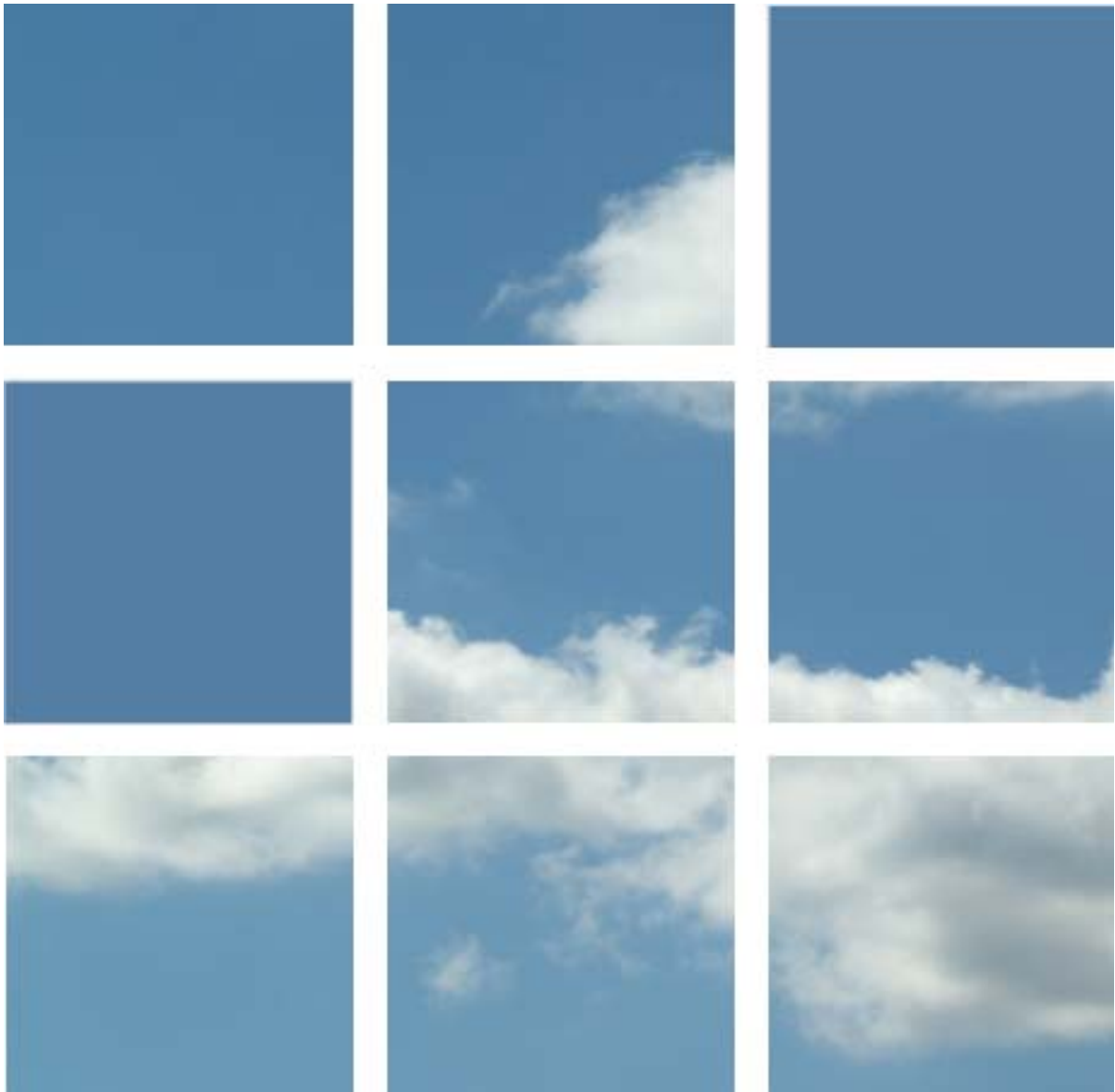




Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

All Island Used Tyre Survey

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Acronyms used in this Report

BTMA	British Tyre Manufacturers Association
COD	Certificate of Destruction.
CSO	Central Statistics Office
EA	Environment Agency
ELV	End-of-Life Vehicles
EPA	Environmental Protection Agency
DOE	Department of the Environment Northern Ireland
DECLG	Department of the Environment Community and Local Government
DVA	Driver and Vehicle Agency
DVLNI	Driver and Vehicle Licensing
NI	Northern Ireland
NIEA	Northern Ireland Environment Agency
NIFRS	Northern Ireland Fire and Rescue Service
NWCPO	National Waste Collection Permit Office
PPC	Pollution Prevention and Control
ROI	Republic of Ireland
RSS	Responsible Recycler Scheme
TRA	Tyre Recovery Association
TRACS	Tyre Recovery Activity Compliance Scheme Ltd.
TWM	Tyre Waste Management Ltd
WRAP	Waste and Resources Action Programme

Executive Summary

Introduction

This survey has been commissioned by the Department of Environment Northern Ireland (DOE) and the Department of the Environment, Community and Local Government (DECLG) in the Republic of Ireland and aims to provide improved information on the quantity of used tyres disposed of on the island of Ireland, and in particular to identify how these used tyres are being managed by contractors. In addition, the survey aims to provide regulators in both Northern Ireland and the Republic of Ireland with information which will help to inform the development of policy which will support and provide a level playing field for businesses and drive environmental improvements.

Background to the Project

A number of previous studies have been carried out in both Northern Ireland and the United Kingdom relating to used tyres. The results of these surveys are useful to provide background and context to the current All Island Used Tyre Survey and to show progress in the industry in Northern Ireland since the previous studies were undertaken.

In the Republic of Ireland, the Waste Management (Tyres and Waste Tyres) Regulations 2007, in operation since January 2008, were implemented to improve information gathering and the tracking of used tyre flows in Ireland. These Regulations therefore aim to identify a clear audit trail for tyre collection and recycling.

Two approved compliance schemes have been established in the Republic of Ireland, namely the Tyre Recovery Activity Compliance Scheme (TRACS) and Tyre Waste Management (TWM), and through membership of one of these bodies, an exemption from the reporting requirements of the Regulations can be obtained.

Methodology

During this Study, survey questionnaires were issued to the key sectors of the tyre industry in Northern Ireland and the Republic of Ireland:

- Tyre manufacturers, distributors and retailers of tyres;
- Tyre Collectors;
- Authorised Treatment Facilities (ATFs); and
- Tyre Recovery and Recycling Operators.

Consultation was also carried out with key stakeholders in the tyre industry in Northern Ireland and the Republic of Ireland to gather data for this Study.

This included the analysis of Article 44 responses for retailers in Northern Ireland provided by the Northern Ireland Environment Agency (NIEA). It should be noted that, prior to the commencement of the survey, NIEA had undertaken an exercise to issue Article 44 Notices, under the provisions of the Waste and Contaminated Land (Northern Ireland) Order 1997, to tyre retailers and distributors in Northern Ireland requesting that these operators provide NIEA with Waste Transfer Notes for movements of tyres within a specified period. Following review of this information, where the data provided on these was appropriate, it was included within the data returns for the survey.

Site visits were also carried out to key businesses in the tyre industry in Northern Ireland to gain valuable information through discussions and completion of the questionnaire. In the Republic of Ireland, site visits were carried out to each self compliance scheme operator – TRACS and TWM.

The response rates achieved for Northern Ireland and the Republic of Ireland are set out in Table ES.1 and ES.2 below.

Table ES.1 NI Response Rate

Group	Total Survey Population	No. Not Applicable / Returned etc	Total Survey Population	Responses Received	Response Rate
Retailers	240	24	216	50	23 %
Collectors	23	0	23	3	13 %
Recyclers	7	0	7	3	43 %
ATFs	67	2	65	7	11 %
Total	335	26	309	63	20%

As noted above 63 companies provided a response to the survey questionnaire with the necessary data to satisfy the requirements of the survey. This attributes to a percentage response rate of 20%. The recyclers sector, with the smallest population, provided the highest response rate (43%) while the lowest response to the survey questionnaire (11%) was achieved by businesses operating as Authorised Treatment Facilities (ATFs) for End of Life Vehicles.

In addition to the responses received to the survey questionnaires detailed above, Article 44 responses from retailers were also analysed to achieve the following responses:

- Retailers 64
- Collectors 13
- Recyclers 2
- ATFs 0

It should be noted that, in order to avoid double counting, in instances where both survey and Article 44 responses were received from the same company, the Article 44 response was not included within the overall responses. The survey responses were included over the Article 44 responses as they contained more comprehensive information to be included in the overall survey results.

Table ES.2 ROI Response Rate

Group	Total Survey Population	Responses Received	Response Rate
Retailers	1,620	35	2%
Recyclers	48	5	10%
Collectors	162	11	7%
Total	1,830	51	3%

Results – Used Tyre Arisings Data

Used Tyre Arisings – Northern Ireland

At the outset of this project it was anticipated that data from survey returns would be used to determine the overall used tyre arisings in Northern Ireland. However, due to a number of issues with the dataset, set out below, an estimation and analysis of Licensed Vehicle Statistics in Northern Ireland has been used as an alternative source of data on used tyre arisings. Issues encountered with the survey returns for tyre retailers which were intended to be used to determine used tyre arisings, include:

- The low response rate for the retailers element of the Study;
- In order to scale up the results to be representative of the total it was intended to obtain employee numbers for each of the businesses surveyed from the Inter Departmental Business Register (IDBR) by determining appropriate scale up factors. However, it was determined that there were not sufficient matches between the survey dataset and the IDBR dataset;
- Of those tyre retailers that were not found on the IDBR Database, few were felt to be have equivalent businesses with known employee numbers, to infer comparisons for scaling up purposes;

The survey database could therefore not be used to derive results for the tyre retailers and the estimation and analysis of Licensed Vehicle Statistics in Northern Ireland was used as an alternative data source.

Calculations have been undertaken on the Licensed Vehicle Statistics to provide an estimate of used tyre arisings in Northern Ireland in 2010/11, as set out in Table ES.3.

Table ES.3 Used Tyre Arisings (Units and Tonnages) in Northern Ireland in 2010/11

Taxation Group	Tyres (Units)	Tyres (Tonnage)
Private Light Goods	1,567,735	12,385
Motorcycles, Scooters & Mopeds	8,919	45
General (HGV) Goods	67,721	2,921
Bus	7,534	384
Agricultural / Tractors	14,712	1,868
Other	2,971	23
Crown	10,925	86
Exempt	111,876	884
All Vehicles	1,792,392	18,597

These calculations estimate that there is a total of 18,597 tonnes of used tyre arisings in 2010/11 which equates to approximately 1.8 million units of tyres.

Exports

Consultation with the Transfrontier Shipment Unit confirmed that 7,761 tonnes of used tyres (Basel Code B3140) were exported from Northern Ireland under the Transfrontier Shipment of Waste Regulations 2007 as amended in 2011.

Used Tyre Arisings – Republic of Ireland

Tyre arisings for the Republic of Ireland are calculated by combining new tyres imported directly and tyres imported on vehicles. Table ES.4 provides a summary of used tyre arisings in the Republic of Ireland in 2010.

Table ES.4 Used Tyre Arisings in ROI, 2010

Category	Used Tyre Arisings (Units)	Used Tyre Arisings (Tonnes)
1	2,376,724	25,183
2	86,283	9,691
3	19,910	111
4	42,350	2,048
5	84,815	417
6	26,371	506
7	326,040	716
Total	2,962,493	38,673

Results – Management Data

Collectors Data – Northern Ireland

Table ES.5 below summarises the data provided by the respondents in this element of the survey. The 15 responses received have been factored up to the total population of waste collectors in Northern Ireland to achieve results for this element of the survey.

Table ES.5 Quantity (Units and Tonnage) of Used Tyres Collected in NI for 2010/11 (Information from Survey Returns and Article 44 Data)

Tyre Type	Tyres (Units)	Tyres (Tonnage)
Car	893,084	7,055
Light Truck	40,064	942
Heavy Truck	6,734	344
Agricultural	395	50
Unknown	2,623	21
Total	942,900	8,412

The survey also gathered data from Authorised Treatment Facilities (ATFs) used for the disposal of End of Life Vehicles, including tyres. However, a response rate of only 10% was obtained. As the company profiles of the businesses within this sector is unknown, it was not possible to factor up the raw data to accurately reflect all the ATFs in Northern Ireland.

Collectors Data – Republic of Ireland

Information was received from TRACS and TWM on used tyres collected and how these are managed. This is based on data collected from 41 waste collectors registered with the compliance schemes. Table ES.6 sets out the data received from both compliance schemes for used tyres collected by their members of which 29,343 tonnes were estimated to be collected in 2011.

Table ES.6 Used tyres collected in 2011 by waste collectors registered with the compliance schemes

Description	TRACS		TWM
	Tyres Collected (Units)	Tyres Collected (Tonnes)	Tyres Collected (Tonnes)
Car / Van	2,299,778	23,582	1,858
Truck	37,669	1,622	
Motorcycles	339	2	
Agri / Industry	843	42	
Construction	0	0	
NES (Rethreads and Used Pneumatic Tyres)	45,065	2,237	
Total	2,383,694	27,485	1,858
Total Tyres Collected in ROI			29,343

Used Tyre Recycling – Northern Ireland

Table ES.7 below summarises the data provided by the respondents in this element of the survey. The 5 responses received have been factored up to the total population of used tyre recycling operators in Northern Ireland to achieve results for this element of the survey.

Table ES.7 Quantity (Units and Tonnage) of Used Tyres Recycled in NI for 2010/11 (information from Survey Returns and Article 44 Data)

Tyre Type	Tyres (Units)	Tyres (Tonnage)
Car	1,546,110	12,214
Light Truck	46,260	1,087
Heavy Truck	893	46
Agricultural	15	19
Unknown	560	4
Total	1,593,838	13,370

Used Tyre Recycling - ROI

Table ES.8 below sets out data on the quantity and related fate of used tyres collected by the waste collectors members of TRACS and TWM. The main waste management option is shredding and crumbing which account for 62% of the tyres collected. Export of used tyres as a whole, baled or shredded account for 58% of the tyres collected.

