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Used Tires Management System in Portugal

“Contemporary Approaches
to Rubber Goods and Tires
Recycling”

Russian Gubkin State
University of Oil and Gas

Moscow
2011, June 1

Topics

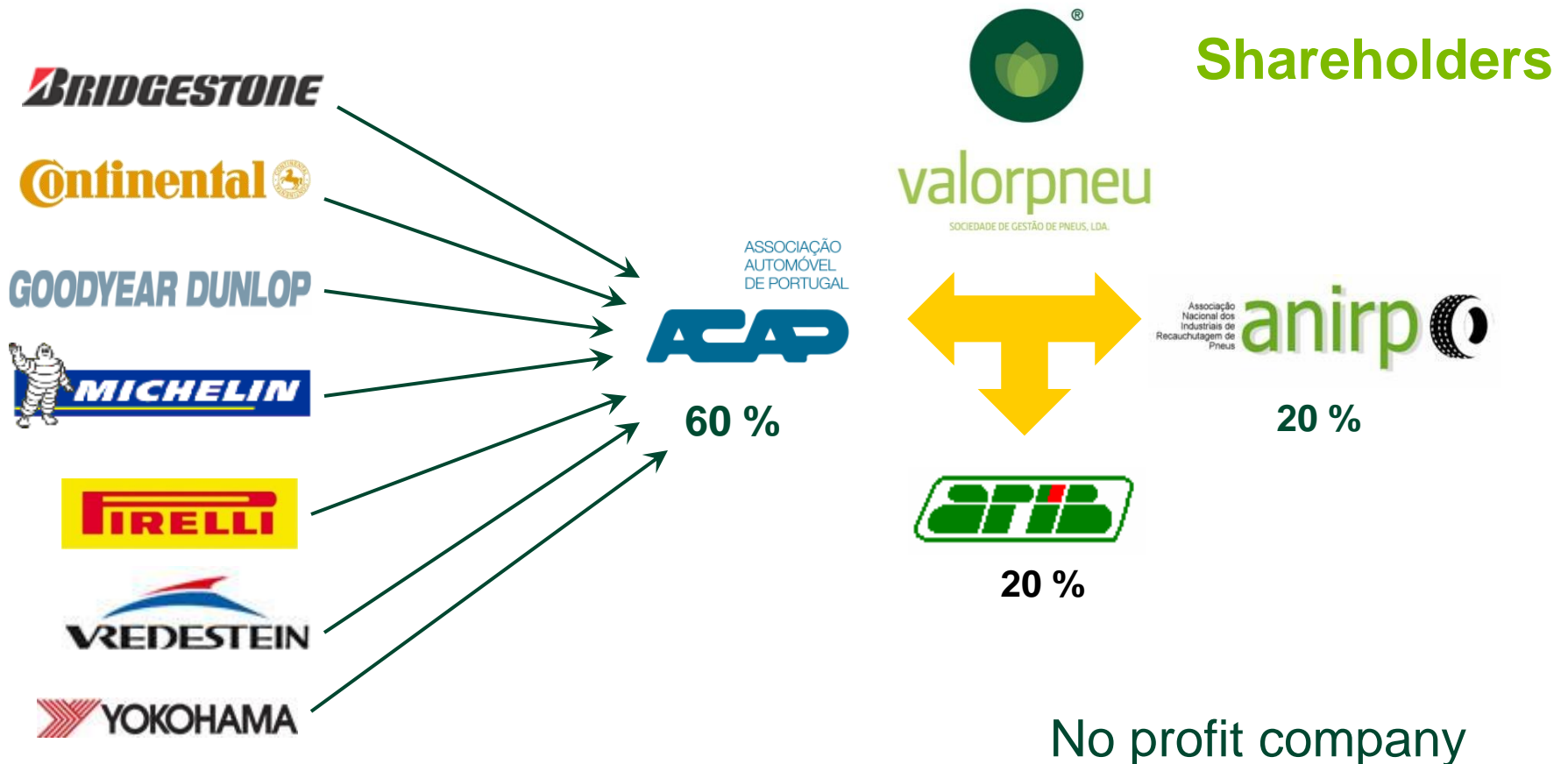


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- ➡ Valorpneu
- ➡ Legal Framework
- ➡ The creation of Valorpneu
- ➡ Valorpneu Chronology
- ➡ Operating Model
- ➡ Activity Results 2003-2010
- ➡ Financing
- ➡ Valorpneu in Europe
- ➡ R&D in Used Tyres

The Used Tires Management System in Portugal



Decree-Law nº 111/2001, 6th of April

updated by Decree-Law nº 43/2004, of 2nd March

- Establishes the principles and the norms applied to the used tires management
- Objectives of waste prevention, recovery, retreading and recycling activities
- The improvement of the tires stakeholders environmental behavior
- Defines legal targets for recovery, retreading and recycling
- Introduces the principle of producer responsibility

Decree-Law nº 111/2001, 6th of April

updated by Decree-Law nº 43/2004, of 2nd March

➡ Legal Targets:




