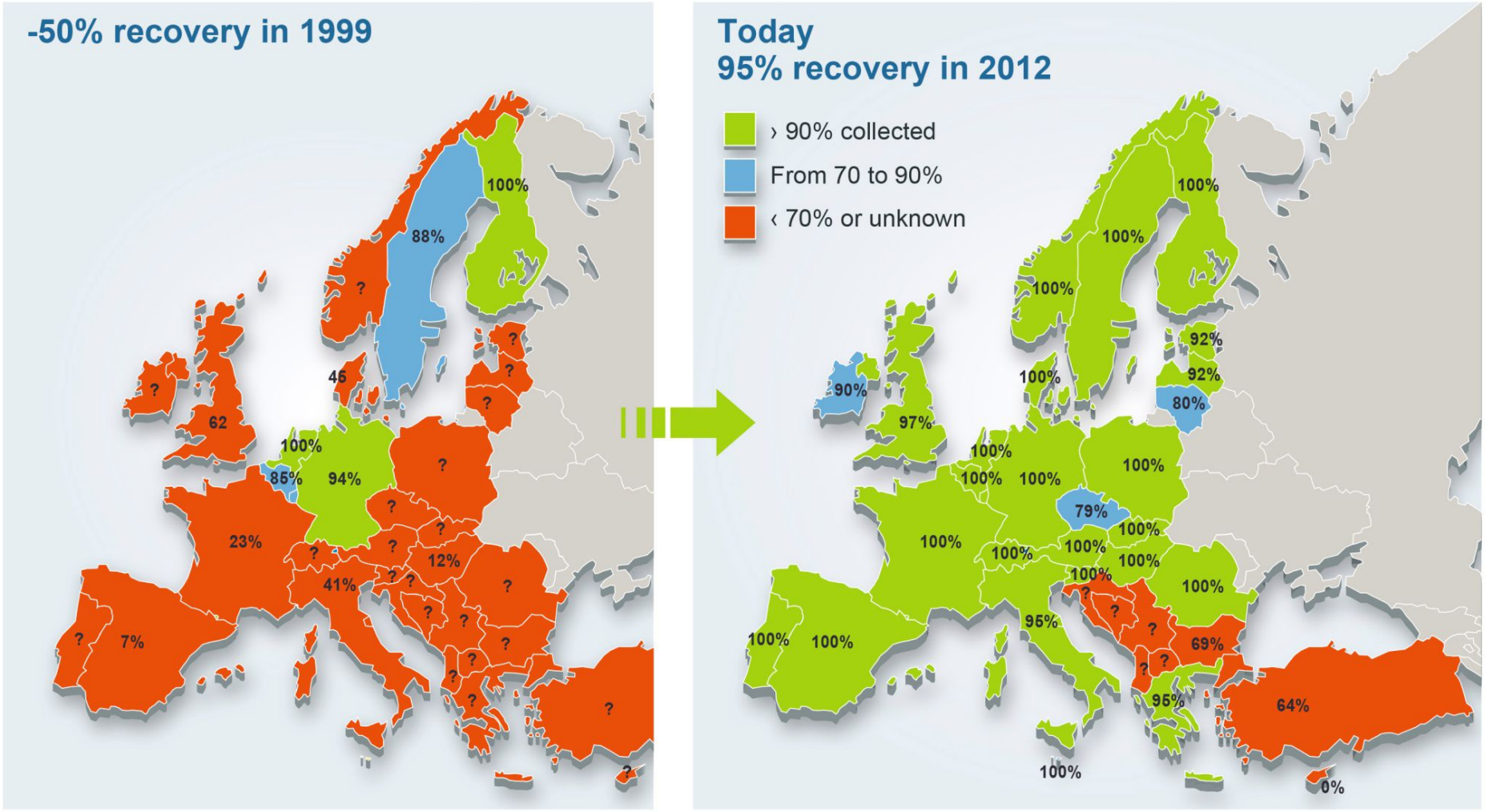
Verification/inspections flows not indicated