Table ES.8 Used tyres collected in 2011 by waste collectors registered with the compliance schemes¹

Waste Management Options	TRACS	TWM	Total	Export
Agricultural Use	1,770	188	1,958	0
Other Reuse	327	0	327	0
Shredded & Crumbed	16,584	1,670	18,254	10,139
Exported as a fuel	1,374	0	1,374	1,374
Baled and exported	4,530	0	4,530	4,530
Export as a whole	976	0	976	976
Transfer to another collector	1,921	0	1,921	0
Total	27,482	1,858	29,340	17,019

¹ TRACS Annual Report 2011 and personal communication with TWM.

Illegally Disposed

As part of this survey Local Authorities were contacted and information was requested on the illegal disposal of used tyres arising in each Local Authority area in both NI and ROI.

A quantitative response was only received from 11 out of 26 Local Authorities in Northern Ireland, and by scaling these using the population of each Local Authority to account for all the Local Authorities the illegal disposal estimate for Northern Ireland equates to 120 tonnes (or 15,045 units) of used tyres. This is approximately 0.65% of the estimated used tyre arisings in Northern Ireland.

A quantitative response was only received from 10 out of 34 Local Authorities in the Republic of Ireland, and by scaling these using the population of each Local Authority to account for all the Local Authorities the illegal disposal estimate for the Republic of Ireland equates to 112 tonnes (or 14,152 units) of used tyres. This is approximately 0.29% of the estimated used tyre arisings in the Republic of Ireland.

Farm and Other Uses

Based on the results of the WRAP Study on the UK Used Tyre Market in 2004 it has been assumed that 0.6% of used tyres are reused for uses such as silage clamps, boat fenders and sports safety barriers. This equates to reuse for silage clamps, boat fenders and sports safety barriers of 112 tonnes in Northern Ireland. This value would appear very low in comparison to the ROI value of 1,958 tonnes. Therefore for the purposes of this estimation a pro rata of overall tyre arisings has been used to estimate Farm Use. This equates to 942 tonnes.

Information provided by the compliance schemes, TRACS and TWM, estimated that a total of 1,958 tonnes of used tyres are reused for agricultural purposes, such as for silage clamps. This includes a total of 1,770 tonnes from TRACS members and 188 tonnes from TWM members.

Mass Balance

A mass balance approach was used to make an assessment of the quantity of used tyres generated in Northern Ireland and the Republic of Ireland, and how these used tyres are managed. This approach has been used to identify the quantity of used tyres managed outside the legal system.

Survey Feedback

Each survey respondent was asked to complete a number of qualitative questions as part of the questionnaire providing their comments on the tyre industry. Key themes of the responses included:

- **Permitting** – respondents raised issues associated with the regulation, monitoring and enforcement of illegal operations within the tyre industry as well as an effective prosecution policy for offending operators.
- **Producer Responsibility Initiative** – No companies within NI provided feedback associated with producer responsibility. TRACS commented that there should be a consistent approach between any PRI scheme implemented in NI with the scheme in operation in ROI.
- **Enforcement** – Respondents commented that there was a need for improved and targeted enforcement. In addition, respondents commented that there was a need for a more effective prosecution policy.
- **Management of Used Tyres** – Respondents commented that DOE and EPA should provide more advice and information on the management of used tyres.
- **Reprocessing** – Comments were provided in relation to the limited reprocessing facilities available in NI and ROI and that many tyres are required to be shipped to the UK and further afield for treatment.
- **Increased Public / Customer Awareness** – Respondents suggested that there should be a more proactive customer knowledge campaign so that customers know the importance of proper used tyre disposal and the costs associated with this.

Recommendations

A number of opportunities for improvement in the tyre industry in Northern Ireland and the Republic of Ireland have been identified in relation to data management and reporting and the management of used tyres. It should be noted that further recommendations for ROI will be developed as part of the review of Producer Responsibility Initiatives. Recommendations include:

Northern Ireland

1. **Data Reporting – Producers and Suppliers:** In order to have robustness of used tyre arising in Northern Ireland it is recommended that consideration be given to placing additional obligations on producers and suppliers which could involve the use of either a voluntary best practice scheme or a mandatory compliance scheme.
2. **Data Reporting – Collectors, Authorised Treatment Facilities and Licensed Recycling Facilities:** It is currently inappropriate to attempt to utilise the current waste transfer note system to produce data on used tyres however, if NIEA moved to an electronic system, such as the e-DoC system currently be developed by government, this system may be able to be utilised for this purpose.
Additional and more detailed data should be requested from licensed recycling facilities as part of quarterly returns to enable further analysis of these results.

3. **Data Reporting – Public Bodies Central Recording System:** In order to obtain an overall picture of illegal disposal of tyres in Northern Ireland it is recommended that consideration be given to a central recording system to be administered by the DOE or NIEA which would require all public bodies to report the used tyres which are discovered either through illegal dumping, fly tipping or activities. This system would require the introduction of primary legislation which may take some time to implement in Northern Ireland.

Republic of Ireland

4. **Data Regarding Tyres on the Market:** Information be collated from the local authorities in relation to self-compliers, and a central body should collate information required as per Waste Management (Tyres and Waste Tyres) Regulations 2007 (SI 664 / 2007). It may be possible that a centralised electronic system could be utilised for these purposes which may be considered further by DECLG if it is considered to be economically and technically viable.
5. **Data Regarding Used Tyres:** It is therefore recommended that the compliance schemes are reviewed to assess if improved collaboration could be implemented between the scheme operators and the local authorities and to assess if adequate arrangements are in place to incentivise co-operation from waste operators for the purposes of compiling used tyre data and to compel operators to provide data returns..

1 Introduction

1.1 Overview

This survey has been commissioned by the Department of Environment Northern Ireland (DOE) and the Department of the Environment, Community and Local Government (DoECLG) in the Republic of Ireland and aims to provide improved information on the quantity of used tyres disposed of on the island of Ireland, and in particular to identify how these used tyres are being managed by contractors. In addition, the survey aims to provide regulators in both Northern Ireland and the Republic of Ireland with information which will help to inform the development of policy which will support and provide a level playing field for businesses and drive environmental improvements.

1.2 Significance of the Used Tyre Survey

The timing of this survey is particularly significant due to media and political interest in the subject of tyres, and in particular the illegal disposal of tyres.

In addition to this, political interest in the subject has included the Northern Ireland Assembly's Committee for the Environment which has initiated an inquiry into Used Tyre Disposal in 2011 and in the Republic of Ireland the Department of the Environment, Community and Local Government is currently conducting an in-depth study on Producer Responsibilities, one focus of this being tyres.

In Northern Ireland, the aim of the inquiry into Used Tyre Disposal was to examine the current approach to the management of used tyres in Northern Ireland. The Committee examined the current audit trail for managing tyres from purchase through to disposal, compared with approaches used elsewhere (GB/ROI) and made recommendations to enhance the transparency and robustness of the processes in Northern Ireland. These recommendations fall under the following areas:

- Legal framework for the collection, storage and disposal of used tyres and how this is monitored and enforced by the Northern Ireland Environment Agency;
- Current audit trail for managing tyres from purchase through to disposal and key responsibilities at critical stages;
- Comparison of the Northern Ireland approach to managing used tyres with other approaches;
- Number of used tyres arising annually in Northern Ireland;
- Extent of historical stockpiles of used tyres in Northern Ireland and consideration of how these could be incorporated into the established process for managing used tyres; and

- Potential for the development of an environmentally sound, economically viable and self sustaining end-use market in Northern Ireland (including the consideration of alternative uses for used tyres).

In light of this media and political interest the commissioning of this survey was a timely one.

The findings are therefore of interest in Northern Ireland to:

- Northern Ireland Assembly;
- Department of Environment Northern Ireland (DOE);
- Northern Ireland Environment Agency (NIEA); and
- Key stakeholders in the waste management retreading, recycling and recovery industries.

In the Republic of Ireland the project findings are important to:

- Department of the Environment, Community and Local Government (DoECLG);
- Environmental Protection Agency (EPA) & Local Authorities;
- Tyre Recovery Activity Compliance Scheme Ltd.(TRACS);
- Tyre Waste Management Ltd.(TWM); and
- Key stakeholders in the waste management retreading, recycling and recovery industries.

1.3 Aims and Objectives

The key aims and objectives of this study are to:

- To carry out a comprehensive survey of the quantity of used tyres generated in Northern Ireland and the Republic of Ireland that will assist in the regulation and enforcement of this waste stream;
- To provide estimates of the amounts of used heavy duty and car tyres generated, going for reuse, retread, recovery, recycling, and disposed to landfill;
- To provide data on the tonnage of used tyres exported out of and imported into Northern Ireland and the Republic of Ireland;
- To provide data on used tyres to facilitate National and European waste reporting requirements;
- To provide data on the quantity and unauthorised flow of used tyres into and out of Northern Ireland and the Republic of Ireland and the final disposal route for tyres managed illegally;
- To identify all end-markets to which used tyres are currently being sent to in Northern Ireland and the Republic of Ireland;
- To identify future trends in the industry over the next 5 to 10 years; and
- To put the scale of the problem in Northern Ireland in context and draw comparisons between Northern Ireland and other jurisdictions.

2 Background to the Project

2.1 Previous Studies

A number of previous studies have been carried out in both Northern Ireland and the United Kingdom relating to used tyres. The results of these surveys are useful to provide background and context to the current All Island Used Tyre Survey and to show progress in the industry in Northern Ireland since the previous studies were undertaken. A brief description of the key findings of both the Northern Ireland and UK Studies are therefore provided in this Section of the report.

However, since the last Tyre Survey was carried out in Northern Ireland in 2000, there have been significant changes and progress achieved in the waste management industry in general and also specifically within the tyre industry. This has included the introduction of new legislation relating to the Duty of Care of wastes and the requirement of waste collectors to register and comply with the Registration of Carriers legislation. In addition, the Landfill Regulations, 2006 implemented a ban on the landfill of tyres. More detail on these pieces of legislation are set out in Section 3 of this report.

In addition, the implementation of specifications for end of waste criteria such as PAS 107 (Specification for the Manufacture and Storage of Size reduced Tyre Materials) and the PAS 108 (Specification for Production of Tyre Bales for Use in Construction) have been developed to provide specifications that can be adopted by suppliers to ensure that the products being produced from used tyres, rather than being disposed of, are of a consistent and verifiable quality.

Northern Ireland Used Tyre Survey, 2000

A previous used tyre survey was undertaken in Northern Ireland in 2002 to provide data on used tyres in the year 2000. The aim of the survey was to determine the number of used tyre arisings and the destination routes these followed to reprocessing and disposal. In addition, the study also included the use of a model to predict future tyre arisings.

The objectives of the survey were to:

- Provide accurate estimates of the number of used tyres arising annually and the total tonnage this represents;
- Identify the locations of tyre retailers, distributors, collection companies and reprocessors in Northern Ireland and the potential to increase the reprocessing services available;

- Determine the annual number of illegally dumped tyres;
- Identify the size and locations of any used tyres stockpiles;
- Determine the numbers of tyres reprocessed in Northern Ireland, sent to landfill and exported; and
- Provide a data reporting methodology that can be used to support National and European waste reporting requirements.

The key findings of the Study were as follows:

- 16,100 tonnes was the best estimate for used tyres arising in Northern Ireland in 2000, which is equivalent to 1,738,117 units. A predictive model generated this figure;
- In 2000 the main destinations for used tyres identified by the survey were 32% for retread manufacture and 16% to farmers. Smaller quantities were identified as being reused as part worns, stockpiled, landfilled, burnt on bonfires and exported;
- In many cases there was no information on where the used tyre casings were being taken to or even who was taking them, hence 30% were being removed to an unknown destination;
- The commercial market for used tyres was limited in Northern Ireland in 2000. The only reprocessing market available was the production of retreaded truck and car tyres. There were reuse markets in existence. The main application was the use by farmers for silage. However they were also utilised for landfill engineering and as crash barriers on racecourses. The other main destinations for used tyres in 2000 were for use as fuel in bonfires and landfilling;
- The market cost for recycling tyres in Northern Ireland was seasonal. In this year, during April – June, there is little business because tyres are stockpiled in preparation for twelfth of July celebrations. During this period recyclers dropped their prices dramatically, and recycling becomes commercially not viable; and
- In 2000, an estimated 309,785 used tyres were either reused (in NI or abroad), retreaded in England or reused on farms. As a proportion of the total number of used tyres arising identified by the survey this equates to a 47% recovery if the total used tyre units arising. As a proportion of the total number of used tyres arising identified by the predictive model this equates to a 20% recovery of the total used tyre units arising.

The Study also made a number of recommendations for data collection, these included:

- Used tyre arisings should be compiled on the basis of replacement tyre sales and tyres from ELVs until such a time that the used tyre collection infrastructure improves in NI;
- Data on total used tyres arising from the replacement markets should be based on sales and market share information from the largest tyre retailers;
- Data on the total used tyres arisings from ELVs should be estimated on the basis of information on the number of ELVs arising obtained for compliance with the ELV Directive and average number of tyres per vehicle; and

- Data on the number and capacities of processing and disposal facilities to be collected directly from the relevant facilities.

Tyres and Resource Management: A Mass Balance Approach (UK Used Tyre Report), 1998

This report was prepared in 2000/2001 with the base year of 1998, sets out the current situation regarding the manufacture, use, reprocessing and disposal of tyres within the UK. It identifies current and future challenges and recommends options to achieve more sustainable changes.

The report identified that currently over 400,000 tonnes per annum of post-consumer tyres are generated in the UK.

In 1998 it is estimated that 11% of post-consumer tyres were exported, 62% were reused, recycled or sent for energy recovery, and 23% were sent to landfill.

In order to quantify the situation in the Tyre Industry mass balance models were developed to generate post-consumer tyre arisings by region, and resource use and environmental impacts of tyre manufacture, tyre use and tyre reprocessing. For this report, post-consumer tyre arisings were generated for the base year of 1998 and predicted for future years. These were compared with estimated future reprocessing capacities. The other mass balance models give data on the resource use from tyre manufacture, use and reprocessing. Some of the main findings of the Report, are set out below:

- In 1998 only 18% of the tyres manufactured in the UK were used within the country, with the rest being exported. To satisfy the remaining demand in the UK, 432 k tonnes of tyres were imported from other countries;
- In 1998, 41% of post consumer tyre arisings were not reprocessed but disposed of in landfill, stockpiles or illegally dumped. It was identified that the high cost of responsible disposal of post consumer tyres is contributing towards the growth of unregulated tyre disposal;
- In 1998, it was identified that the reprocessing capacity for post-consumer tyres is not spread evenly across the UK. Certain regions have an over capacity, while others are in deficit;
- Small reprocessing companies find it difficult to become established due to market instability and high investment costs;
- Energy recovery is growing as a reprocessing option due to the ability to deal with large quantities of tyres. Long approval procedures are a risk to this continuing in the long term and

- Detailed information on the resource use and waste outputs in the tyre industry will allow actions to be focused in areas where the greatest sustainable development can be achieved.