	2003	2007	>2009
Collection of the used tires	85%	95%	96%
Retreading of the used tires	25%	30%	27%
Recycling (from tires not retread)	60%	65%	69%
= from total of used tires	45%	45,5%	47,6%
Energy Recovery	the remnant		

The creation of Valorpneu



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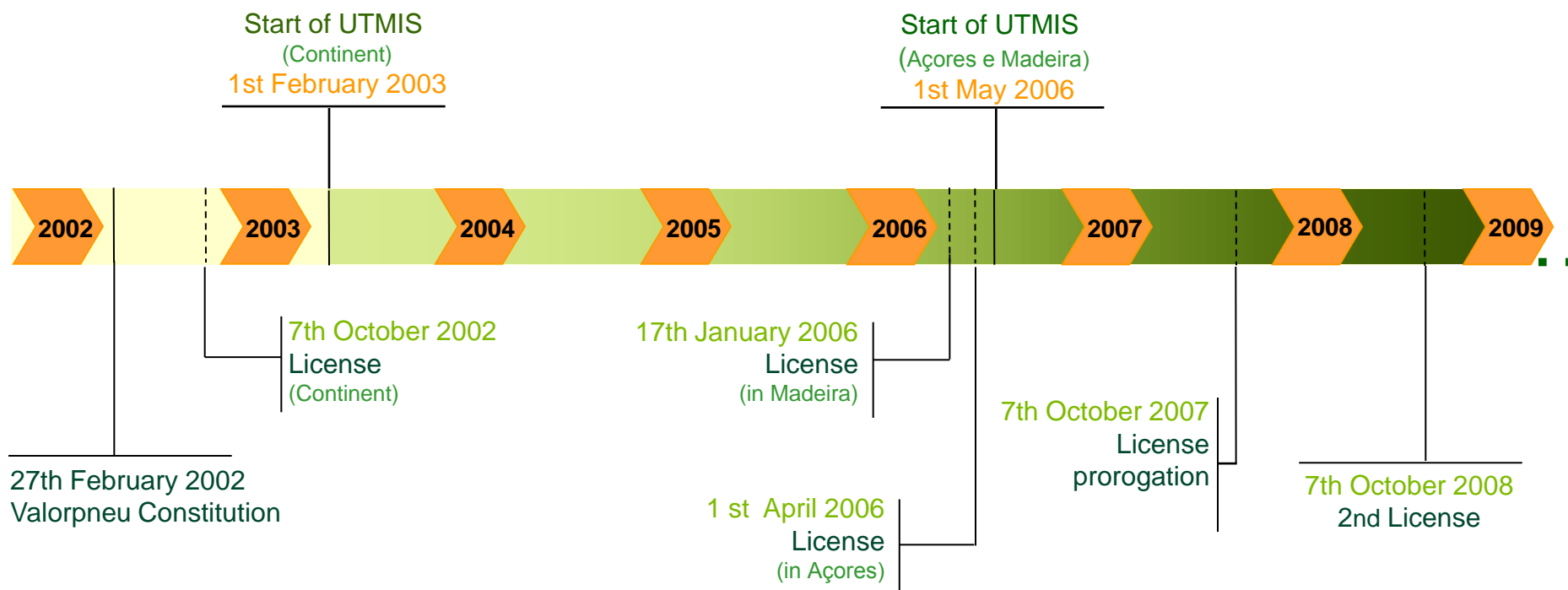
	Producers 	Academia 	Government 
Problem identification	Provide feedback to the government proposals	Support problem characterization	Assessment of the environmental impacts of EOL tires disposal European and national legal framework assessment Consultation process with stakeholders Decision to legislate
Legal framework			Legal framework definition and law publication
Strategic assessment	Manufactures gathered in their association to promote a common solution for the EOL management Decision to obtain support from academia Economical and implementation issues analysis Strategy to implement the EOL tire management system Formal strategy formulation	Academia support for the strategic assessment Develop a model to support strategy definition Model refinement	Technical and policy issues analysis Assessment of the strategy
Implementation process	Legal constitution of the Valorpneu society Development of the recovery, logistics and EOL treatment operations network		Valorpneu got its license for EOL management operations Licensing of the recovery operators and EOL infrastructures
Solution monitoring	Strategic and implementation corrections	Assessment of results and implementation process	Assessment of goals and economical achievements, in a year by year basis