Used Tyres Arisings in Europe



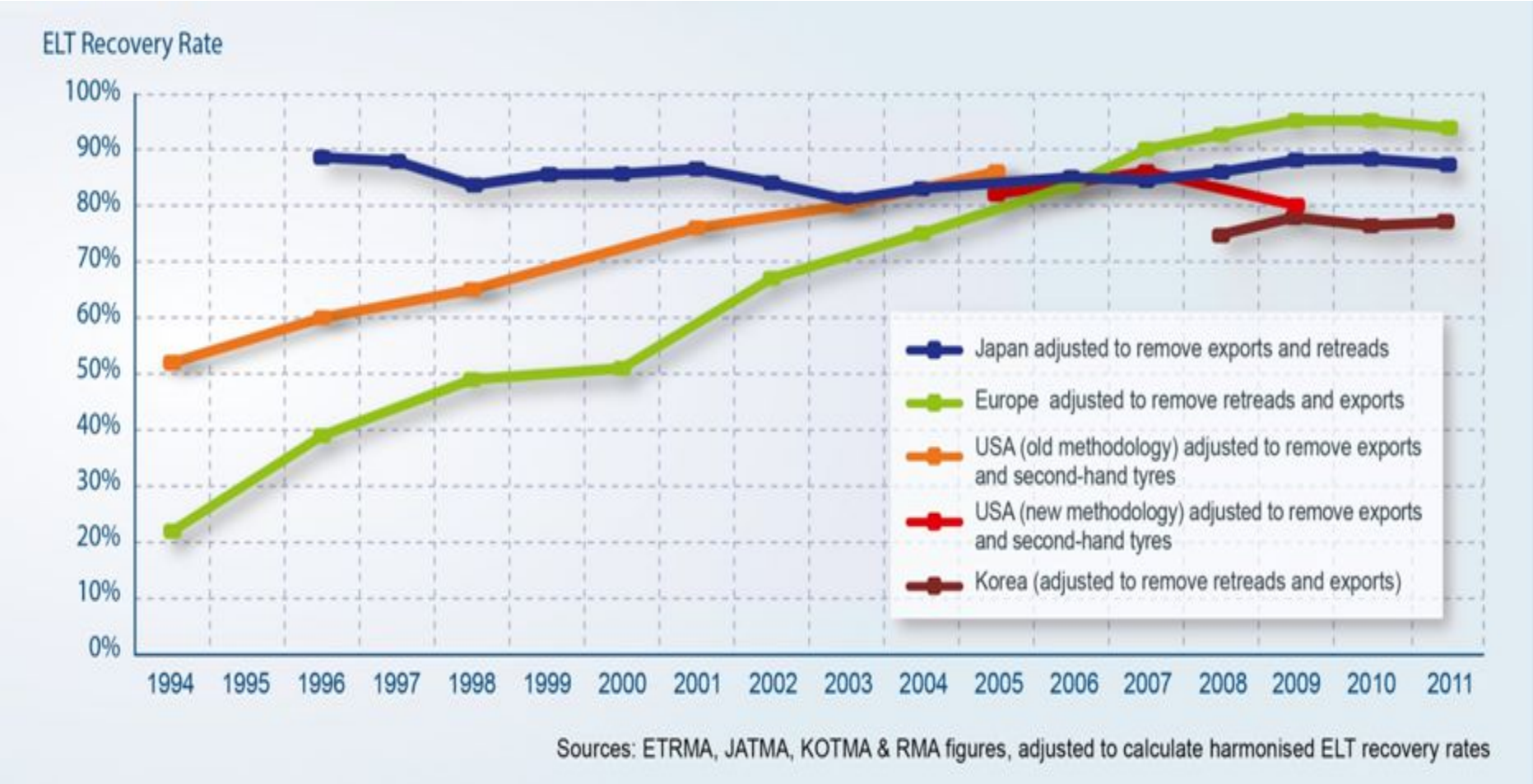
Source: ETRMA

Tyre Recovery in Europe



Source: ETRMA

Global Recovery Trends



Sources: ETRMA, JATMA, KOTMA & RMA figures, adjusted to calculate harmonised ELT recovery rates