2.2 Self Compliance - Republic of Ireland

In the Republic of Ireland, the Waste Management (Tyres and Waste Tyres) Regulations 2007, in operation since January 2008, were implemented to improve information gathering and the tracking of used tyre flows in Ireland. These Regulations therefore aim to identify a clear audit trail for tyre collection and recycling. The Regulations impose obligations on persons who supply tyres to the Irish market, whether as manufacturers, wholesalers, suppliers, traders or retailers and on the collectors of used tyres. However, it should be noted that these Regulations are not full producer responsibility regulations like those for End of Life Vehicles (ELVs), Waste Electrical and Electronic Equipment (WEEE) and Batteries.

The Regulations support the environmentally sound management of used tyres by providing a regulatory framework for comparing quantities of used tyres arising with the quantities placed on the market and in tracking the movement of used tyres from the time they are discarded until they are either reused or processed for recycling and/or recovery. The Regulations therefore require that the waste holder only give their tyres to a permitted collector, and that all suppliers and collectors register with an approved compliance scheme or with their relevant Local Authority.

Two approved compliance schemes have been established in the Republic of Ireland, namely the Tyre Recovery Activity Compliance Scheme (TRACS) and Tyre Waste Management (TWM), and through membership of one of these bodies exemption from the reporting requirements of the Regulations can be obtained. TRACS is Ireland's largest national compliance scheme operating to provide certification to its registered producers demonstrating legal compliance. It is a certification and audit scheme and the objective is to ensure the proper channelling of all used tyres by tracking tyres and used tyres through the supply chain. The method used is a reconciliation system, monitoring the movement of tyres through the supply chain, from the point of import right through to the time of waste management. Data is requested from the supply chain to reconcile figures against those supplying retailers and removing waste. Tyre Waste Management Ltd (TWM) was approved by the Minister of the Environment to act as a second compliance scheme in accordance with the Regulations in December 2009. TWM operate a scheme based on weight data of tyres only being provided to demonstrate compliance. Waste holders that do not register with one of these schemes must do so with their relevant Local Authority and meet the full reporting requirements of the Regulations.

Compliance schemes, such as TRACS and TWM, do not exist in Northern Ireland and producers of used tyres are therefore regulated by the Northern Ireland Environment Agency (NIEA) under waste management legislation.

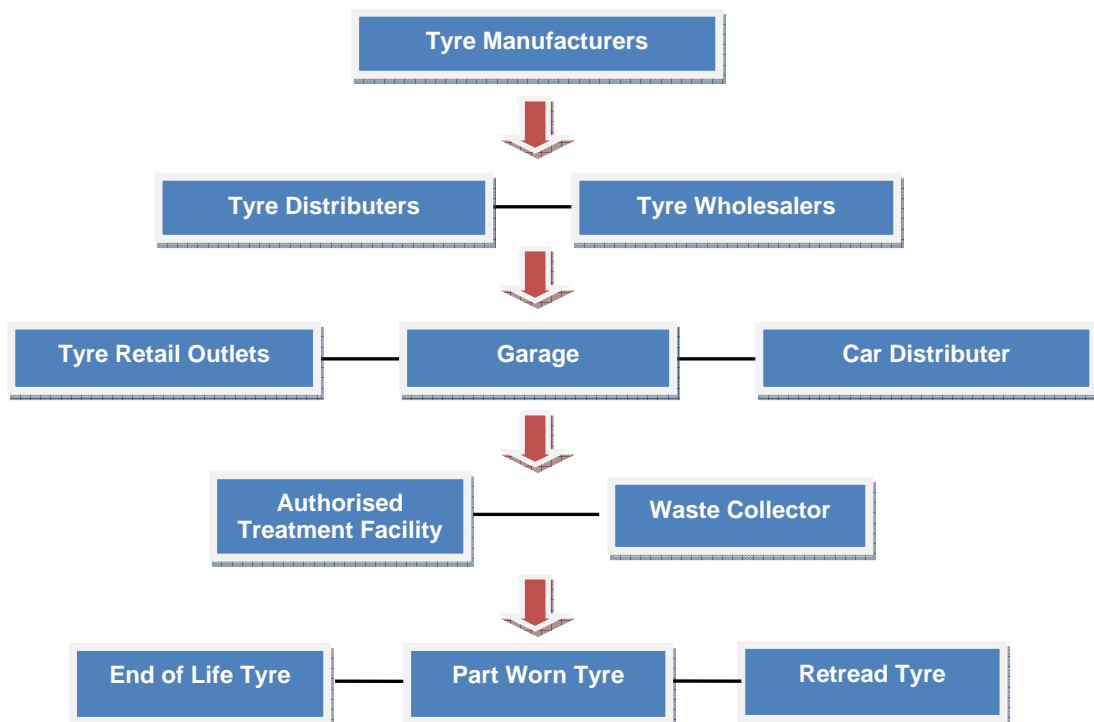
2.3 Our Understanding of the Tyre Mass Flow / Tyre Supply Chain

A mass balance assessment takes into account all material, in this case tyres, entering and leaving a system. By accounting for material entering and leaving a system, material flows can be identified which might have been unknown, or difficult to measure without this technique. This study attempted to use a mass balance approach to make an assessment of the quantity of tyres generated in both Northern Ireland and the Republic of Ireland, and how it was managed.

2.3.1 Tyre Distribution

Before considering the mass balance approach we also need to understand the distribution routes for tyres. There is a network of producers, retailers and used tyre collectors operating in the tyre industry in Ireland. This has been illustrated in Figure 2.1 below.

Figure 2.1 Tyre Distribution in Northern Ireland and the Republic of Ireland



2.3.2 Tyre Mass Balance

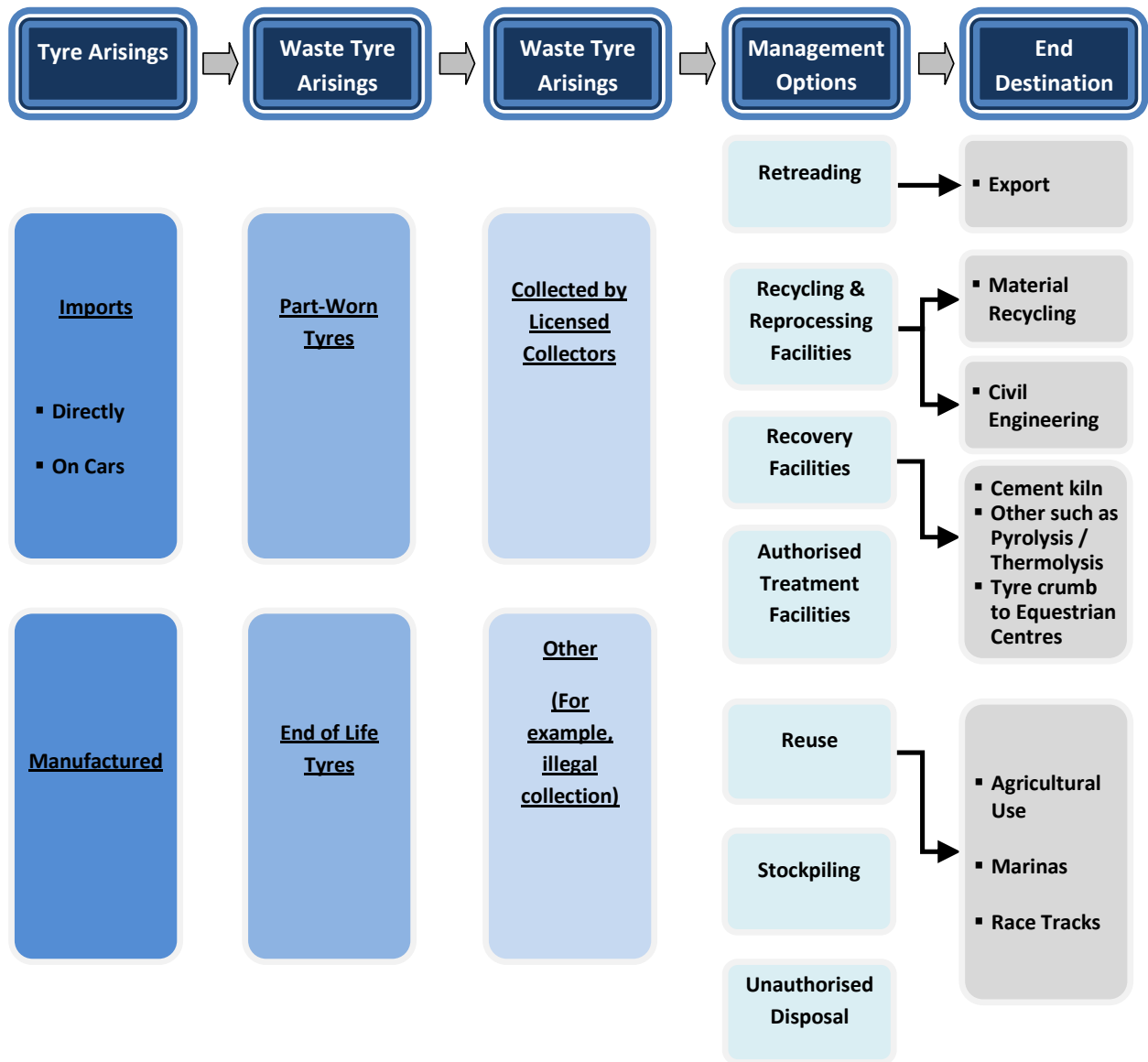
The application of the mass balance approach enables data and information collected from numerous sources to be combined and presented in a way that gives a meaningful picture of the way tyres are managed and moves through the economy from generation to ultimate reuse, recovery, recycling or disposal.

In summary, the benefits of this approach are that it:

- Provides a holistic assessment of the management and flow of tyres through the economy;
- Estimates the quantity of resources that may be being reused, recycled or recovered;
- Highlights 'missing waste' that may be being handled or disposed of outside of the regulatory framework; and
- Highlights material flows that can be targeted by awareness campaigns.

Figure 2.2 shows a schematic diagram showing the tyre market material flows from point of entry onto the market to its end use.

Figure 2.2 Mass Balance of Tyres in Northern Ireland and the Republic of Ireland



3 Legislative and Policy Frameworks

European policy provides an overall framework for waste management, setting policy objectives, principles and specific requirements. In particular, each Member State's Waste Strategy must identify the type, quantity and origin of waste to be recovered or disposed of.

Applicable legislation, in relation to tyres, for each jurisdiction is set out in the Section below. Information on key European Directives that are applicable to both jurisdictions are also set out in the section below.

3.1 European Directives

3.1.1 End-of-Life Vehicles Directive

The End-of-Life Vehicles (ELV) Directive 2000/53/EC sets out specific measures to be put in place by Member States in relation to the collection, storage, treatment, dismantling, reuse, recovery and recycling of end-of-life vehicles. The main objectives of this Directive are to prevent the production of waste from vehicles, as well as promoting the reuse, recovery and recycling of ELVs and their components including tyres. The reuse, recovery and recycling targets set out for ELVs are:

- By 1st January 2006, reuse and recovery of all ELVs will be increased to a minimum of 85% and reuse and recycling will be increased to a minimum of 80% by average weight per vehicle.
- By 1st January 2015, reuse and recovery of all ELVs will be increased to a minimum of 95% and reuse and recycling will be increased to a minimum of 85% by an average weight per vehicle.

The Directive also includes provisions relating to the:

- restriction on the use of specified hazardous materials in vehicles;
- implementation of collection systems for ELVs;
- requirement that all ELVs be transferred to authorised treatment facilities; and
- the issue of certificates of destruction by authorised treatment facilities, a measure necessary for the de-registering of an ELV.
- Annex I: Treatment Operations to promote recycling: removal of tyres.

3.1.2 Waste Incineration Directive

The Waste Incineration Directive (2000/76/EC), which will be revoked and replaced in January 2014 by Directive 2010/75/EU on Industrial Emissions, aims to prevent and limit the negative effects on the environment through pollution by emissions into air, soil, surface water and ground water and the resulting risks to human health from the incineration and co-incineration of waste. This will be done through setting emission limit values for waste incineration and co-incineration plants and by meeting the requirements of Directive 2008/98/EC on waste. In particular, the Directive provides fixed emission standards for all cement kilns from 2002 with older cement kilns prohibited from burning end of life tyres from 2008. The Directive also contains new provisions from cement kilns, from December 2008, on the co-incineration of waste including waste tyres.

3.1.3 Landfill Directive

The Landfill Directive (1999/31/EC) provides measures, procedures and guidance to prevent or reduce as far as possible the negative effects on the environment from the landfill of waste. In particular in relation to tyres, the Directive includes measures to ban the landfill of whole waste tyres since July 2003 and shredded tyres from July 2006.

3.1.4 Waste Framework Directive

The Waste Framework Directive (2008/98/EC) sets out measures to minimise the negative effects of the generation and management of waste on human health and the environment and aims to reduce the use of resources. In the context of this Directive, the following are defined as:

- **Preparing for Reuse** - means checking, cleaning or repairing recovery operations, so products or components that have become waste are prepared so that they can be re-used without any other pre-processing. Preparing for reuse is therefore a specific case of recovery.
- **Reuse** - means any operation by which products or components that are not waste are used again for their intended purpose. Reuse is therefore a means of waste prevention.
- **Recycling** - means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes.

In particular, Article 6 of the WFD sets out that certain waste streams shall cease to be waste when it has undergone recovery and complies with certain criteria, including:

- The substance or object is commonly used for a specified purpose;
- A market or demand exists for such a substance or object;

- The substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and
- The use of the substance or object will not lead to adverse environmental or human health impacts.

The criteria should include limit values for pollutants, where necessary, and shall take into account any possible adverse environmental effects of the substance or object.