Time



Valorpneu Chronology

Main events

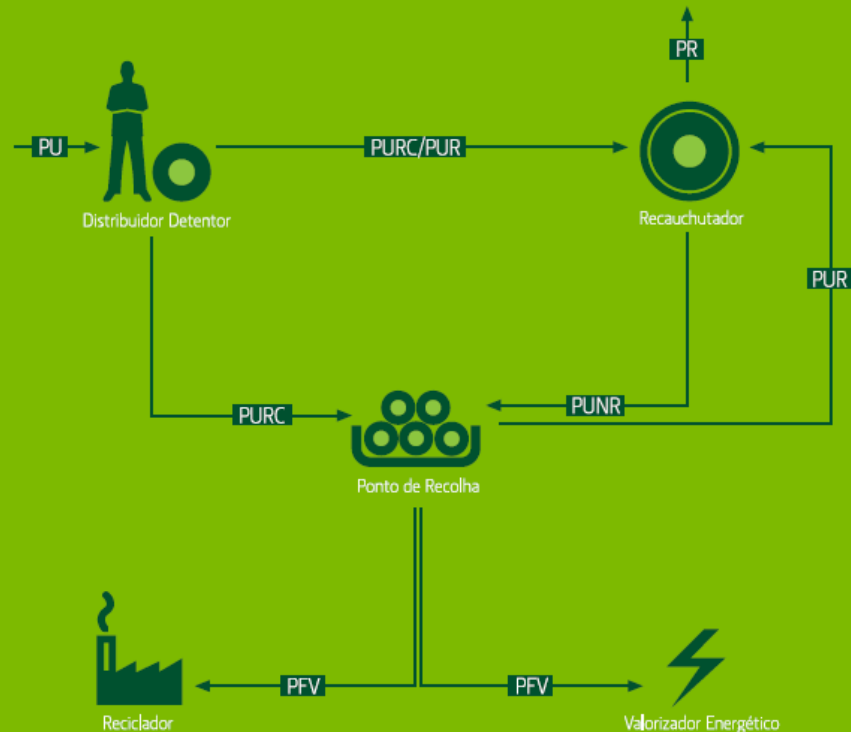


Operating Model

Used Tires Management Integrated System

Distributor/ Retailer

(is obliged by law to receive the used tires in the same quantity as he sells new tires)



PU	PNEUS USADOS
PR	PNEUS RECAUCHUTADOS
PURC	PNEUS USADOS RECOLHIDOS

PUR	PNEUS USADOS RECAUCHUTÁVEIS
PUNR	PNEUS USADOS NÃO RECAUCHUTÁVEIS
PFV	PNEUS EM FIM DE VIDA

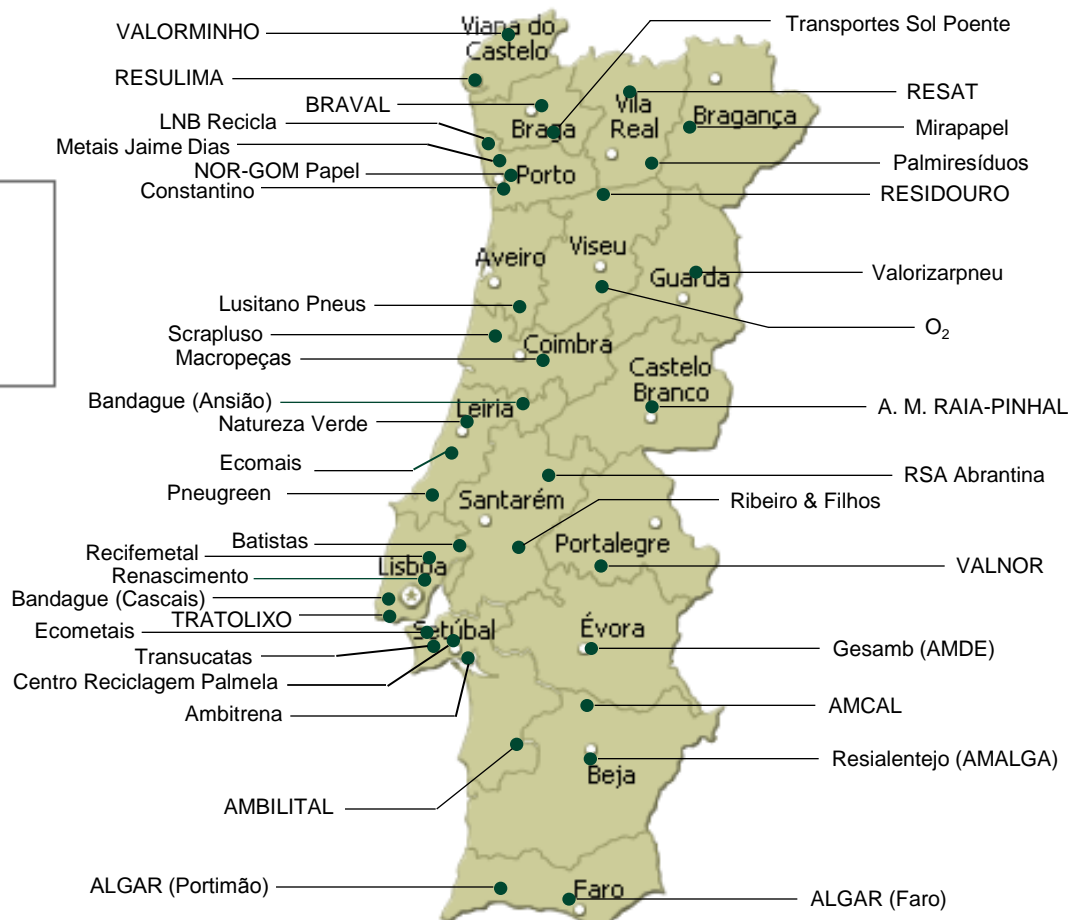
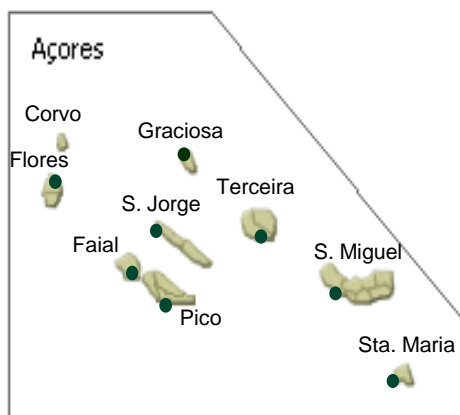
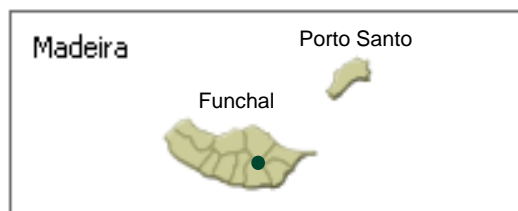
Collecting Points Network