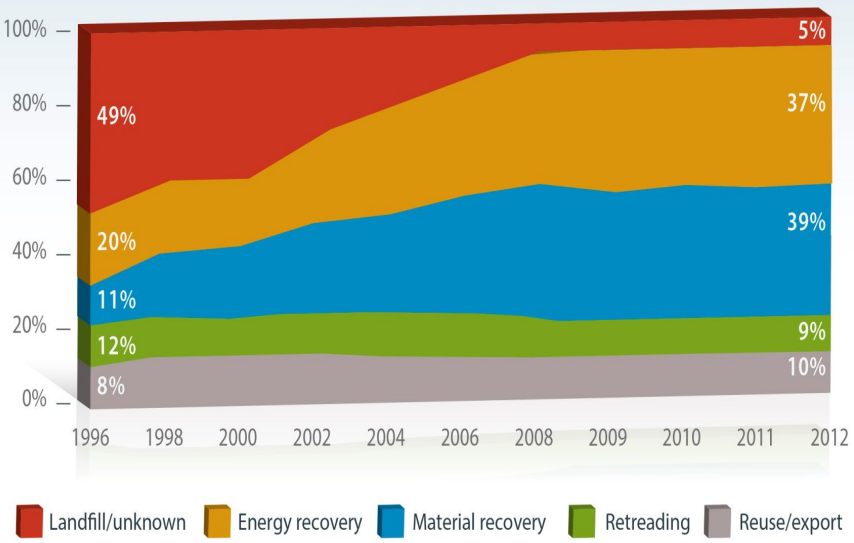
Benefits related to ETRMA ELTcos network

Benchmarking/Exchange of Best practices between ELT management Companies

***Operational**

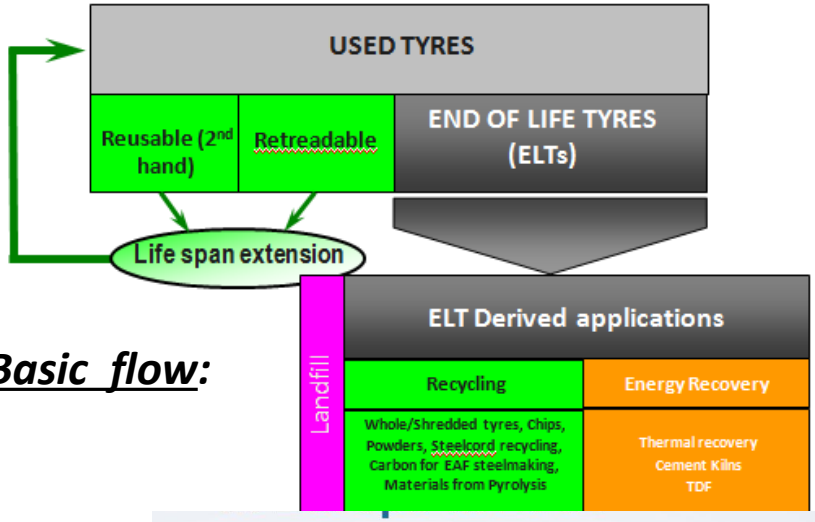
- **sorting**
- **Application**
- **Capacity building**
- **fire prevention**
- **storage**
- **IT system**