3.1.5 European Regulation 1013/06/EC on the Shipment of Waste

This Regulation aims at strengthening, simplifying and specifying the procedures for controlling waste shipments to improve environmental protection. It thus reduces the risk of waste shipments not being controlled. This Regulation controls the movement of waste tyres in/out of ROI and NI. These regulations have been implemented in ROI by SI 419 of 2007 Waste Management (Shipment of Waste) Regulations, 2007.

3.1.6 UNEP Basel Convention – Technical Guidelines on Environmental Sound Management of Used Tyres

The parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal have considered the difficulties involved in identifying and managing used and waste pneumatic tyres, given their potential harmful effects on human health and the environment. Accordingly, technical guidelines on the identification and management of used tyres were prepared. Since the publication of these guidelines additional knowledge and experience in handling used and waste pneumatic tyres was gained in many countries, and attention turned to technological, economic and environmental factors broader than those discussed in the original version of the guidelines. Consequently, these guidelines were updated to assist national authorities in the environmentally sound management of used and waste pneumatic tyres within their national territories.

3.1.7 Commission Decision 2005/293/EC

Commission Decision 2005/293/EC sets out detailed rules on the monitoring of the reuse / recovery and reuse / recycling targets stated in the ELV Directive.

Member States shall calculate the reuse / recovery and reuse / recycling targets set out in the first subparagraph of Article 7(2) of the ELV Directive on the basis of the reused, recycled and recovered materials arising from de-pollution, dismantling and (post)-shredding

operations. Member States shall ensure that for materials entering further treatment, the achieved recovery rate is taken into account.

3.2 Northern Ireland

3.2.1 Waste and Contaminated Land Order 1997

The Waste and Contaminated Land (Northern Ireland) Order 1997 (as amended) is the legal framework which gives the Northern Ireland Environment Agency (NIEA) responsibilities for regulating, monitoring and enforcing sustainable, legitimate waste management practices in Northern Ireland. In particular, Article 5 of the Order places a Duty of Care on persons handling controlled waste to ensure that it is disposed of safely and is only handled by those authorised to do so.

3.2.2 Controlled Waste (Duty of Care) Regulations

The Controlled Waste (Duty of Care) Regulations Northern Ireland 2002:

- Place the onus on the producer to ensure that any waste they produce is handled safely.
- Applies to anyone who produces, imports, carries, keeps, treats or disposes of controlled waste from business or industry.
- Has no time limit, and extends until the waste has either been finally and properly disposed of or fully recovered.
- Ensures that the movement of waste is recorded and monitored from the point of generation to the point of disposal.

Under these Regulations, every movement or transfer of used tyres will be required to be accompanied by a Waste Transfer Note.

3.2.3 Controlled Waste Regulations

The Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations (Northern Ireland) 1999 set out only registered carriers can be used for the transportation of used tyres.

Under the Waste and Contaminated Land (Northern Ireland) Order, 1997, it is an offence not to be registered with the Department of the Environment as a waste carrier. The requirement to register applies to any person who transports controlled waste, which that person had not produced themselves, to or from any place in Northern Ireland in the course of any business with a view to profit.

3.2.4 Waste Management Licensing Regulations

The Waste Management Licensing Regulations (Northern Ireland) 2003 (as amended) implement the waste licensing requirements of the Waste and Contaminated Land Order. The Northern Ireland Environment Agency (NIEA) are directly responsible for the implementation of these Regulations.

Under the 1997 Order, licenses will be required to authorise:

- The deposit of controlled waste in, or on, land
- The disposal and treatment (including recovery) of controlled waste
- The use of certain mobile plant to control or treat controlled waste.

All facilities must be covered by a licence unless they hold Pollution Prevention and Control (PPC) permits (as is the case for incinerators and landfills) or they hold a registered exemption from licensing.

In addition, the management of used tyres has been impacted by the introduction of waste management legislation including: the Landfill Regulations (Northern Ireland) 2003 and the End of Life Vehicle (Producer Responsibility) Regulations 2005.

3.2.5 Landfill Regulations (NI)

The aim of the Regulations is to make provisions for issuing permits to create and operate a landfill and set out a pollution control regime for them. Landfills, classified as non-hazardous, hazardous or inert, are prohibited from accepting certain types of waste. In the context of tyres, landfills from July 2006 must not accept the following:

- Whole used tyres, with the exception of:
 - Tyres used as engineering materials;
 - Bicycle tyres;
 - Tyres with an outside diameter above 1400mm;
- Shredded used tyres, with the exception of:
 - Bicycle tyres; and
 - Tyres with an outside diameter above 1400mm.

3.2.6 End of Life Vehicles (Producer Responsibility) Regulations

The aim of the End of Life Vehicles (Producer Responsibility) Regulations (as amended) 2010 is to make producers of vehicles register with the Secretary of State and to declare a responsibility for vehicles they have marketed and develop a system for their collection and treatment when they reach the end of their life.

These Regulations also apply to operators of Authorised Treatment Facilities, which provide the producer's collection system, and must ensure that the parts removed from vehicles, including used tyres, comply with the requirements of Duty of Care.

3.2.7 Waste Management Strategy - Tyres

The Waste Management Strategy for Northern Ireland 2000 contained the following targets:

- recover 85% of tyres in Northern Ireland by 2005; and
- 100% by 2010.

Towards Resource Management, the Waste Management Strategy 2006-2020 did not contain a target for tyre recovery but commented that consideration was also being given to the extension of producer responsibility to cover tyres².

3.2.8 Motor Vehicle Tyres (Safety) Regulations

The Motor Vehicle Tyres (Safety) Regulations 1994 came into force on the 1 June 1995 and make provisions for the supply of new, retreaded and part worn tyres. In general, these Regulations provide that it is a criminal offence to supply, agree to supply, expose for supply or possess for supply a part-worn tyre, whether retreaded or not, unless certain requirements in the following areas are met: Cuts and Faults, Markings and Repairs.

3.2.9 Consumer Protection from Unfair Trading Regulations

The Consumer Protection from Unfair Trading Regulations 2008 came into force on 26 May 2008. They implement the Unfair Commercial Practices Directive (UCPD) in the UK, and replace several pieces of consumer protection legislation that were in force prior to 26 May 2008. The Regulations introduce a general duty not to trade unfairly and seek to ensure that traders act honestly and fairly towards their customers. They apply primarily to business to consumer practices (but elements of business to business practices are also covered where they affect, or are likely to affect, consumers).

3.2.10 REACH Regulations

The Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulations is a European Regulation of 18 December 2006 which came into force on 1 June 2007, with a phased implementation over the following 10 years. REACH addresses the production and use of chemical substances, and their potential impacts on human health and the environment.

² Towards Resource Management – The Northern Ireland Waste Management Strategy 2006-2020

3.3 Republic of Ireland

3.3.1 Waste Policy

The DECLG published a new waste policy document in July 2012 entitled *A Resource Opportunity Waste Management Policy in Ireland*. This policy is a major development and has potential to further support resource efficiency and waste prevention in Ireland, moving away from a landfill orientated system of waste management. The policy reiterates Ireland's commitment to the waste management hierarchy and the importance of prioritising prevention, reuse and recycling.

In terms of tyres the policy states that all current and future producer responsibility schemes will be required to formulate, implement and demonstrate significant waste prevention and reuse initiatives for their particular waste streams.

3.3.2 The Tyres and Waste Tyres Regulations

The Waste Management (Tyres and Waste Tyres) Regulations 2007 (SI 664 / 2007) became law in Ireland on 1st January 2008. The Regulations impose obligations on persons who supply tyres to the Irish market, whether as manufacturers, wholesalers, suppliers, traders, or retailers and on the collectors of waste tyres. These obligations include the submission of information as prescribed in the Regulations and in the format provided for in the Guidance concerning S.I. No. 664 of 2007 by the 10th day of each quarterly period.

Obligated persons are also required to prepare and present waste management plans and reports when submitting applications for registration and to submit a report to the EPA by the 28th February of each year.

The regulations support environmentally sound management of used tyres by providing a regulatory framework for comparing quantities of used tyres arising with the quantities placed on the market and in tracking the movement of used tyres from the time they are discarded until they are either reused or processed for recycling and / or recovery. The Regulations impose obligations on 5 of the following 5 categories:

1. **Producers of Tyres** – *persons who manufactures and sells tyres under his or her own brand, resells tyres produced by other suppliers, retreads or remoulds tyres, imports tyres on a professional basis into the State or exports waste tyres for the purposes of recovery*
2. **Suppliers of Tyres** – *persons who, for the purpose of trade or otherwise in the course of business as a manufacturer, wholesaler, supplier, trader, or retailer, sells or otherwise supplies tyres or, as appropriate, waste tyres to other persons*

3. **Authorised Waste Collectors** – *holders of a waste collection permit that is in force and which allows for the collection of waste tyres*
4. **Recovery Operators** – *a person engaged in waste recovery or waste collection for the purposes of recovery including reuse, subject to that person having obtained all necessary licences or permits under the Waste Management Act 1996 (as amended) or as appropriate the Environmental Protection Act 1992 & 2003 as approved*
5. **Farmers** – *a person who derives his livelihood from the pursuit of agriculture*

Reporting & Exemptions

Obligated persons are exempted from the reporting obligations if they participate in one of the two compliance schemes namely; TRACS (Tyre Recovery Activity Compliance Scheme) or TWM (Tyre Waste Management).

These schemes were developed by the tyre industry and approved by the then Minister for the Environment, John Gormley, T.D. following the making of the Regulations. Those who do not participate in a compliance scheme are described as self compliers and have to register with their relevant Local Authority, pay fees and fulfil prescribed reporting requirements.

Farmers

Provision has been made in the regulations to enable a farmer who requires used tyres to anchor silage covering to store up to eight used tyres for every square metre of the floor area of his or her silage pit, without the need to have a waste permit.

Marinas & Others

Others requiring used tyres for genuine reuse, such as marinas, will be able to source used tyres subject to the approval of Local Authorities and compliance with the existing regulations governing waste permits. It will be a matter for each Local Authority to adjudicate each case on its own merits, having regard to best environmental practice. Alternatively, an application may be refused.

The 2007 Tyres and Waste Tyre Regulations do not define a “waste tyre” but refer to the primary legislation Waste Management Act 1996 (as amended). A tyre becomes a waste if, as defined in Section 4 (1)(a) of the Act, the holder discards or intends to, or is required to discard it.

While the 2007 Regulations impose producer obligations somewhat similar to other PRIs, an important difference is that the compliance schemes are not full PRIs and do not appoint contractors to collect used tyres from their members nor do tyre recovery facilities receive any financial contribution. In addition, there is no levy or charge imposed on the consumer under the Regulations for the disposal of tyres.

3.3.3 End-of-Life Vehicles Regulations

Enabling legislative provisions were incorporated into the Protection of the Environment Act 2003 - which inserted a new part VA in the Waste Management Act 1996 - to facilitate the transposition and implementation in Ireland of the ELV Directive. Following a period of public consultation, the Waste Management (End-of-Life Vehicles) Regulations 2006 (S.I. No. 282 of 2006) were made and came into effect on 8th June 2006. The regulations fully transpose the provisions of the ELV Directive and are intended to facilitate its implementation in Ireland.

The Waste Management (End of Life Vehicles) Regulations 2006 set out the requirements for the management of waste tyres arising from the treatment of end of life vehicles. The main requirements are found in Articles 13 relating to record keeping; Article 14 (3) relating to only charging for vehicles missing their wheels and thus tyres when they are being deposited; and Article 15 which sets out the need for tyres to be removed and stored in order to promote their recycling in accordance with the Second Schedule of the Regulations.

The Second Schedule of the End of Life Regulations also provides the minimum technical requirements for appropriate treatment and recovery of end of life vehicles, and specifically in relation to tyres requires that appropriate treatment and recovery of an end of life vehicle shall only be carried out at a site that has appropriate storage for used tyres, without excessive stockpiling, which is designed and operated to minimise the risk of fire and potential fire hazards. In addition, to promote the recycling of end of life vehicles the recycling of certain components, including tyres, shall not be prevented through the treatment of an end of life vehicle.

Producer Obligations

Article 13 of S.I. No. 282 of 2006 outlines the obligations of producers with respect to record keeping as follows, and details that on and from the 1st day of November 2006, each producer involved, or each producer who will be involved, in the placing of specified vehicles on the market in the State shall be required to compile and maintain records on:

- (a) the number, and aggregate unladen weight, of specified vehicles put on the market in the State in the functional area of each Local Authority,

- (b) the number, and aggregate unladen weight, of end-of-life vehicles that have been deposited for appropriate treatment and recovery at Authorised Treatment Facilities in the functional area of each Local Authority,
- (c) the aggregate weight of materials for reuse, recycling, recovery and disposal arising from end-of-life vehicles that have been deposited for appropriate treatment and recovery at Authorised Treatment Facilities in the functional area of each Local Authority,

Authorised Treatment Facility Obligations

Obligations are also imposed on all authorised treatment facilities to:

- Ensure that such facilities operate under a waste licence, or as appropriate, a waste permit.
- Meet the minimum technical requirements for the:
 - storage (including temporary storage) of end-of-life vehicles prior to their being the subject of appropriate treatment and recovery,
 - appropriate treatment and recovery of end-of-life vehicles,
 - storage of components containing fluids, recoverable components and spare parts.
- Keep records of the aggregate weight of materials for reuse, recycling, recovery and disposal arising from end-of-life vehicles and report to local authorities on an annual basis.

From the 1st January 2007, on the deposit of an end-of-life vehicle at an Authorised Treatment Facility for appropriate treatment and recovery, the owner or operator of that facility is required to:

- Issue a certificate of destruction to the registered owner, an authorised person of a local authority or a member of An Garda Síochána and
- All relevant information relating to that certificate of destruction shall be noted on the National Vehicle File.

No charge may be imposed by the authorised treatment facility on the registered owner of the end-of-life vehicle in respect of the issuing of a Certificate of Destruction (COD).

Local Authority Responsibilities

Under the regulations, Local Authorities are responsible for the enforcement of all relevant provisions relating to the permitting of Authorised Treatment Facilities, and where appropriate, producer responsibility provisions concerning the administration of the system of producer registration.

Vehicle Owner Obligations

An obligation is also imposed on vehicle owners, where the registered owner of a specified vehicle intends to discard that vehicle as waste, he or she is required to deposit that vehicle at an Authorised Treatment Facility for appropriate treatment and recovery.