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5.168
Used Tires Origins



Continent

39

Madeira

1

Azores

8

Collecting Points



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SPECIFICATIONS



Retreaders Network

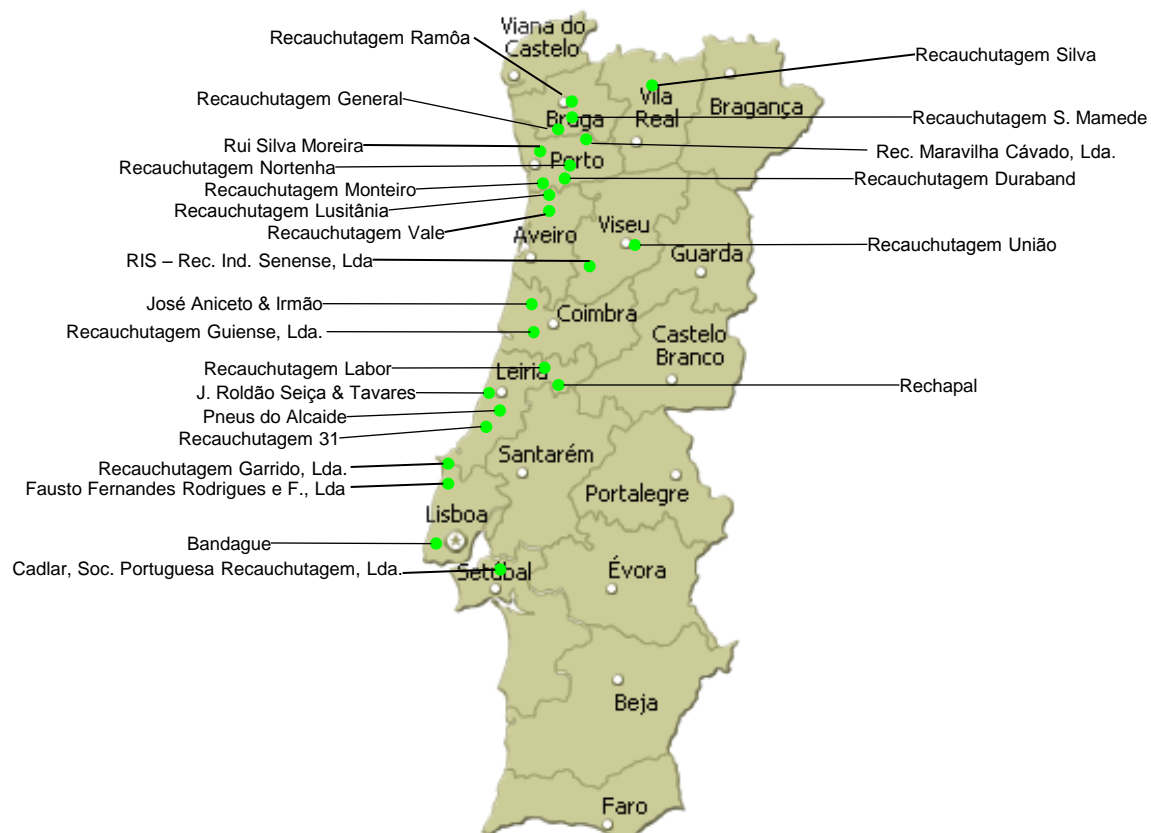
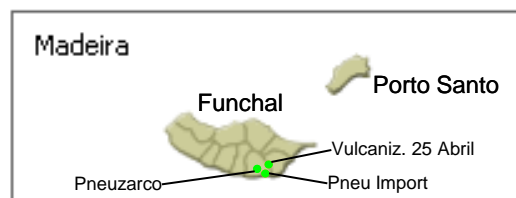
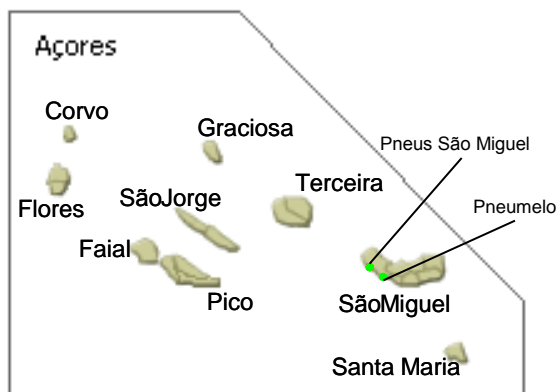