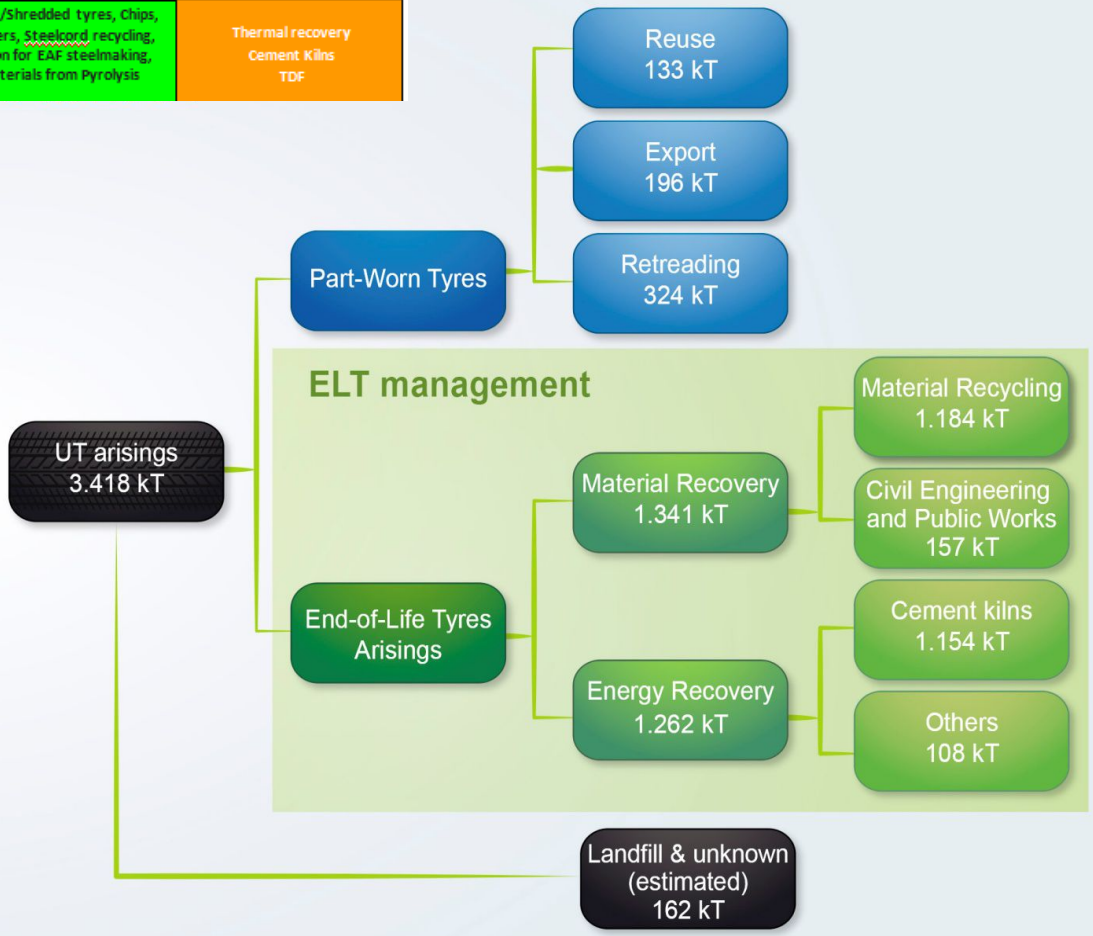
***regulatory**



Elt management in 2012

Basic flow:





Source: ETRMA

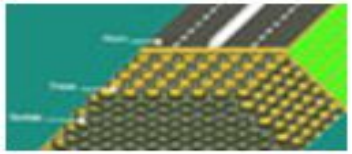
Evolution of ELT Recovery & major applications

- ELTs have a **multitude of applications** using rubber properties and composition (elasticity, draining, mechanical, shock attenuation, noise-reducing, biomass and C content, ...)
- ELT-derived products **substitute conventional fuels and raw materials**