3.3.4 Waste Management (Collection Permit) Regulations

The Waste Management (Collection Permit) Regulations 2007 (SI 821 / 2007), as amended, amend and replace the Waste Management (Collection Permit) Regulations 2001 and set out procedures for the making of permit applications, public consultation, consideration by local authorities of submissions in relation to permit applications, and the grant, refusal and review of collection permits by local authorities. It is the intention that these will be reviewed in the context of the implementation of the new waste management policy.

3.3.5 Waste Facility Permit Regulations

The Waste Management (Facility Permit and Registration) Regulations 2007 (SI No 821 of 2007) as amended by the Waste Management (Facility Permit and Registration) (Amendment) Regulations 2008 (SI No 86 of 2008) came into operation on the 1st June 2008. These Regulations require that any facility that is involved in the recovery or disposal of waste should hold a licence, permit or certificate of registration depending on the nature of the activity.

Waste Management Licences are issued by the Environmental Protection Agency (EPA) while Waste Facility Permits and Certificate of Registration are granted by Local Authorities for privately operated waste facilities.

3.3.6 Waste Management Act

The Waste Management Act 1996 revolutionised waste management in Ireland as it introduced best practice and the main objectives of the Act are:

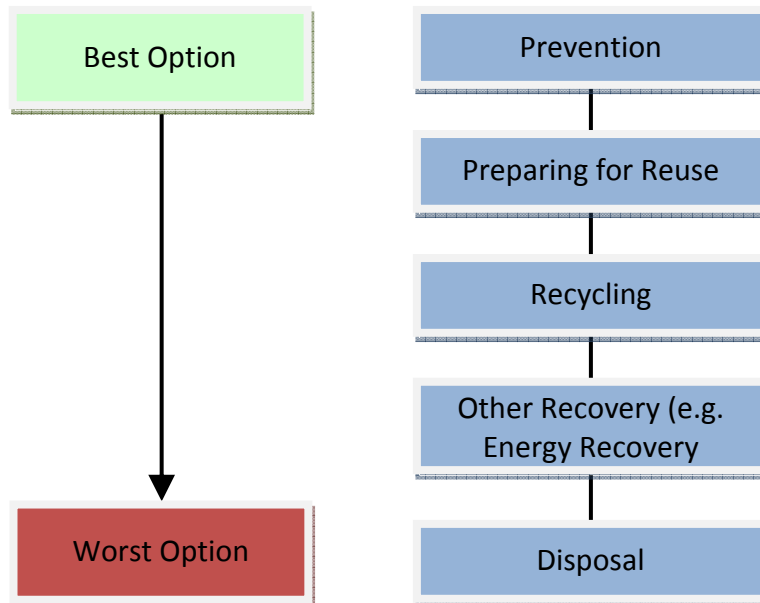
- A more effective organisation of public authority functions in relation to waste management, involving new or redefined roles for the Minister, the EPA and local authorities;
- Enabling measures designed to improve performance in relation to the prevention and recovery of waste; and
- A comprehensive regulatory framework for the application of higher environmental standards, in response to EU and national requirements.

3.3.7 Waste Directive Regulations 2011

These Waste Directive Regulations 2011 (126/2011) provide measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use. It transposes the Waste Framework (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008).

These Regulations therefore implement the contents of the Waste Framework Directive, including the new waste hierarchy the primary purpose of which is to minimise adverse environmental effects from waste and to increase resource efficiency in waste management and policy. Figure 3.1 below sets out the new Waste Hierarchy as a priority order for waste management.

Figure 3.1 Waste Management Hierarchy



4 Methodology

The project required the collection of data from tyre handlers, manufacturers and retailers across Northern Ireland and the Republic of Ireland to determine the total arisings of used tyres across the island of Ireland. In addition, information from tyre collectors as well as recycling and management companies was also collated. The project specification detailed that this was to be by way of questionnaires.

RPS also supplemented the surveys, issued by post or email, with site visits in an attempt to increase the amount of data captured.

4.1 Consultation

RPS consulted with a number of organisations and bodies to gain further data to support the survey findings.

4.1.1 Northern Ireland

As part of this study RPS have consulted with the following:

- Land and Resource Management Unit, NIEA
- Environmental Crime Unit, NIEA
- Water Management Unit, NIEA
- Transfrontier Shipment Unit, NIEA
- Driver and Vehicle Licensing, DVLNI
- Local Authorities
- Northern Ireland Fire and Rescue Service, NIFRS
- British Tyre Manufacturers Association, BTMA
- Peter Taylor, General Secretary - Tyre Recovery Association, TRA
- Northern Ireland Statistics and Research Agency

4.1.2 Republic of Ireland

As part of this study RPS have consulted with the following:

- Central Statistics Office, CSO
- National Transfrontier Shipments Office
- Environmental Protection Agency, EPA
- Tyre Recovery Activity Compliance Scheme (TRACS) and Tyre Waste Management (TWM)
- Local Authorities

4.2 Survey Questionnaires

A selection of survey questionnaires were developed in liaison with the project steering group, designed to collect the information required to feed into the mass balance assessment. These surveys were designed to gather specific data from the different sectors within the tyre market in both Northern Ireland and the Republic of Ireland and the varying operations that are carried out by these businesses. As well as questions targeting the retrieval of sector specific data, contact information for the RPS project team was also included within the questionnaire in the event of a business wishing to provide further information on the survey.

Specifically, three surveys were designed to target both NI and ROI:

1. Manufacturers, distributors and retailers of tyres;
2. Tyre collectors; and
3. Tyre recycling industry.

The following provides a summary of the information that was requested from manufacturers, distributors and retailers of tyres in Northern Ireland and Republic of Ireland:

- The quantity of new tyres sold in or imported into Northern Ireland and the Republic of Ireland;
- The quantity of used tyres handled in Northern Ireland and the Republic of Ireland and their disposal routes;
- The number of importers of new tyres into Northern Ireland and the Republic of Ireland;
- The number of importers of remoulds / retreads carried out in Northern Ireland and the Republic of Ireland;
- The quantity of remoulds / retreads generated within Northern Ireland and the Republic of Ireland;
- Barriers encountered by the industry and key stakeholders in the management of used tyres in both Northern Ireland and the Republic of Ireland; and
- To determine the tyre manufacturing industry opinions on waste management in Northern Ireland and the Republic of Ireland.

The following provides a summary of the information that was requested from tyre collectors in Northern Ireland and Republic of Ireland:

- The quantity of used tyres handled in Northern Ireland and the Republic of Ireland and their disposal routes;
- Barriers encountered by the industry and key stakeholders in the management of used tyres in both Northern Ireland and the Republic of Ireland; and

- To determine the tyre industry opinions on waste management in Northern Ireland and the Republic of Ireland, including the industry's views on emerging technologies for recycling tyre-derived rubber into new tyres and the industry's views on various Producer Responsibility Schemes being operated for used tyres across the EU and beyond.

The following provides a summary of the information that was requested from the tyre recycling industry in Northern Ireland and the Republic of Ireland:

- The quantity of used tyres handled for recycling;
- The form of recycling, equipment and tonnages of tyres recycled per annum;
- The demand for waste / product, number of customers and their location;
- Barriers encountered by the industry and key stakeholders in the management of used tyres in both Northern Ireland and the Republic of Ireland; and
- The waste recycling industries opinions on used tyre management in Northern Ireland and the Republic of Ireland.

All contact information for the respondents was provided by NIEA, TWR and TRACS. The survey which ran from the 31st May to 27th July 2012 was intended to assist in the development of a mass balance picture of used tyres in Northern Ireland and the Republic of Ireland and to generate feedback on the management of used tyres in both jurisdictions.

Survey questionnaires were issued by post or email and follow up telephone calls and questionnaires were reissued, where appropriate, to encourage non-respondents to provide the required information and data. Companies who had not responded within the survey timescale were issued with a second questionnaire, either by post or email, informing them that the deadline had passed and stressing the importance of the survey being completed. Following this, the list of non-respondents in both NI and ROI were contacted with the emphasis on raising the response rate and retrieving meaningful data. This was achieved by conducting a significant number of telephone calls over a 10 day period to the companies on the non-response list. Each non-respondent was informed of the importance of the survey being completed with questionnaires resent by email or the questionnaire completed by one of the project team during the telephone call. Messages were left and further follow-up calls were conducted if there was no response received, and the questionnaire database updated accordingly.

Following the receipt of completed questionnaires all data was collated and compiled into a database with the following results generated:

- Tonnage and quantity of tyres arising;
- Tyre type;
- Point of origin (domestic, commercial and imported);

- Tonnage and quantity of tyres reused, recycled, recovered or disposed of; and
- Tyre disposal methods and destination.

A copy of each questionnaire is contained in Appendix A.

4.3 Site Visits

4.3.1 Northern Ireland

Key players in the tyre sector in Northern Ireland were identified by the project team as being valuable data sources. A total of ten economic operators were identified and contacted to request a site visit to discuss how their business manages tyres and to gain data, through both the completion of the survey questionnaire and discussions during the site visit, with the information gained from the site visit fed into the results of the survey. A copy of the questionnaire was forwarded to each business to inform relevant personnel of the level of detail required prior to the site visit being undertaken. Each business was contacted by telephone to provide any necessary clarification as well as a suitable date for the site visit.

After discussion a number of companies provided data but did not wish to meet face-to-face. In summary, we met with two companies on-site, and had lengthy telephone / email discussions with the other companies to obtain the data. Only one economic operator failed to provide any information. In summary, 9 out of 10 major tyre retailers / manufacturers provided information that was suitable for use in the survey results.

4.3.2 Republic of Ireland

In the Republic of Ireland two site visits to each self compliance scheme operator were requested and these were carried out as follows:

1. TRACS Ltd

Individuals from RPS met with representatives from TRACS Ltd on the 10th July 2012. TRACS have established a secure database that holds significant information on the management and tracking of tyres in ROI. TRACS invests heavily in data security and data management systems and procedures to ensure confidentiality to its members and as such was only willing to provide the data for the survey for all TRACS members as a whole.

2. TWM Ltd

Individuals from RPS met with representatives from TWM Ltd on the 24th July 2012. Following this meeting TWM Ltd provided information for the survey on the management of tyres for all TWM members as a whole.

4.4 Article 44 Data

Prior to the commencement of the survey, NIEA had undertaken an exercise to issue Article 44 Notices, under the provisions of the Waste and Contaminated Land (Northern Ireland) Order 1997, to tyre retailers and distributors in Northern Ireland requesting that these operators provide NIEA with Waste Transfer Notes for movements of tyres within a specified period. As part of this project, a review of the Waste Transfer Notes provided by retailers / distributors was undertaken, and where the data provided on these was appropriate, it was included within the data returns for the survey. In addition, in order to supplement the results for the tyre collectors and recyclers businesses, the results that were contained on Waste Transfer Notes have also been used for this element of the survey.

4.5 Response Rate

The response rates for the survey for Northern Ireland (for the survey questionnaires and site visits) are contained in Table 4.1 and for Republic of Ireland in Table 4.2.

Table 4.1 NI Response Rate Data

Group	Total Survey Population	No. Not Applicable / Returned etc	Total Survey Population	Responses Received	Response Rate
Retailers	240	24	216	50	23 %
Collectors	23	0	23	3	13 %
Recyclers	7	0	7	3	43 %
ATFs	67	2	65	7	11 %
Total	335	26	309	63	20 %

As noted above 63 companies provided a response to the survey questionnaire with the necessary data to satisfy the requirements of the survey. This attributes to a percentage response rate of 20%. The recyclers sector, with the smallest population, provided the highest response rate (43%) while the lowest response to the survey questionnaire (11%) was achieved by businesses operating as Authorised Treatment Facilities (ATFs) for End of Life Vehicles.

In addition to the responses received to the survey questionnaires detailed above, Article 44 responses from retailers were also analysed to achieve the following responses:

- Retailers 64
- Collectors 13

- Recyclers 2
- ATFs 0

It should be noted that, in order to avoid double counting, in instances where both survey and Article 44 responses were received from the same company, the Article 44 response was not included within the overall responses. The survey responses were included over the Article 44 responses as they contained more comprehensive information to be included in the overall survey results.

The response rates for the survey for ROI are contained in Table 4.2.

Table 4.2 ROI Response Rate Data

Group	Total Survey Population	Responses Received	Response Rate
Retailers	1,620	35	2%
Recyclers	48	5	10%
Collectors	162	11	7%
Total	1,830	51	3%

The survey population in the ROI totalled 1,830 companies. A total of 51 companies provided a response to the questionnaire which corresponded to an overall response rate of 3%. The response rate for Retail sector, Recycling sector and Tyre Collectors was calculated to be 2%, 10% and 7% respectively.

4.5.1 Efforts to Increase Survey Awareness and Response Rates

It should be noted that in order to increase the project profile and to gain more responses RPS conducted the following:

- Issued a reminder email to all participants.
- Liaised with the Chartered Institution of Wastes Management and ensured that details of the survey were published in the CIWM Weekly email newsletter “News on Line” to target Northern Ireland, this newsletter also covers ROI members.
- Liaised with the team at EnviroSolutions and had details of the survey placed in the EnviroSolutions Weekly update to target ROI.
- Distribution of a reminder letter from a senior officer in the DOE to those who received the questionnaire in Northern Ireland asking for their assistance and participation in the survey through completion of the questionnaire.

4.6 Local Authority Consultation

A letter was issued to an appropriate Officer in each Local Authority in NI and ROI. A copy of the letter is contained in Appendix B.

Initially, the response rate from the Local Authorities was low, as detailed in Table 4.3. However in an attempt to get further data RPS contacted every Local Authority via a follow up phone call and this successfully increased the Local Authority response rate to 77% for NI and 50% for ROI respectively.

Table 4.3 Local Authority Response Rate Data

	Local Authorities Contacted	Initial Responses Received	Initial Response Rate	Final Responses Received	Final Response Rate
NI	26	5	19%	20	77%
ROI	34	7	21%	17	50%

5 Results – Used Tyre Arisings Data

This section of the report sets out the results for various elements of the survey in order to determine used tyre arisings in both Northern Ireland and the Republic of Ireland.