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Retreading Companies



Retreading Process



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Inspection



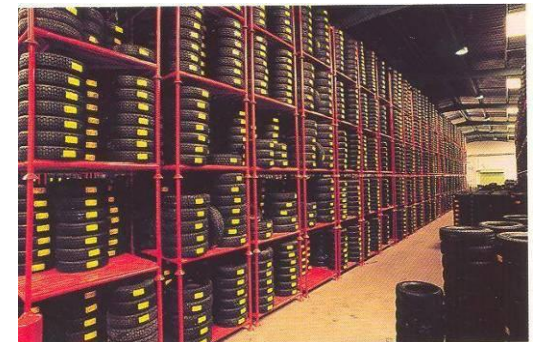
Scraper



Extrusion



Autoclave



Recovery Network



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Recovers Operators

★ **Recicladores**

⬠ **Valorizadores Energéticos**

1

Shredder Operator

▲ **Fragmentador**

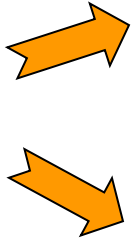


Used Tires Solutions



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Reuse



Used Tires Solutions

Reuse of whole tyres

Protection walls of the new circuit of Algarve - Autódromo Internacional do Algarve, located in Portimão, were made with tyres from Valorpneu (+ 1.100 ton)



Used Tires Solutions

Recycling



Chips



Logistics Innovation Award – Paris



Antracite substitution - Siderurgy



Granulates



Synthetic sports fields



Algarve: 29 Marca – 01 April 2007



Used Tires Solutions

Energy Recovery



Whole
Tires



Chips



Activity Results 2003-2010



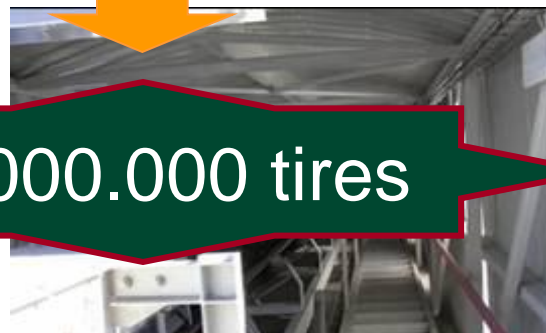
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Volumes 2003 - 2010