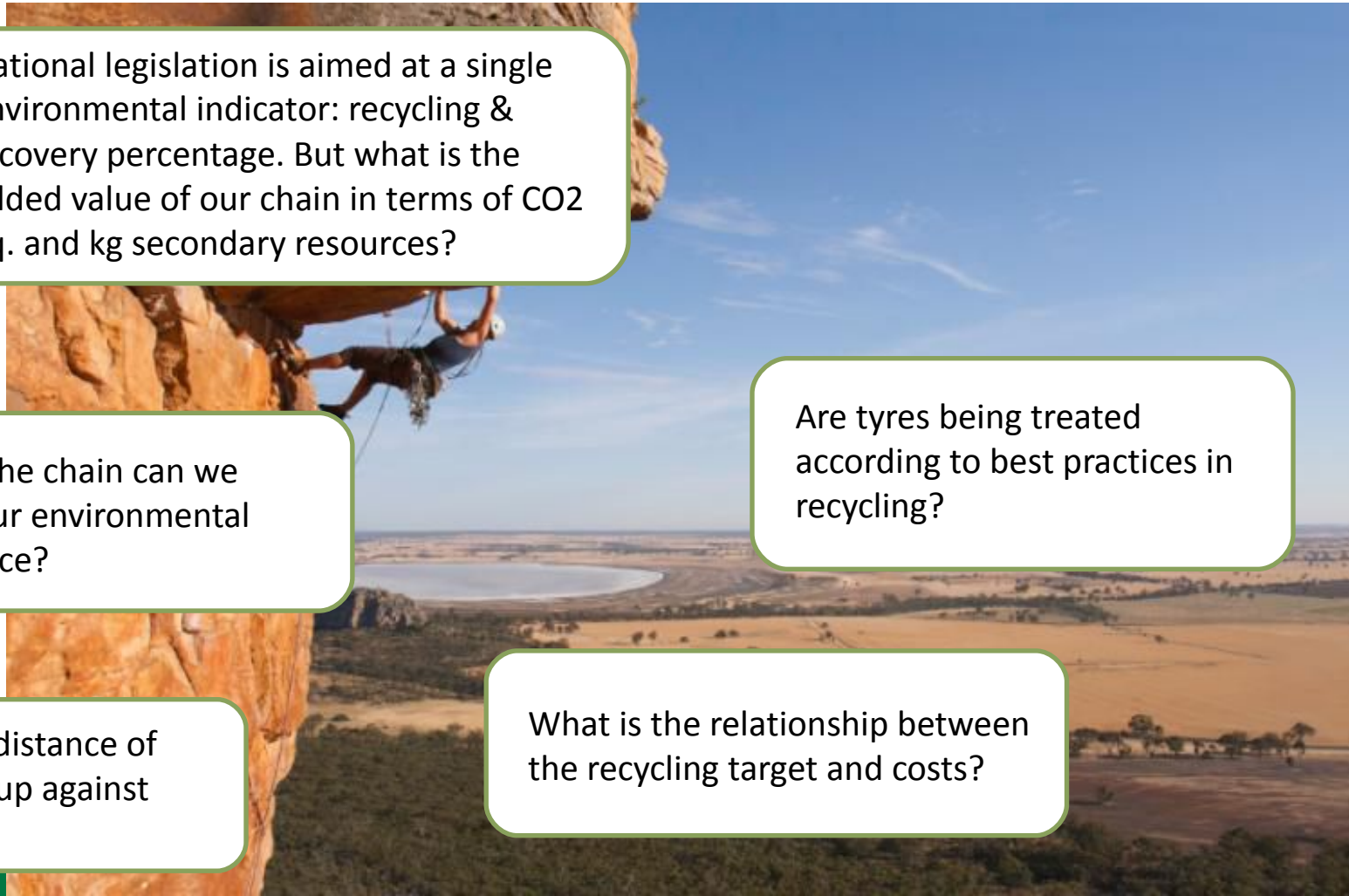




The tyre case within the EU-framework

Our questions on sustainability



National legislation is aimed at a single environmental indicator: recycling & recovery percentage. But what is the added value of our chain in terms of CO2 eq. and kg secondary resources?

Where in the chain can we improve our environmental performance?

Are tyres being treated according to best practices in recycling?

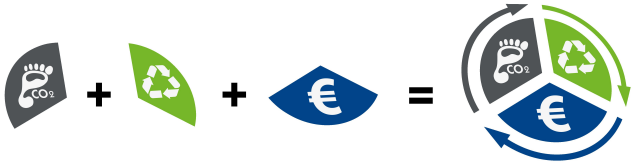
Does the added distance of transport weigh up against better recycling?

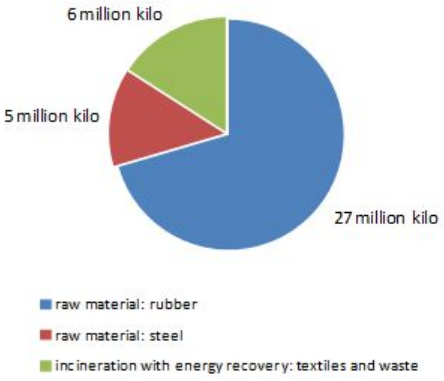
What is the relationship between the recycling target and costs?

How T.I. measures the environmental performance?

- Environmental performance with LCAs.
- LCAs answers these questions by
  - quantifying the impact of the whole chain and
  - providing insight in the impact of the chain
- Looks at correlation between:
  - Ecology - CO2-footprint
  - Recycling – resource management & preservation
  - Economy – costs and revenues

Recycling: 32 million kilo valuable raw materials per year





Conclusions

The future for a new tyre to become an used ELT tyre is bright.

http://www.etrma.org/tyres/ELTs/ELT-management