5.1 Used Tyre Arisings - Northern Ireland

5.1.1 Estimations from Licensed Vehicle Statistics

At the outset of this project it was anticipated that data from survey returns would be used to determine the overall used tyre arisings in Northern Ireland. However, due to a number of issues with this dataset, set out below, an estimation and analysis of Licensed Vehicle Statistics in Northern Ireland has been used as an alternative source of data on used tyre arisings. Issues encountered with the survey returns for tyre retailers which were intended to be used to determine used tyre arisings, include:

- The initial survey of tyre retailers, via post and email, resulted in a low response rate (7%). Site visits were then carried out to a number of the key players in the tyre industry in an attempt to increase the response rate. Additional reminders were also used to encourage the tyre retailers to respond to the survey. These measures resulted in a satisfactory tyre retailers response rate of 23%.
- In order to scale up the results to be representative of all retailers, it had initially been intended to use financial turnover as the most appropriate rating factor. However, respondents were reluctant to provide such information and a pro-rata uplift based purely on the number of businesses would not have been robust. As an alternative, an attempt was made to obtain employee numbers from the Inter Departmental Business Register (IDBR), both for the obtained sample and the retailer population, which it was hoped would then provide a reasonable basis for scaling up the results. However, following receipt of aggregated data from the Department of Enterprise, Trade and Investment (DETI), it was determined that there were insufficient matches between the retailer population as used by the survey and the IDBR. This could have been for a variety of reasons such as incomplete, inaccurate or ambiguous address information on the retailer dataset or indeed if a business was no longer trading. Because of this, and other unsuccessful attempts to obtain employee numbers directly from respondents, ultimately it did not prove possible to derive a robust scale up factor for the tyre retailers.
- The survey database could therefore not be used to derive results for the tyre retailers and the estimation and analysis of Licensed Vehicle Statistics in Northern Ireland was used as an alternative data source.

For this analysis, it is assumed that tyre arisings occur in the country in which the vehicle is registered. Whilst it is acknowledged that this may not be totally accurate, particularly for cars registered in NI and thereafter brought across the border to ROI or cars subject to licence evasion, it is believed that used tyre arisings can be approximated based on vehicle registrations. Calculations have been undertaken on the Licensed Vehicle Statistics to provide an estimate of used tyres arising in Northern Ireland in 2010/11, as set out in Table 5.1 below. Key assumptions that have been considered in these calculations are as follows:

- Licensed vehicle numbers in each calendar year have been amended to take account of seasonality in car buying;
- An adjustment has been made to the figures in the calculation to take account of spare tyres included in vehicles;
- The average number of tyres contained on each vehicle type has been predicted and included in the calculations undertaken;
- It has been assumed that that tyres were, on average, half way through their life when calculating the lag period before they become waste arisings; and
- A number of sources of data have been used to estimate average tyre life including the Northern Ireland Vkt Survey for cars and the Department of Transport Heavy Goods Vehicles (HGVs) Survey.

Table 5.1 Used Tyre Arisings (Units and Tonnage) in Northern Ireland in 2010/11

Taxation Group	Tyres (Units)	Tyres (Tonnage)
Private Light Goods	1,567,735	12,385
Motorcycles, Scooters & Mopeds	8,919	45
General (HGV) Goods	67,721	2,921
Bus	7,534	384
Agricultural / Tractors	14,712	1,868
Other	2,971	23
Crown	10,925	86
Exempt	111,876	884
All Vehicles	1,792,392	18,597

These calculations estimate that there is a total of 18,597 tonnes of used tyres in Northern Ireland in 2010/11 which equates to approximately 1.8 million units of tyres.

Full details on the calculations undertaken to achieve these results are contained in Appendix C.

5.1.2 Northern Ireland Regional Trade Statistics for Tyre and Tyre Related Products

Regional Trade Statistics (RTS) from HM Revenue & Customs (HMRC) have been used to provide information on exports and imports of tyres in Northern Ireland. The RTS provide a useful breakdown of the flows of imports and exports between regions of the UK and other countries. RTS was designed to provide a meaningful breakdown of the UK's Overseas Trade Statistics (OTS), presented in the standard regions, hence we can filter to NI level for the purposes of this study. The data provided in the RTS is taken primarily from Customs systems (for non-EU trade) and the Intrastat survey (for EU trade).

HMRC does not receive information in respect of goods that move wholly within the UK. The data is categorised by country and Standard International Trade Classification (SITC) at division level (2-digit). The SITC is a relatively broad classification of goods and is not as detailed as the commodity classification available in the OTS.

Table 5.2 shows the tyre imports and exports for Northern Ireland from the period 2006 to 2011.

Table 5.2 Tyre Import and Exports for New Tyres in Northern Ireland (2006 – 2011)³

	Import	Export
	Net Mass Tonnes	Net Mass Tonnes
2006	30,448	22,165
2007	33,085	23,959
2008	31,632	22,625
2009	26,546	17,397
2010	26,768	18,844
2011	28,441	21,311

It should also be considered that tyre manufacturing also takes place in Northern Ireland, in addition to that quantity of tyres imported. Manufacturing of industrial tyres takes place at one plant in Northern Ireland which was included in this survey. However, although this company participated in the survey they did decline to provide information on the number of tyres they place on the market in Northern Ireland due to commercial sensitivity.

³ Regional Trade Statistics – filtered for Northern Ireland and SITC code filtered for 62, rubber manufactures n.e.s only

The import figures presented therefore do not include the tyres that are manufactured in Northern Ireland and then placed on the market here. The export figures presented therefore include a percentage of tyres that are manufactured in Northern Ireland as well as others that are being exported out of the Northern Ireland market. Given that the quantity of tyres manufactured in Northern Ireland is unknown it is not possible to use the figures presented to calculate the net balance of tyre imports and exports to provide an estimate of tyres arising.

Exports out of Northern Ireland

Consultation with the Transfrontier Shipment Unit confirmed that 7,761 tonnes of used tyres (Basel Code B3140) were exported from Northern Ireland under the Transfrontier Shipment of Waste Regulations 2007 as amended in 2011.

Exports between Northern Ireland and the Republic of Ireland

In addition, Table 5.3 shows the cross border imports and exports of tyres between NI and the ROI.

Table 5.3 Cross-Border Imports and Exports with ROI⁴

Tyre Type	Tyre Imports into ROI		Tyre Exports from ROI	
	Jan-Dec 2010		Jan - Dec 2010	
	Tonnes	Supply Units	Tonnes	Supply Units
Car	245	29,760	704	83,613
Bus / Lorry	125	5,716	225	13,181
Aircraft	0	0	0	0
Motorcycles	0	0	1	297
Bicycles	0	0	0	0
Other Pneumatic Tyres	514	9,473	37	909
Other New Pneumatic Tyres	17	280	66	1,560
Retreaded Tyres	7	263	13	755
Used Pneumatic Tyres	25	839	27	1,048
Solid or Cushion Tyres	0	0	1	0
Total	933	46,331	1,074	101,363

⁴ Intrastat data of tyre imports and exports between ROI and NI

5.1.3 Results from Retailer Survey

A total of 114 responses were received from the retailer element of the survey. This included 50 questionnaire responses (from the survey and site visits) and 64 Article 44 responses. The businesses targeted as part of the survey were provided in the form of a database of tyre retailers by the Northern Ireland Environment Agency. This database, plus information provided by NIEA through the Article 44 exercise, represented a total population of 440 businesses. . Table 4.2 provides full details of the responses rates achieved for the questionnaire element of the survey.

A total of 200 Article 44 responses were analysed for the retailer element of the survey and from this review it was determined that 109 businesses provided insufficient data for the survey, that is, no quantification of the number of units or weights of used tyres generated within a specified time period. The Waste Transfer Notes for 91 businesses therefore provided sufficient data for this survey, however 27 of these businesses had already provided data to the questionnaire element of the survey so their details have been discounted from the Article 44 responses so as not to double count the figures provided.

Responses provided as part of the questionnaire element of the survey were used for analysis rather than the data provided through the Article 44 exercise as this source provided more data useful for the survey than that contained on Waste Transfer Notes.

The results from the 64 companies gathered via the Article 44 exercise were combined with the survey responses to give an overall response for tyre retailers. However, given the lack of available information on employee numbers for the retailers sector, required to scale up the survey data to represent the whole sector, the used tyre arising figure derived from DVA statistics and set out above, has been used as the figure for used tyre arisings for this study.

5.2 Used Tyre Arisings - Republic of Ireland

Tyre arisings for the Republic of Ireland are calculated by combining new tyres imported directly and tyres imported on vehicles.

5.2.1 New Tyres Imports

Intrastat data has been obtained to quantify the tyre arisings via import and exports in ROI. The data was received from the Intrastat Survey of Irish Traders. This does not include tyres on vehicles imported into the country.⁵

⁵ Goods exports and imports statistics provides data on the movement of goods between countries. The statistics are a combination of Customs-based non-EU trade statistics and data from the Intrastat Survey of Irish traders involved in trade with other EU member states. The collection of trade data is the responsibility of VIMA (a branch of Revenue).

In the Republic of Ireland, tyres arisings are reported using codes shown as set out in Appendix D.

Table 5.4 describes the various types of tyres that are imported into the Irish market and exported from ROI. It is broken down into countries where the tyres are imported from, in terms of tonnes and supply units. For the purpose of this report, we have used 2010 data.

The Intrastat system has two components. Firstly, the Intrastat survey (conducted by the Revenue Commissioners), in which traders, above the Intrastat survey trade thresholds, make detailed monthly returns giving information on the quantity and value of all exports to or imports from EU countries.

The total number of traders required to make a detailed import return is about 6,700 while about 1,900 must make a detailed export return. The response rate in terms of number of traders in May 2012 was 73%, covering an estimated 89% of the total value of intra-EU trade.

The second component of the Intrastat system is the regular VAT return, on which all traders are required to record the total value of goods imported from and exported to other EU countries. This information provides the basis for determining total EU trade for those traders below the Intrastat survey thresholds. It is also used to maintain the register of EU traders.

The statistics of trade with non-EU countries are compiled from the documents supplied by importers and exporters to the Customs authorities. The document is the Single Administrative Document (SAD) used for Customs clearance purposes.

Table 5.4 Summary of Tyre Imports and Exports in ROI, 2010 (Information from Intrastat data)

Category	Type of Tyre	Tyre Imports		Tyre Exports		Imports minus Exports	
		Tonnes	Units	Tonnes	Units	Tonnes	Units
1	Car	29,975	2,923,279	2,207	314,266	27,768	2,069,013
2	Bus / Lorry	12,462	289,354	2,528	232,124	9,934	57,230
3	Motorcycle	128	22,961	40	7,212	88	15,749
4	Other Pneumatic Tyres	3,469	69,881	752	13,780	2,717	56,101
5	Bicycle	55	91,789	0	91	55	91,698
5	Other New Pneumatic Tyres	511	16,547	54	4,002	457	12,545
6	Retreaded Tyres	677	29,131	156	3,925	521	25,206
6	Used Pneumatic Tyres	270	16,309	158	8,551	112	7,758
7	Aircraft	0	27	3	245	-3	-218
7	Inner Tubes or Rubber	367	412,799	3	5,031	364	407,768
7	Solid or Cushion Tyres	571	0	37	0	534	0
	Total	48,485	3,872,077	5,938	589,227	42,547	3,282,850

5.2.2 Tyres Imported on Vehicles

Data on vehicles imported and exported in 2010 was also received from Intrastat. In order to account for tyres on these imported vehicles assumptions have been made regarding the quantity of tyres on each vehicle and also the tyre weight. For category 2 Heavy Goods Vehicles, the average number of tyres per vehicle is dependent on the unladen weights of the vehicle. This breakdown was not available from Intrastat, therefore the breakdown provided by the CSO for newly licensed HGVs has been utilised to calculate an average number per HGV. The details of the calculations are shown in Appendix F of this report.

5.2.3 Tyre Arisings - Summary

A summary of the quantity (Units and Tonnes) of tyres arisings are shown in Table 5.5 below.

Table 5.5 Tyres Arisings in ROI, 2010

Category	New Tyres		Tyres on Vehicles		Tyres Arisings	
	Tonnes	Units	Tonnes	Units	Tonnes	Units
1	27,768	2,609,013	3,711	361,892	31,479	2,970,905
2	9,934	57,230	2,180	50,624	12,114	107,854
3	88	15,749	51	9,138	139	24,887
4	2,717	56,101	-157	-3,164	2,560	52,937
5	512	104,243	9	1,776	521	106,019
6	633	32,964			633	32,964
7	895	407,550			895	407,550
Total	42,547	3,282,850	5,794	420,266	48,341	3,703,116

5.2.4 Information from Compliance Schemes

As set out previously in Section 2.2 of this report, there are three ways of achieving compliance for companies in the Republic of Ireland that manage used tyres. They can report to their Local Authority, TRACS or TWM. In addition to the Import data TRACS have also provided data on the quantity of tyres placed on the market in the Republic of Ireland by tyre wholesalers / distributors and tyre retailers. This data is set out in Tables 5.6 and 5.7 below.

It should be noted, that in 2010, the EPA contacted all Local Authorities to obtain information on used tyre operators that are registered with them to achieve compliance under the Waste Management (Tyres and Waste Tyres) Regulations 2007⁶. From this exercise, it was determined that 21 Local Authorities reported information to the Office of Environmental Enforcement indicating that 8 operators are registered with them. The tonnage of used tyres managed by these companies are therefore negligible in relation to the overall quantity of used tyres managed in the Republic of Ireland.

Table 5.6 Tyres Supplied to the Market by Producers in 2010⁷

Description	TRACS		TWM	Total (Tonnes)
	Tyres (Units)	Tyres (Tonnes) ⁸	Tyres (Tonnes)	
Car / Van	1,931,320	19,804	4,059	
Truck	213,089	9,177		
Motorcycles	20,588	115		
Agri / Industry	39,828	1,977		
Construction	2,923	15		
Total	2,207,748	31,088	4,059	35,147

From the retailers, Table 5.7 below shows the total units reported.

Table 5.7 Tyres Supplied to the Market by Retailers in 2010⁹

Description	TRACS		TWM	Total (Tonnes)
	Tyres (Units)	Tyres (Tonnes)	Tyres (Tonnes)	
Car / Van	1,366,522	14,012	1,650	
Truck	80,999	3,488		
Motorcycles	0	0		
Agri / Industry	14,315	711		
Construction	0	0		
Total	1,461,836	18,211	1,650	19,861

⁶ EPA.2010. Report on Management of Waste Tyres in Ireland.

