

Extended producer responsibility. The case of used tyres¹ in Flanders (Belgium)²

1. Introduction

Over the past 25 years, the way in which we handle waste has fundamentally changed in Flanders. The policy advocated by OVAM (the Public Waste Agency of Flanders) is continuously evolving. Initially, the policy focused on cleaning up waste and setting up an effective infrastructure for waste management. Today, prevention and sustainable materials management (SMM) are crucial, as properly developed waste management does not automatically lead to sustainable production and consumption. A comprehensive overview of the waste and materials chain is crucial to find a permanent solution for the waste issue. It makes more sense to consider the materials chain for a service or product as a whole. The input of raw materials, the prevailing production and consumption patterns, the closing of material cycles, etc... all contribute to the waste problem.

Producers must take their responsibility in the area of waste. Therefore, the Flemish Government has introduced the Acceptance Duty. This obligation – as a type of extended producer responsibility (EPR) – ensures that those who produce and market products bear responsibility for the collection and processing of the resulting waste.

In Flanders, the Acceptance Duty was initiated as an instrument in waste policy in 1994. Initially, EPR was established for the following specific waste streams: paper waste, used batteries and accumulators, end-of-life vehicles, used tyres, and waste electric and electronic equipment (WEEE). In a later stage, more waste streams were added. The Acceptance Duty fits in the broader aim to minimize the total amount of waste generated in Flanders. Already for decades, OVAM has been successfully implementing an ambitious waste policy. Giving producers greater responsibility is part of this policy and has proven to help increase the amount of waste that is collected separately and is processed in an environmentally sound way. The recent transformation of waste policy into SMM policy implies the use of a lifecycle approach, which diverts from the focus on the end of life phase and instead addresses the whole lifecycle of a material. As Flanders is highly dependent on resource import, it aims at making production processes and consumption patterns more sustainable by using materials in an optimal and sustainable way throughout their whole lifecycle and using all available options for reuse and recycling.

¹ This case study focuses on used tyres only – which are collected by Recytyre – and not on used tyres collected as a component of end-of-life vehicles – which are collected by Febelauto.

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The case of EPR for used tyres illustrates how separate collection and environmentally sound management of this waste stream leads to more reuse and recycling. Used tyres can be handled in four ways: Reuse second hand tyres; retreading used tyres; material recycling (use of granulated compounds of used tyres); and incineration with energy recovery. Retreading is barely used for private cars. This is probably explained amongst others by a lack of consumer confidence in the safety of retreaded tyres and the limited price difference between new and retreaded tyres. In the transport sector, however, retreaded tyres are quite common. In line with the waste hierarchy mentioned in the EU Waste Framework Directive, incineration with energy recovery is the least favorable option. Use of granulated rubber is the recycling option that is mostly used. Granulated rubber from used tyres ends up as infill material for synthetic sport fields, or is used for producing rubber road infrastructure, rubber tiles, insulation material etc. In order to implement the duty of acceptance, a first environmental policy agreement with the producers of tyres entered into force on May 22, 2000, which was replaced by a new one in 2003. In 2010, a new agreement – covering not only tyres from replacement, but also tyres from original equipment – entered into force.

2. Legal aspects

The Flemish regulation concerning the sustainable management of materials and waste (hereafter referred to as Materials Decree or VLAREMA) sets out the **legal framework** for EPR and the Acceptance Duty in general and for EPR regarding used tyres in particular.

In general, the Acceptance Duty implies that the vendor is obliged to take back for free the returned product that he has once sold to the consumer. The intermediaries are obliged to take back for free the returned product from the vendor in proportion to the amount of products they have once delivered to the vendors. The producers are obliged to take back for free the waste that has been collected by the vendors and the intermediaries and they are obliged to make sure that collection and recovery of used tyres is taken care of. They have to do this for the amount of products that is in proportion to the amount of products they have once delivered to the vendors and intermediaries.

All products that are taken back by the vendor, intermediary and producer within the framework of the Acceptance Duty have to be registered on (at least) a monthly basis .

How the Acceptance Duty is organized, has to be laid down in one of the following documents:

- An environmental policy agreement for the sector as a whole (MBO)
- An individual waste prevention and waste management plan (in case a company does not want to participate in the implementation of the environment policy agreement for the sector as a whole).

The producer has to report about the implementation of the Acceptance Duty on a yearly basis. An external auditor validates the data mentioned in the report. The producers, intermediaries, vendors, and waste management organization hand over all necessary data to OVAM. OVAM then evaluates the implementation of the Acceptance Duty and whether targets are met.