60.000.000 tires



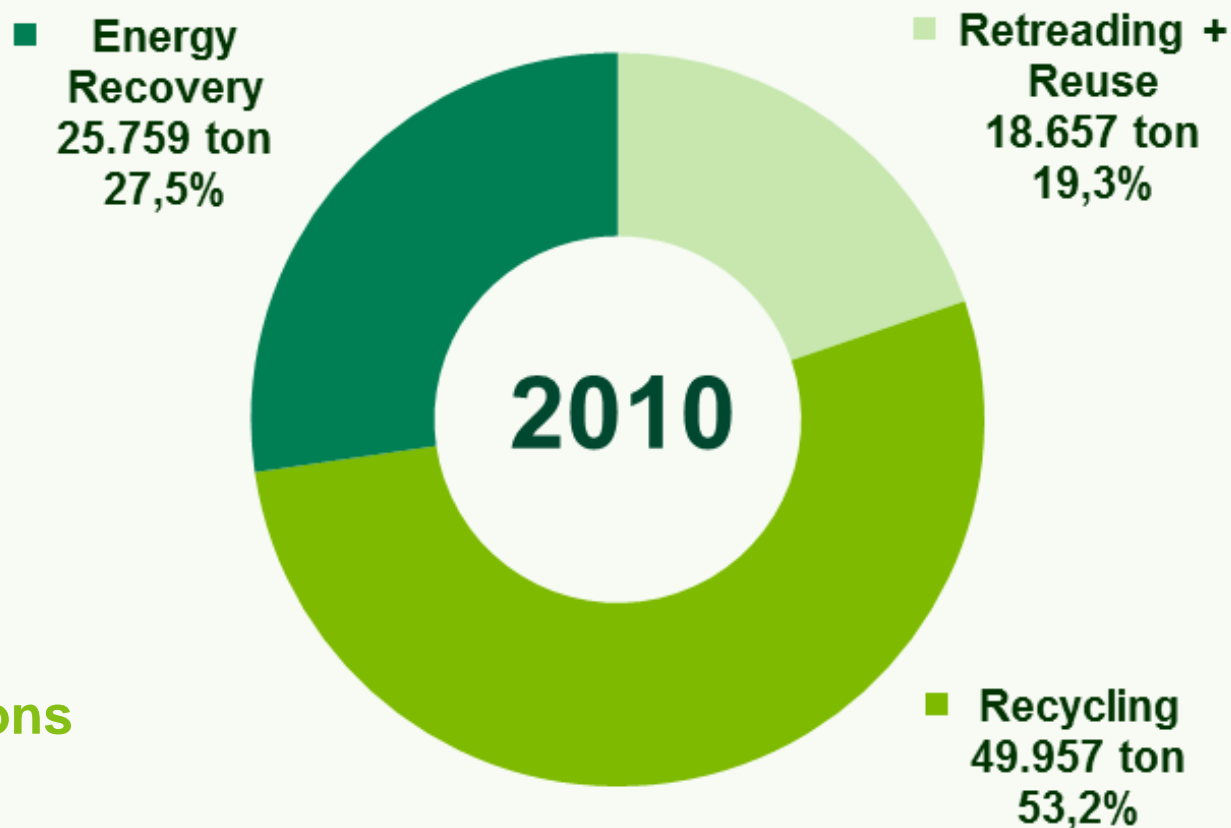
Activity Results 2010



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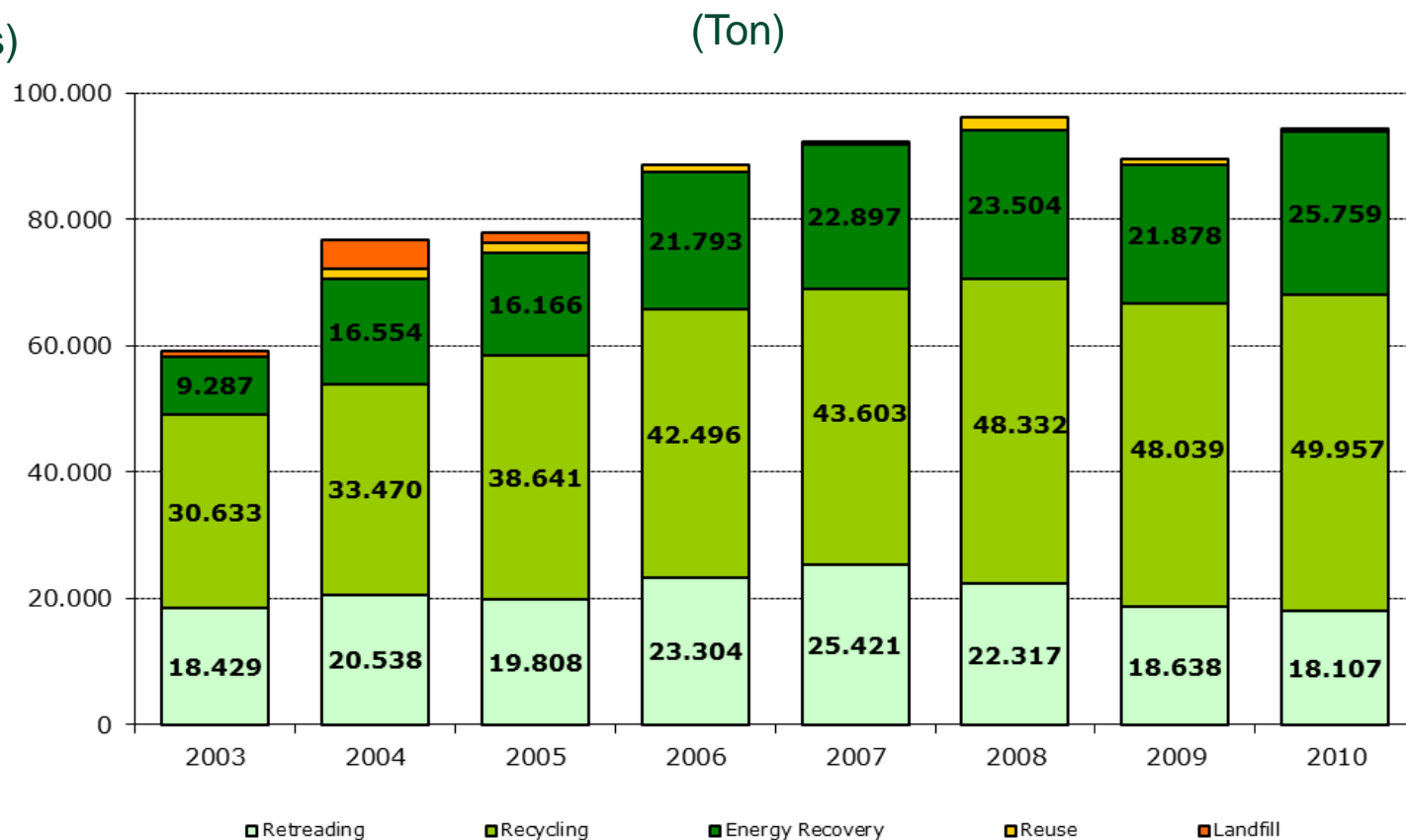
Tires treated



Total = 94.373 tons
(without stockpiles)

Activity Results 2003-2010

Destinations 2003 – 2010 (Without stockpiles)



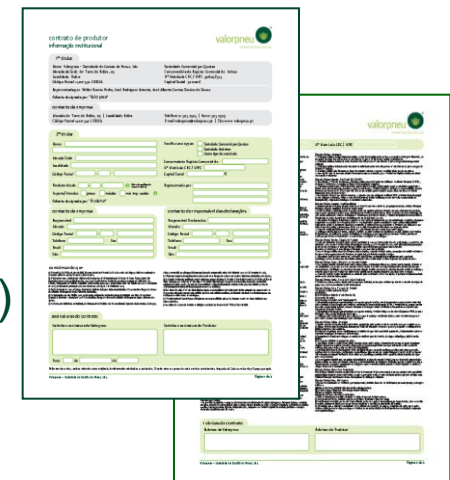
The adhesion of the “Producer” to Valorpneu’s system

➡ Who is the “Producer”?