⁷ TRACS Annual Report 2010 and personal communication with TWM.

⁸ TRACS Annual Reports only provide the number of tyre units. Average weights for tyre imports in Table 5.6 have been used to estimate quantities.

⁹ TRACS Annual Report 2010 and personal communication with TWM.

In order to confirm tonnages and quantities used tyre arisings in Republic of Ireland in 2010, the tyre units set out in Table 5.6 have been utilised along with the assumption that used tyres are 20% lighter than new tyres¹⁰. Estimations for used tyre arisings are set out in Table 5.8 below.

Table 5.8 Used Tyres Arisings in ROI, 2010

Category	Used Tyre Arisings (Units)	Used Tyre Arisings (Tonnes)
1	2,376,724	25,183
2	86,283	9,691
3	19,910	111
4	42,350	2,048
5	84,815	417
6	26,371	506
7	326,040	716
Total	2,962,493	38,673

¹⁰ 20% is the average difference in weight between new tyres and waste tyres in Table 5.6.

6 Results – Management Data

6.1 Collectors Data

6.1.1 Northern Ireland

Data for waste collectors in Northern Ireland has estimated that approximately 8,412 tonnes of used tyres were collected by licensed waste collectors in 2010/11. As set out in Table 4.1, a total of 23 used tyre collectors operating in Northern Ireland were surveyed as part of this Study, from information provided by the Northern Ireland Environment Agency (NIEA) on those businesses operating as Registered Carriers licensed to collect used tyres in Northern Ireland, as well as from information provided on Waste Transfer Notes gathered during the Article 44 exercise. A total of 16 responses were received from registered waste collectors in Northern Ireland. These responses included 3 from survey questionnaires and 13 from Article 44 data. The data received from waste collectors was considered robust as it avoided the potential for double counting of results that may be encountered with other elements of the waste industry.

However, during analysis it was advised by DOE and NIEA that a number of these businesses were not active used tyre collectors during the survey period and were operating as tyre retailers, ATFs and one was an unregistered carrier. A total of 18 tyre collectors were therefore determined as the population for this element of the survey. There were 15 usable responses from these 18 businesses. These figures were then used for subsequent analysis of used tyre collection data in Northern Ireland. The 15 responses received have been factored up to the total population of 18 active waste collectors to provide results for this element of the survey.

A linear pro-rata of the data was carried out by combining the results of the questionnaire and the Article 44 responses to provided 80% of the data.. This method of factoring up the data was utilised due to a lack of data for each company that could have been used to carry out a scale up based on the profile of the sector, such as employee numbers or turnover. Attempts were made to obtain employee numbers for each business surveyed from the Inter Departmental Business Register (IDBR) database administered by DETI. However, following these attempts to obtain employee numbers there were still a number of businesses for which this data could not be obtained and a scale up factor for the whole sector was not able to be calculated. The method of carrying out a linear pro-rata of the data obtained was therefore considered to be the only viable option, without taking account of company sizes or profiles.

Table 6.1 below summarises the data provided by the respondents in this element of the survey.

Table 6.1 Quantity (Units and Tonnage) of Used Tyres Collected in NI for 2010/11 (Information from Survey Returns and Article 44 Data)

Tyre Type	Tyres (Units)	Tyres (Tonnage)
Car	893,084	7,055
Light Truck	40,064	942
Heavy Truck	6,734	344
Agricultural	395	50
Unknown	2,623	21
Total	942,900	8,412

The survey also gathered data from Authorised Treatment Facilities (ATFs) used for the disposal of End of Life Vehicles, including tyres. A total of 7 responses were received from ATFs in Northern Ireland from survey questionnaires. A total of 67 ATFs in Northern Ireland were surveyed as part of this Study, using information provided by the Northern Ireland Environment Agency (NIEA), 2 ATFs were understood to be no longer operational leaving a total population for ATFs of 65.

As the profile of this sector is unknown it has not been possible to factor the raw data obtained to accurately reflect all the ATFs in Northern Ireland. Table 6.2 below summarises the data provided by the respondents in this element of the survey.

Table 6.2 Quantity (Units and Tonnage) of Used Tyres Collected at ATFs in NI for 2010/11 (Information from Survey Returns)

Tyre Type	Tyres (Units)	Tyres (Tonnage)
Car	961	7.6
Light Truck	100	2.4
Heavy Truck	400	20.4
Agricultural	0	0
Unknown	2,000	15.8
Total	3,461	46.2

Used tyres are generated at ATFs as cars are broken down and dismantled and these tyres should then be disposed of by a tyre recovery operator. In order to prevent double-counting the quantity of used tyres collected at ATFs in Northern Ireland are included in the tyre collection element of this survey.

The survey results therefore estimate that a total of 8,412 tonnes (942,900 units) of used tyres are collected by Registered Carriers in Northern Ireland.

6.1.2 Republic of Ireland

As part of this Study, RPS undertook consultation with both TRACS and TWM to obtain data on their members in relation to tyres placed on the market by wholesalers / distributors and retailers, tyres collected by registered waste carriers and the waste management practices for these tyres how these used tyres were disposed of. Data for 2011 was the latest available data provided by TRACS and TWM and was therefore included for analysis in this report.

This section of the report sets out the information received from TRACS and TWM on used tyres collected and how these are managed. This is based on data collected from 41¹¹ waste collectors registered with the compliance schemes. Table 6.3 sets out the data received from both compliance schemes for used tyres collected by their members of which 29,343 tonnes were estimated to be collected in 2011.

¹¹ TRACS in their Annual Report 2012 indicated that there was a total of 83 waste collectors who had a waste collection permit allowing the collection of tyres. These collectors must also be registered with the compliance schemes or the local authorities under the Waste Tyres Regulation to be allowed to collect waste tyres.

Table 6.3 Used Tyres Collected in 2011 by Waste Collectors Registered with the Compliance Schemes¹²

Description	TRACS		TWM
	Tyres Collected (Units)	Tyres Collected (Tonnes)	Tyres Collected (Tonnes)
Car / Van	2,299,778	23,582	1,858
Truck	37,669	1,622	
Motorcycles	339	2	
Agri / Industry	843	42	
Construction	0	0	
NES (Rethreads and Used Pneumatic Tyres)	45,065	2,237	
Total	2,383,694	27,485	1,858
Total Tyres Collected in ROI			29,343

The reported quantities of tyres collected in 2011 accounted for 76% of the used tyre arisings shown in Table 5.8.

A summary of information received from survey returns from those businesses operating under Waste Permits & Collectors and Recovery Operators and Waste Collection Permits is provided below. However, given the lack of information received from this element of the survey the data supplied by compliance schemes, TRACS and TWM, has been used to determine the quantity of used tyres collected and recovered by registered waste operators in the Republic of Ireland.

6.2 Used Tyres Recycled

6.2.1 Northern Ireland

Data for recycling operators in Northern Ireland has estimated that approximately 13,370 tonnes of used tyres were recovered by licensed waste operators in 2010/11. As set out in Table 4.2, a total of 7 used tyre recycling operators in Northern Ireland were surveyed as part of this Study, from information provided by the Northern Ireland Environment Agency (NIEA) on those businesses operating as licensed waste management sites, as well as from information provided on Waste Transfer Notes gathered during the Article 44 exercise. A total of 5 responses were received from licensed waste tyre recycling operators in Northern Ireland. These responses included 3 from survey questionnaires and 2 from Article 44 data.

¹² TRACS Annual Report 2011 and personal communication with TWM.

Table 6.4 summarises the data provided by the respondents in this element of the survey. The 5 responses received have been factored up to the total population of waste tyre recycling operators in Northern Ireland to achieve results for this element of the survey. Although there are few businesses in this sector, data were received from over 70% (5 out of 7) of the population. Given that the response rate was over 70% and also that it was not possible to obtain information relating to business sizes (which would otherwise have enabled a more sophisticated rating up calculation to be carried out), this data was rated up linearly as this was considered to be the only viable option, without taking account of company sizes or profiles. A number of approaches were taken, unsuccessfully, to capture information on company sizes, as set out in section 6.1.1.

Table 6.4 Quantity (Units and Tonnage) of Used Tyres Recovered in NI for 2010/11 (Information from Survey Returns and Article 44 Data)

Tyre Type	Tyres (Units)	Tyres (Tonnage)
Car	1,546,110	12,214
Light Truck	46,260	1,087
Heavy Truck	893	46
Agricultural	152	19
Unknown	560	4
Total	1,593,974	13,370

6.2.2 Republic of Ireland

A total of 5 questionnaire responses were received from a total of 54 waste tyre recycling operators operating in Republic of Ireland. However, given the lack of information received from this element of the survey data supplied by TRACS and TWM has been used to determine the fate of used tyres by registered waste operators in the Republic of Ireland. Table 6.5 below sets out data on the quantity and related fate of used tyres collected by the waste collectors who are members of TRACS and TWM. The main waste management option is shredding and crumbing which account for 62% of the tyres collected. Export of used tyres as a whole, baled or shredded account for 58% of the tyres collected, of which 60% of this total exported are shredded and crumbed tyres.

Table 6.5 Used Tyres Collected in 2011 by Waste Collectors Registered with the Compliance Schemes¹³

Waste Management Options	TRACS	TWM	Total	Export
Agricultural Use	1,770	188	1,958	0
Other Reuse	327	0	327	0
Shredded & Crumbed	16,584	1,670	18,254	10,139
Exported as a fuel	1,374	0	1,374	1,374
Baled and exported	4,530	0	4,530	4,530
Export as a whole	976	0	976	976
Transfer to another collector	1,921	0	1,921	0
Total	27,482	1,858	29,340	17,019

6.3 Tyre Retreading

Due to the lack of data in survey returns regarding tyre retreading in both Northern Ireland and the Republic of Ireland alternative sources of information have been used to provide an estimate of tyre retreading being undertaken in both jurisdictions.

Northern Ireland

The WRAP Study on the UK Used Tyre Market in 2004, published in 2006, states that 10.3% of tyres are retreaded for reuse. This Study covers England, Scotland, Wales and Northern Ireland.

Given the estimated used tyre arisings, derived earlier in this report of 18,597 tonnes, reuse as retreads are estimated at 1,916 tonnes using the estimate in the WRAP Study, however given that the estimates for reuse as retreads in the Republic of Ireland are thought to be more reflective of the Northern Ireland retread market this estimate is not used in the remainder of this report.

Research, in the WRAP Study on the UK Used Tyre Market in 2004 (published in 2006, has noted that many retreaded tyres manufactured in the UK are exported.

¹³ TRACS Annual Report 2011 and personal communication with TWM.

Republic of Ireland

TRACS reported in its 2011 annual report (p8 http://www.tracsireland.ie/sites/tracsireland.ie/files/docs/Annual_Report_2011_final.pdf) that 0.22% of the total units supplied by its members (2,207,748) were retreaded in 2011. This is equivalent to 4,857 tyres units or 2.2% of heavy goods vehicles supplied.

By applying this assumption to Northern Ireland using the estimated used tyre arisings derived earlier in this report of 1,792,392 units, reuse as retreads are estimated as 3,943 units or 41 tonnes. Given that this value is more reflective of the size of the retread market in Northern Ireland this figure has been used for the remainder of this report.

6.4 Part Worn Tyres

The Defra Used Tyre Working Group (UTWG) conducted a study to quantify the size of the used tyre market and their subsequent recovery. Information was provided by the tyre industry in the UK and included: data on used tyre arisings from tyre replacement activities, data on used tyres from vehicle dismantling activities and an estimate of used tyres recovered from other uses (including dock tenders, silage clamps etc). The Study gathered data for 2009 – 2011 and quantified the proportion of part worn tyres on the market in 2011 to be 37,896 tonnes (or 7.34% of used tyre arisings).

As the behaviour of the tyre market is likely to be similar in Northern Ireland as in the UK as a whole, this assumption for part worns in the UK has been assumed in the mass balance for Northern Ireland in this report. This assumption estimates that part worns account for 1,365 tonnes of used tyre arisings in Northern Ireland.

6.5 Illegally Disposed

6.5.1 Local Authority Response

As part of this Survey Local Authorities were contacted and information was requested on the illegal disposal of used tyres arising in each Local Authority area in both NI and ROI. Information from the Local Authorities' records of incidents of flytipping of used tyres or the use of used tyres in bonfires within the survey period was requested. NI Local Authority responses are included in Appendix G of this report and those from the ROI in Appendix H.

In summary, from the quantitative information in the responses provided by Local Authorities in Northern Ireland it is estimated that 59 tonnes (or 7,402 units) of used tyres are disposed of illegally through flytipping or on bonfires. However, a quantitative response was only received from 11 out of 26 Local Authorities, and by scaling these using the population of each Local Authority to account for all the Local Authorities the illegal disposal estimate for Northern Ireland will equate to 120 tonnes (or 15,045 units) of used tyres. This also equates to approximately 0.65% of the estimated used tyre arisings in Northern Ireland. The calculations undertaken to determine this estimate are set out in Appendix I of this report.

In summary, from the quantitative information in the responses provided by Local Authorities in the Republic of Ireland it is estimated that 28 tonnes (or 3,488 units) of used tyres are disposed of illegally through flytipping or on bonfires. However, a quantitative response was only received from 10 out of 34 Local Authorities and therefore by scaling these using the population of each Local Authority to account for all the Local Authorities the illegal disposal estimate for the Republic of Ireland will equate to 112 tonnes (or 14,152 units) of used tyres. This also equates to approximately 0.29% of the estimated used tyre arisings in the Republic of Ireland. The calculations undertaken to determine this estimate are set out in Appendix I of this report.

6.5.2 Northern Ireland Fire and Rescue Service Response (NIFRS)

RPS contacted the NIFRS and requested quantitative data in order to examine the extent of illegal activity in relation to used tyres, in particular in bonfires from April 2010 to March 2011. NIFRS responded saying that they do not record this type of information and they apologised for being unable to assist in the survey. However it is noted that NIFRS provided data to the Environment Committee in relation to the number of incidents and estimated cost of tyre fires, which is set out in Table 6.6 below.

From Table 6.6 it would appear there are a significant number of incidences where used tyres are being burned each year in Northern Ireland. It is difficult to quantify the units or tonnes of used tyres currently burned as this data is not currently estimated. It would ultimately be very difficult for the NIFRS to estimate the quantities being burned in Northern Ireland unless they were present before the fire was lit.