When an **MBO** is specifying how the Acceptance Duty is organized – which is the case for used tyres –, then the following issues are key:

- The MBO is an agreement between the government and the representative organizations of the sector
- A waste management organization (non profit) is installed, which fulfills the tasks for the representative organizations. For used tyres this organization is Recytyre (www.recytyre.be). Recytyre is responsible for publishing a management plan, a financial plan and a communication plan, which have to be approved by OVAM.

The **strategic aim** of the EPR for used tyres is reducing the environmental impact of tyres in the waste stage as much as possible by Eco design and waste prevention and by separate collection and processing, prioritizing reuse, retreading and recycling wherever possible. Further, it also makes the sector responsible for collection and processing in a cost efficient way and reflects the polluter pays principle, as the cost is transferred to the polluter.

The **operational aim** is to develop an efficient collection and processing system that reaches the quantitative targets set at the start. This should lead to a situation in which:

- All used tyres that are offered for take-back are collected with a rate of maximum 100% of the amount of new tyres that have been placed on the market by the producers during the same year
- The collected tyres are first and foremost sorted in function of reuse and retread
- The total percentage of reuse, retread and recycling of the collected tyres should be at least 55%
- The remaining collected used tyres are incinerated with energy recovery
- Landfilling or any other form of removal of used tyres is not allowed.

Further, the following **legal aspects** are of importance for the EPR for used tyres:

- The EPR applies to all replaced tyres (since July 1, 1999) and to all tyres from original equipment (since May 1, 2009), with the exception of bicycle tyres
- Financing municipalities for their collection efforts is not obligatory as used tyres are not categorized as household waste. Therefore, municipalities are not obliged to organize a collection of used tyres. However, with most municipalities, Recytyre has come to an agreement to pick up the tyres if the municipality chooses to organize a collection. Recytyre does not charge municipalities for this service when municipalities collect only four tyres per family. Regarding the processing of the tyres that are collected within the framework of the Acceptance Duty, the following issues are key:

- Every year an overview of the total amount of used tyres and used tyres fit for reuse (kg, types) that have been received within the framework of the Acceptance Duty has to be delivered to OVAM by the vendor of tyres, the intermediary or the waste management organization.
- Every year the producer, or the waste management organization has to report to OVAM on the following issues:
 - The total amount of tyres (kg, types, numbers) that have been put on the market in Flanders
 - The total amount of used tyres and used tyres fit for reuse (kg, types) that have been collected within the framework of the Acceptance Duty
 - The places where and the way in which the collected used tyres have been treated
 - The total amount of used tyres (kg) that have been
 - Sorted for reuse
 - Retreaded
 - Used for material recovery
 - Incinerated with energy recovery.

When an MBO is set up or renewed, there is a dialogue between the involved entities. The way this has to be done is laid down in a legal framework. The MBO-draft is evaluated by the MINA Raad (the environmental advisory board for Flanders) and the Flemish Parliament. Furthermore, a public consultation on the draft MBO has to be organized in which everyone can make comments and remarks. OVAM has to give feedback on these evaluations and has to report back to the Flemish government. Finally, the MBO has to be approved by The Flemish Parliament.

Box1: Quantitative information legal aspects

- Objectives and targets;

Collection target: all used tyres that are offered

Recycling target: at least 55% for the sum of reuse, retread and material recovery, maximum 45% of energy recovery

- Fees per product or per ton;

When buying tyres, the consumer pays a fee that is used to pay for the collection and treatment system. The most recent fees (updated in 2009) per category can be found at: <http://www.recytyre.be/nl/consument/milieubijdrage/hoeveel> (in Dutch)

- Financial sanctions in case of non-compliance;

Free-riders (producers who do not comply with the acceptance duty for used tyres) receive an inspection visit from OVAM. During such a visit the producers are informed about the legal obligations and afterwards they also receive a written reminder that lists these obligations. In case the producer is still not in compliance, the inspectors make a written statement about the non-compliance. The division Environment Preservation, Environmental Damage and Crisis Management (Afdeling Milieuhandhaving, Milieuschade en Crisisbeheer or AMMC) then fixes a penalty.