Any entity that **manufactures, imports or introduces** new or used tires in the domestic market (national territory), including those who manufacture, imports or commercialize vehicles, aircraft or any other equipment containing tires

➡ How to join Valorpneu’s system?

Through a **contract** signed with Valorpneu
(simplified procedure - available on Valorpneu’s website)



The image shows a detailed form titled 'Certificado de produtor' (Producer Certificate) from Valorpneu. The form is divided into several sections for data entry, including:

- Identificação do produtor** (Producer Identification): Fields for company name, CNPJ, and address.
- Informações de contato** (Contact Information): Fields for phone, fax, and email.
- Informações de produção** (Production Information): Fields for production volume, types of tires, and other technical details.
- Assinatura e carimbo** (Signature and Stamp): A designated area for the producer's signature and official stamp.

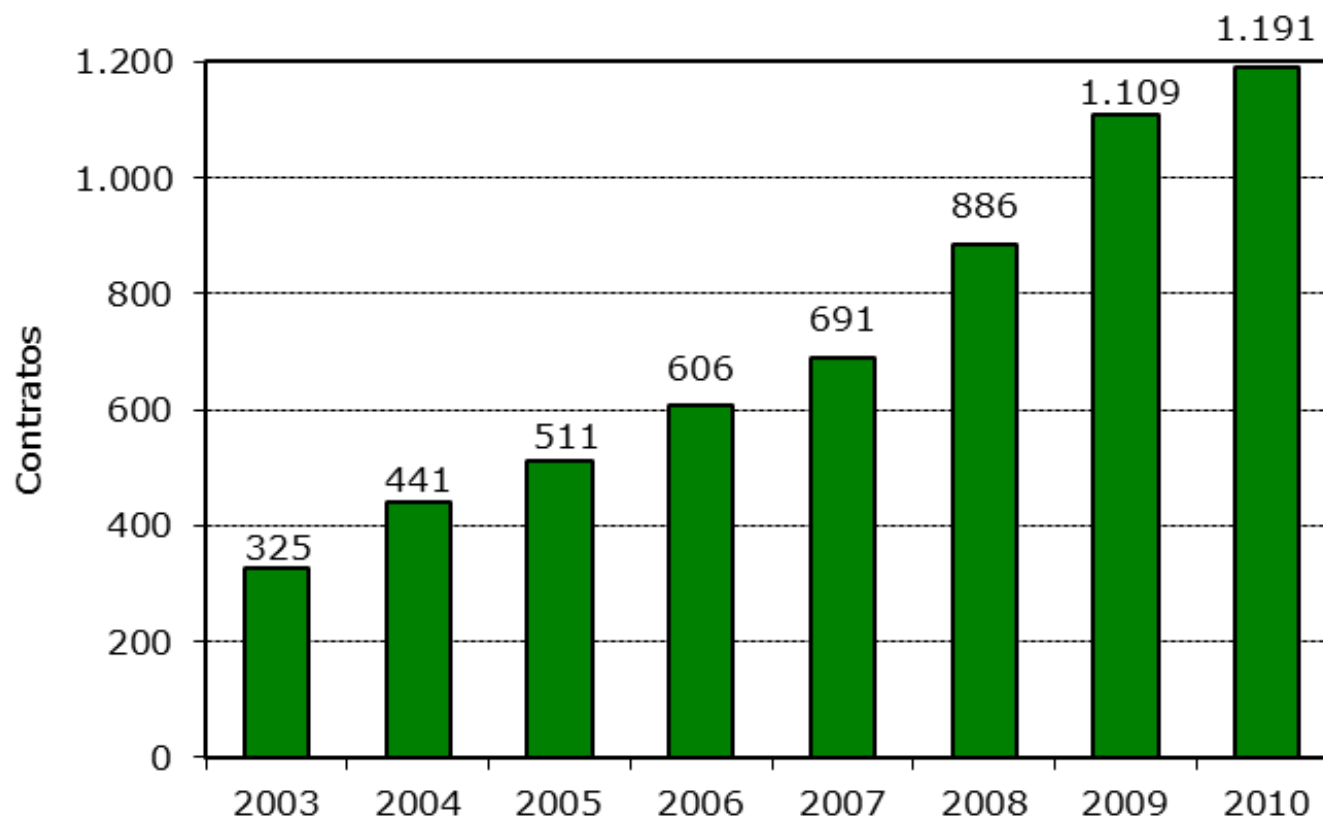
The form is presented in a clean, professional layout with clear headings and organized input fields.

Financing: The Producers



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Producers Contracts 2003-2010



Financing: Ecovalor

Fees

(updated at
01.01.2008)

Visible fee

(in the invoice since
the producer till the
final consumer)

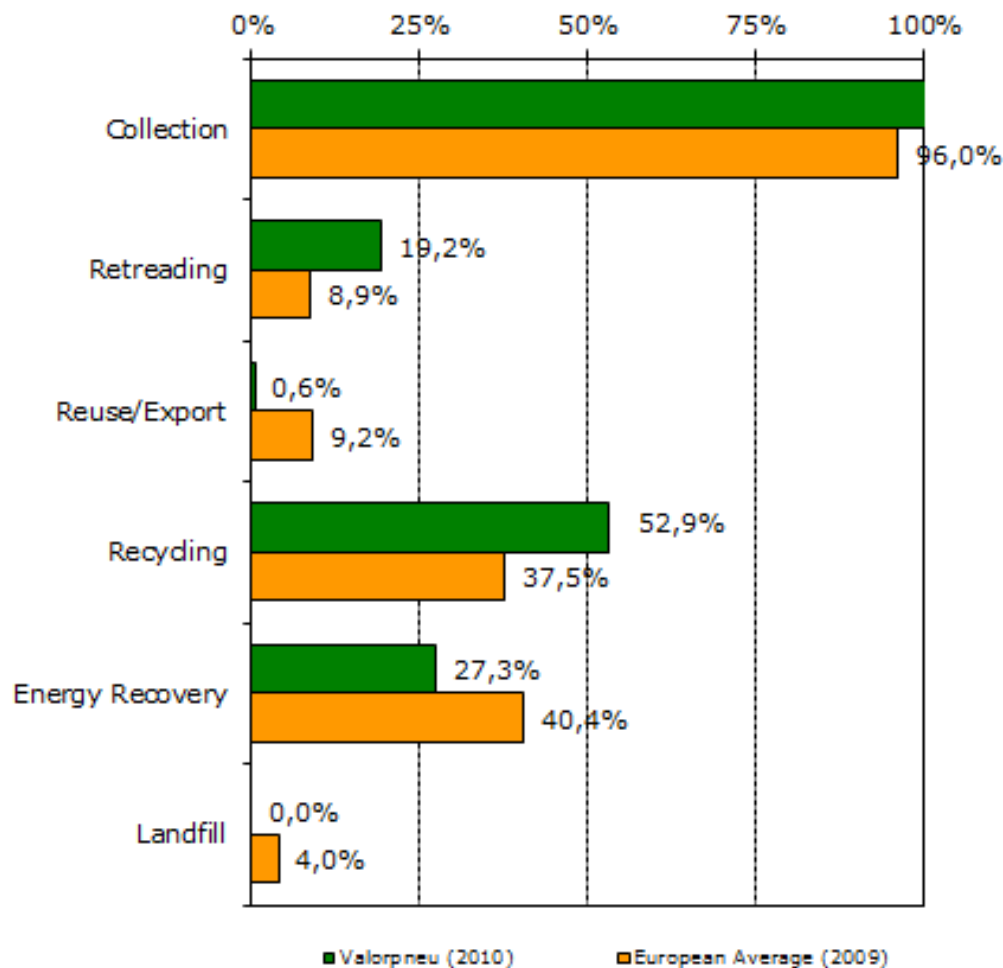
Tyre Categories	€/tyre
Passengers	1,00
4x4 on/off road	1,99
Commercial	1,57
Truck vehicles	7,81
Agriculture (diverse)	2,55
Agriculture (driving wheels)	9,47
Industrial (8"a 15")	2,74
Rubber Solid Tires	4,10
Civil Engineering (< 12.00-24")	8,91
Civil Engineering (>= 12.00-24")	36,54
Motorbikes (> 50cc)	0,67
Motorbikes (<= 50cc)	0,23
Airplanes	1,00
Bicycles	0,07

Valorpneu in Europe



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From ETRMA's Press Release: "A valuable resource with growing potential. 2010 Edition"
(European Tyre & Rubber Manufacturers' Association)

R&D in Used Tyres

Support to R&D projects and promotion of new ideas for innovative solutions for used tyres



- Encourage and conduct collaborative R&D for the development of products derived from tires, technically and economically feasible
- Adapt and create technical specifications and standards for the use of new applications
- Approval and certification of new products from used tires
- **Transform the materials derived from used tires into products with added value**

R&D in Used Tyres: Valorpneu's Innovation Prize

2009



1st Prize:

“Processing of Waste Tires in High Value Added Products (activated carbon)”

Carlos Eduardo Laginha
University of Évora



2010



1st Prize:

“Maze made of Tires”

Ana Arribas e Cátia Fernandes
Polytechnic Institute of Bragança



2011



New rule for 2011:

- Extension of the scope of the Prize to works developed in countries of the Community of Portuguese Language Countries (CPLP)

Valorpneu Contacts



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