3. Governance of the system

Governmental oversight

OVAM is the Public Waste Agency of Flanders and is responsible for enforcing waste policy. OVAM is an observer in the Board of Directors and the General Assembly of Recytyre, and gives advice on and approves the management plan, action plan, financial plan, and communication plan of Recytyre. OVAM also evaluates each decision with strategic impact. OVAM is responsible to report to the Flemish Government and the Flemish Parliament on the EPR scheme for used tyres. Furthermore, OVAM conducts inspections on a regular basis in order to ensure that the Acceptance Duty is implemented. In 2011, two inspectors controlled the transport sector. They register each control in a central database and ensure the follow-up. In case a company is not in compliance with the Acceptance Duty they receive a document that points out the legal obligations they have concerning used tyres and urges them to comply with the relevant legislation. An external company audits the financial situation. Finally, OVAM is responsible to report to the Flemish Government and the Flemish Parliament on the EPR scheme for used tyres.

A stakeholder analysis of the EPR environment

In 1998, the 6 most important tyre producers (Michelin, Continental, Good Year, Bridgestone, Pirelli, and Vredestein) together with tyre importers and some organizations represented by Federauto (the Belgian Federation for car traders, car repairers and linked sectors) founded Recytyre. **Recytyre** is a non-profit organization that functions as the waste management organization for used tyres. Its members finance Recytyre. Federauto hosts its secretariat. In 2012, Recytyre represented 663 active members, 51 partners (collectors), 5357 active collection points and 234 treatment facilities. Recytyre's Board of Directors

consists of 5 representatives for the tyre producers/importers; 2 representatives for the tyre dealers federation; 1 representative of the car retailers and agents; and 1 representative for the second hand car retailers federation, the car repair companies federation, and the fuel vendors federation. Recytyre has the following tasks:

- Identifying waste tyre flows
- collection, sorting and processing of the used tyres on the Belgian market
- Supporting retailers with collecting and processing used tyres
- Complying with the legal regulations concerning the acceptance duty for used tyres
- reporting to governments
- collection, sorting and processing of used tyres.

The **intermediaries and vendors** of tyres are responsible for charging the environment fee; receiving and storing the used tyres; contacting operators acknowledged by Recytyre to ask for transport; awareness raising.

Other stakeholders are Febem and VVSG. Febem is the representative organization of collectors of used tyres. Recytyre has an agreement with the collectors to collect and process the used tyres. The collectors have to report to Recytyre about this and Recytyre pays them for these activities. VVSG is the representative organization of the municipalities. As mentioned above, municipalities can sign an agreement with Recytyre for the free collection of used tyres. Febem and VVSG are consulted when something in the system of the acceptance duty for used tyres is changed (e.g. negotiating a new MBO, adaptation of the agreements, the legal objectives or the practical implementation of the Recytyre system).

Transparency of the EPR system

After an evaluation of the Flemish EPR policy in 2006-2007 greater transparency was achieved by harmonizing the legislation, increasing involvement and participation of the different stakeholders, strengthening the impact of the subnational government on the implementation, and clarification and simplification of the legal texts. The reporting requirements mentioned above make that OVAM has all necessary information to follow-up the used tyres market in Flanders. OVAM's role as an observer in the Board of Directors and the General Assembly and its task as advisor and evaluator of the management plan, action plan, financial plan, and communication plan also contribute to greater transparency of the EPR system. Recytyre gathers all necessary information and its yearly reports are publicly accessible online (<http://www.recytyre.be/nl/over-recytyre/facts-figures>).

4. Environmental effectiveness/performance

The EPR for used tyres is successful. The 2011 evaluation report states that on average 88% of all waste tyres is collected, meaning that the target is met. When considering only the replacement market, a collection rate of 99% was achieved. This indicates that tyres of original equipment are not that widely

collected. Recytyre only covers the market of tyres of original equipment of vehicles other than category M1 and N1. These vehicles are typically exported and are not processed in Belgium as end-of-life vehicles. This explains why Recytyre does not collect many tyres of original equipment.

There is a high demand for Belgian used tyres due to their quality, availability and quantity. This is reflected in the increasing recycling rate and the increasing amount of used tyres that is reused and retreaded. The legal targets for recycling are easily met.

The EPR for used tyres has made it possible to have a complete overview of the flow of waste tyres and has enabled more recycling and reuse and retread. Figure 1 shows the Belgian percentage of material recycling and energy recovery of used tyres for the period 2006-2011. One can notice that when the Recytyre system was introduced (in 2006) used tyres were mostly sent to energy recovery, whereas in 2011, material recycling was the most used recycling option. Further improvement is still possible when it comes to setting the right fee for truck tyres. However, due to the fees applicable in surrounding countries, Recytyre is reserved to increase these fees as this might stimulate the purchase of tyres in countries where the fees are much lower or where there are no fees for truck tyres. Also, so far, there is no market for retreaded tyres for passenger cars.

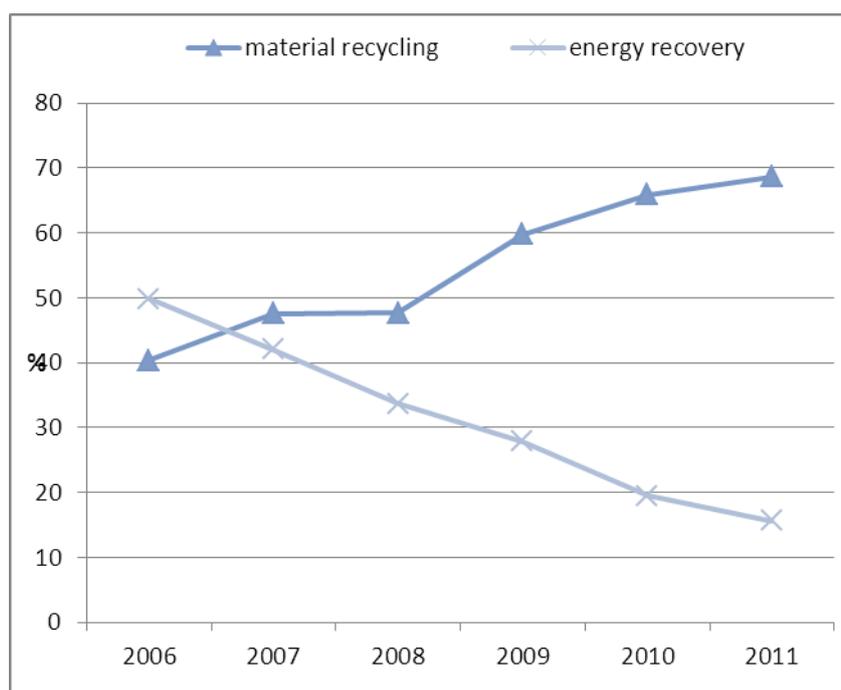


Figure 1 Belgian percentage of material recycling and energy recovery of used tyres 2006-2011

The existence of a tax on incineration and the legislation enabling the use of rubber granulate as infill material in synthetic sportfields influences the treatment of tyres. Reuse and recycling are strengthened as most favorable options. Landfilling of used tyres is not allowed.

Since November 1st, 2012, the EU regulation on labeling of tyres is applicable. The label provides

information on fuel efficiency, wet grip and external rolling noise through clear pictograms. The label will allow consumers to make informed choices when buying tyres, ranked on a scale from A (best) to G (bad). This label has little influence on EPR, as it does not stimulate reuse and recycling and thus the chance was missed to support sustainable materials management.

Box 2: Quantitative information environmental effectiveness/performance (information for 2012)

- Amount of waste collected; in Flanders: 51 375 ton
- Of amount collected:
 - Amount of material recovery (= reuse, retread and material recycling); in Belgium: 84,96%
 - Amount of energy recovery; in Belgium: 15,04%
 - Amount disposed of in landfills; 0
- Kilograms/capita collected; in Flanders: 8 (total population in Flanders on January 1, 2013 was 6 376 425)

5. Coverage and quality of waste collection and treatment

Recytyre ensures the implementation of the Acceptance Duty. It ensures that collection and treatment, reporting, prevention, and awareness raising is taking place. The used tyres are stored at collection points (car dealers, repair shops, tyre dealers, and municipalities). The collection points contact a collector, who transports and sorts the tyres. Then, the tyres are reused, retreaded or treated by one of the private players in the sector. The collector has to report about this in a web application. Those that conduct the treatment also have to report in this web application. In this way, the processors have to confirm that they have indeed received the amount of tyres that the collector has registered. Recytyre conducts the audits of the collectors and will in the future also audit the processors. This system covers the whole territory of the Flemish region. The Brussels Capital Region and the Walloon region have similar systems in place that cover their territory and Recytyre is also responsible for implementation in these regions.

6. Cost effectiveness and benefits

In this EPR, the consumers pay an environmental fee that is used for the collection and treatment of used tyres. The fee depends on the type of tyre. The fees range from € 1,32 including VAT of 21% (e.g. motorcycle tyres) to €794,37 including VAT of 21% (e.g. tyres from some vehicles for public works and construction services). The fee is mentioned separately on the consumer's receipt. The fee represents the cost for collection and treatment and is transferred by the producers to Recytyre.

In 2012, the balance sheet of Recytyre amounts to € 20.401.002 (see table). One notices a remarkable increase in the last years which was needed as the equity had become negative due to some considerable losses in the years 2006, 2008 and 2009. The turnabout has been achieved by a number of measures including an increase in the environmental fee and some cost savings. By 2012 the financial situation has improved significantly. The liabilities are less than 20% of the total liabilities and equity. The assets consist

largely of cash and cash equivalents. Recytyre now has a solid financial buffer that can ensure the continuation of its activities in the coming years.

The profit and loss account of 2012 reflects a profit of € 3.976.971. This is in line with the results of the previous years. Both the revenues and the expenses decrease by about 15% compared to 2011. The decrease in revenues can be largely attributed to the decrease in tyres sold on the replacement market due to the economic crisis. As a consequence, the costs for collection and treatment are also declining due to the decline in number of collected tyres on the replacement market. Due to the increase in personnel, the company costs are on the rise. This is largely because Recytyre is investing in a tighter monitoring of the operators' activities.

In summary, there is a perpetuation of the change in financial situation that started in 2010. An operational and financial restructuring is now ongoing in Recytyre. Only when this restructuring has been fully implemented, the financial situation will be clear. Therefore, the numbers given here, are not necessarily the best reference for the financial results for the coming years.

		2010	2011	2012
BALANCE SHEET	Fixed assets	357.638	464.463	466.989
	Accounts receivable	5.476.725	4.695.648	4.870.402
	Cash and cash equivalents	5.492.845	11.622.078	15.063.611
	Total assets	11.327.208	16.782.190	20.401.002
	Equity	284.055	4.913.089	8.890.060
	Provisions	0	6.888.000	7.499.000
	Liabilities	11.043.153	4.981.101	4.011.941
	Total liabilities and equity	11.237.208	16.782.190	20.401.002
PROFIT AND LOSS ACCOUNT	Revenues	24.247.611	27.058.201	22.627.668
	Operational costs	19.823.214	14.837.540	17.098.614
	Provisions	0	6.888.000	611.000
	Other company costs	514.234	734.292	1.060.671
	Total expenses	20.337.448	22.459.832	18.770.285
	Financial result	-60.719	30.665	119.588
	Profit	3.849.444	4.629.033	3.976.971

Table 1 Financial situation of Recytyre 2010-2012

Box 4: Quantitative information cost effectiveness and benefits

- Cost per kilogram collected; €0,24
- Cost per kilogram recycled; €0,28
- Cost per capita; €1,70
- Cost recovery rate from fees : the environmental fee covers the collection and treatment of the used tyres (100%)
- Overhead cost per ton collected/recycled; €0,013

7. Competition and market barriers

With the exception of the EPR system for used tyres of end-of-life vehicles (where Febelauto is the waste management organization), there is only one EPR system for used tyres in Flanders and Recytyre is the single coordinating waste management organization for this system. In this sense there is no competition. Regarding the collection and treatment of used tyres, the free market can play. Collection points are free to choose the operator of their choice. Every operator can participate in the system and will be financed by Recytyre if he works according to the Recytyre guidelines. Used tyres collected in Flanders are often recycled abroad; as Flanders has little recycling capacity for this waste stream itself. So far, this is not a problem, as all collected used tyres are treated. Furthermore, there is a high demand for used tyres from Belgium due to the availability and quality of the used tyres, in other words the collection and sorting system that is in place ensures that the tyres end up at the right treatment facility.

8. Conclusions

The EPR for used tyres has significantly contributed to decreasing the amount of used tyres that are dumped to almost zero. As the consumer already pays an environmental fee when buying the tyres and does not have to pay an extra fee to have them collected, almost no used tyres are now dumped in Flanders. Nearly every used tyre that arises in Flanders gets collected by Recytyre. For the replacement market collection rates reaching 100% are common. The collection of original equipment tyres on the other hand is limited as only a limited part of those vehicles (trucks, tractors, construction machines...) become end-of-life vehicles in Flanders. Rather they are probably exported as second hand vehicles. Furthermore, a shift has taken place from energy recovery to material recycling. As there is a significant, continuous, and well-managed flow of used tyres, there is a market for recycling tyres and tyre materials. Due to the required reporting and the creation of a waste management organization (Recytyre), it is possible for the government to have a clear idea about the amount of used tyres that is collected and treated. In general, the EPR system for used tyres is judged to function well. The revision of the MBO that takes place every 5 years allows for further improvements in line with technological advances.