Table 6.6 NIFRS Recorded Incidents of Tyre Fires and Associated Costs¹⁴

Financial Year	Incidents Attended	Average Cost per Incident	Total Estimated Cost
2011/12	102	£ 2,521	£ 257,142
2010/11	215	£ 2,521	£ 542,015
2009/10	180	£ 2,693	£ 484,740
2008/09	210	£ 2,570	£ 539,700
2007/08	218	£ 2,339	£ 509,902
2006/07	174	£ 2,225	£ 387,150
Total	1,099	£ 14,869	£ 2,720,649

6.6 Reuse

Used tyres have a legitimate reuse function primarily by farmers on silage pits, but also on racetracks, marinas etc without any pre-treatment or reprocessing being involved provided that appropriate authorisations are in place.

6.6.1 Farm Use

The NIEA Water Management Unit was contacted as part of this survey and information requested on the volume of tyres reused on silage pits on farms in Northern Ireland, recorded as part of the Farm Management Inspections Cross Compliance Scheme involving DARD, Water Management Unit and Natural Heritage. No appropriate data was available.

Anecdotal evidence would suggest that farming practices are moving more towards baled silage and therefore the reuse of tyres on silage pits is decreasing. Exemption 17 (Storing agricultural waste intended for recycling or recovery, in a secure place) of the Waste Management Licensing Regulations (Northern Ireland) 2003 allows farms to store 250 tyres provided that they are separately stored and kept on the farmer's own land or land that has the consent of the occupier. In addition, other waste management exemptions also apply to tyres, including Paragraphs 15 and 16 which exempt the manufacture of finished goods from a range of wastes, including rubber and Paragraph 16 exempts the beneficial use of waste, for example, tyres from Waste Management Licensing.

¹⁴ Committee for the Environment, April 2012 - An Interim Report on the Committees Inquiry into Used Tyre Disposal

In addition, the Single Farm Payment Scheme which was introduced by EC Council Regulation 1782 / 2003 replaced most of the crop and livestock payments from 1 January 2005. The new scheme breaks the link between production and support and farmers will have to observe certain conditions (known as Cross Compliance) in return for receipt of direct agricultural support. The Single Farm Payment Scheme form, to be completed by farmers, requires them to indicate and register waste exemptions for agricultural waste tyres which provides NIEA with annual data for farmers who have registered. The 2013 form for this scheme will also include a question to record the number of waste tyres kept on a farm for silage clamps.

Due to the lack of available data regarding tyre reuse on farms for silage clamps, along with other temporary uses such as boat fenders and sports safety barriers, in Northern Ireland alternative sources of information have been used to provide an estimate of tyre reuse of this manner.

The WRAP Study on the UK Used Tyre Market in 2004, published in 2006, states that 0.6% of used tyres are reused for uses such as silage clamps, boat fenders and sports safety barriers. This Study covers England, Scotland, Wales and Northern Ireland, and it is therefore assumed that the percentage of used tyres that are reused for these activities in all jurisdictions is estimated to apply in Northern Ireland alone.

Given the estimated used tyre arisings, derived earlier in this report of 18,597 tonnes, reuse for silage clamps, boat fenders and sports safety barriers will account for 112 tonnes in Northern Ireland. This value would appear very low in comparison to the ROI value of 1,958 tonnes. Therefore for the purposes of this estimation a pro rata of overall tyre arisings has been used to estimate Farm Use. This equates to 942 tonnes.

As detailed in Section 3.2.1, in ROI provision has been made in the Waste Management (Tyres and Waste Tyres) Regulations 2007 to enable a farmer who requires used tyres to anchor silage covering to store up to eight used tyres for every square metre of the floor area of his or her silage pit, without the need to have a waste permit. An example of the quantities permitted is contained in Table 6.7 below.

Table 6.7 Examples of Permitted Tyres for Use in Silage Pits in ROI

Floor Area Width (Metres)	Floor Area Length (Metres)	Floor Area Area (Square Metres)	No of Tyres Permitted
10	10	100	800
10	15	150	1,200
10	20	200	1,600
12	12	144	1,152
12	17	204	1,632
12	22	264	2,112

Farmer registration occurs where the farmer receives tyres from an authorised collector. Registration of farmers is a live process and occurs as it happens as a transaction. There is no target with respect to transactions, but farmers do have limits on the amount of tyres used per square meter of silage pit floor area and on the total number of used tyres on their farms.

Information provided by the compliance schemes, TRACS and TWM, estimated that a total of 1,958 tonnes of used tyres are reused for agricultural purposes, such as for silage clamps. This includes a total of 1,770 tonnes from TRACS members and 188 tonnes from TWM members.

6.7 Landfill Engineering

The WRAP Study on the UK Used Tyre Market in 2004, published in 2006, states that 6% of tyres are used for landfill engineering. This Study covers England, Scotland, Wales and Northern Ireland. Given the estimated used tyre arisings, derived earlier in this report of 18,597 tonnes, reuse for landfill engineering is estimated at 1,116 tonnes using the estimate in the WRAP Study.

6.8 Mass Balance

As set out in Section 2.3, this Study has attempted to use a Mass Balance approach to make an assessment of the quantity of used tyres generated in both Northern Ireland and the Republic of Ireland, and how these used tyres are managed.

A diagram has been presented in Figure 6.1 below illustrating the overall mass balance for the tyres in Northern Ireland and the Republic of Ireland. Analysis of background data and information from the survey returns has estimated the used tyre arisings in Northern Ireland to be 18,597 tonnes in 2010/11 and in the Republic of Ireland to be 38,673 tonnes in 2010.

The Waste Tyre Mass Balance for Northern Ireland and the Republic of Ireland, set out in Figure 6.1 and Figure 6.2 below, also identify through the quantity of unknown waste tyres managed taking into consideration tyre arisings and known collections and management options set out in the report. This has estimated that in Northern Ireland 54% of waste tyre collections are unknown and 9% of management options are unknown. In the Republic of Ireland it is estimated that 24% of waste tyres are managed by unknown collectors.

Figure 6.1 Used Tyre Mass Balance (NI – 2010/11)

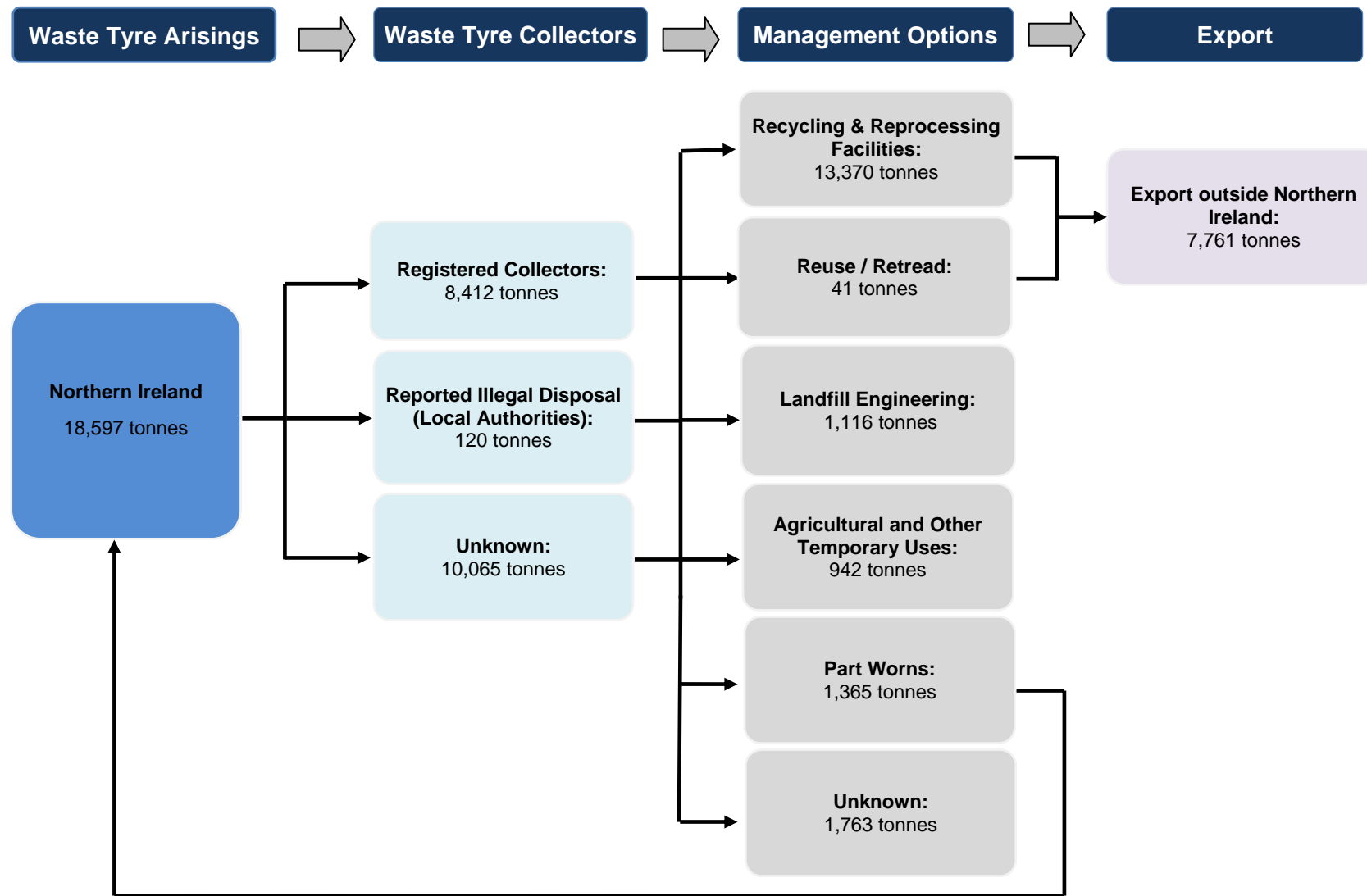
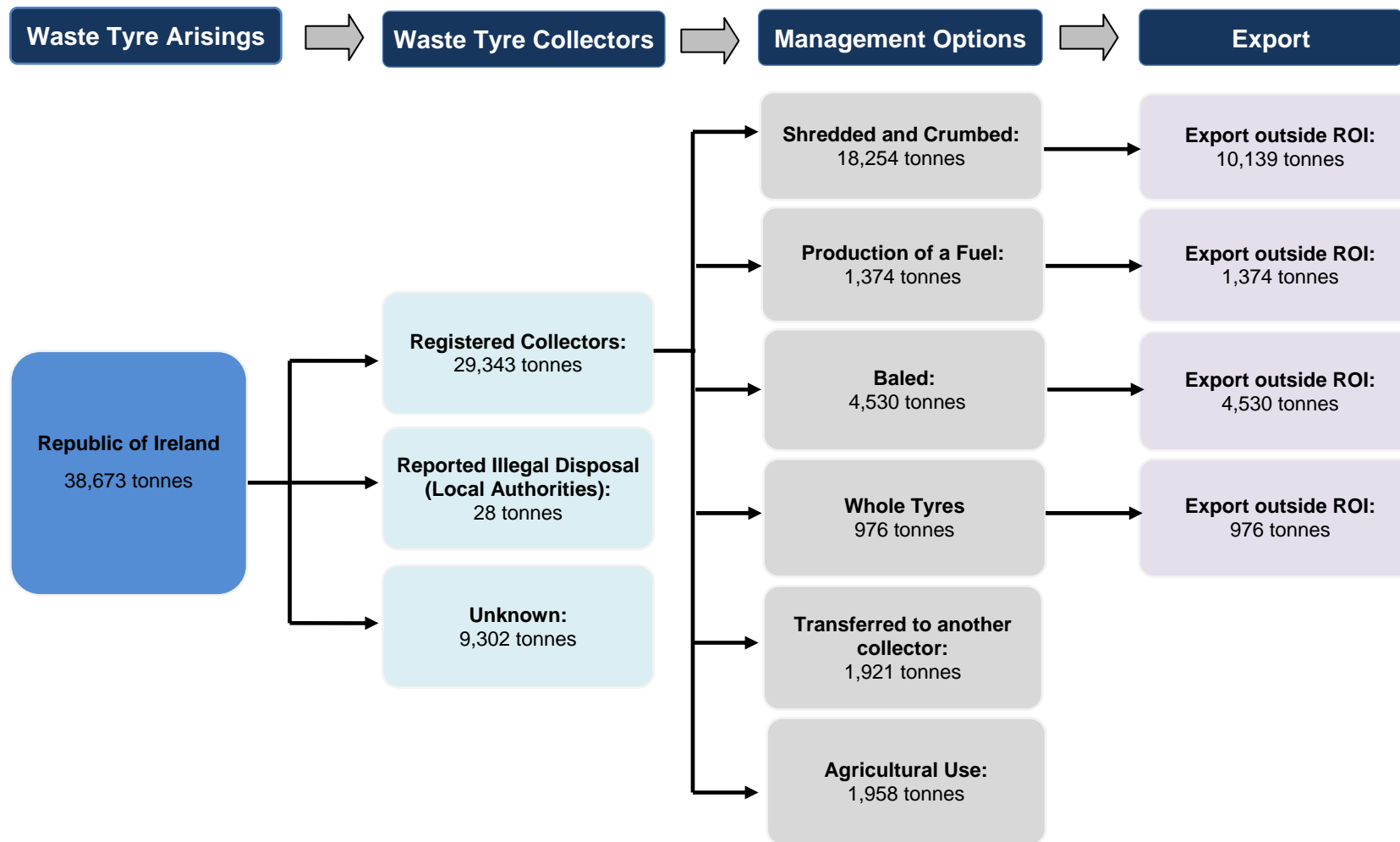


Figure 6.2 Waste Tyre Mass Balance (ROI – 2010)



6.9 Future Trends and Sensitivity

6.9.1 Northern Ireland

Analysis of anticipated future trends in the tyre industry have been undertaken to determine the predicted sensitivity on the results generated in this Study. In particular, analysis has been undertaken of the predicted future trends that will impact upon used tyre arisings in Northern Ireland in the next 3 years, these include:

- The impact of the reduction of spare tyres in cars (assumed to be no new cars to have a full spare tyre, 10% of new cars to have a space saver spare tyre and 90% of new cars with no spare tyres). This is a one off change to spare tyres occurring within the 5 year period;
- Over the last 3 years new car registrations have increased by 3% - it has been assumed that there will be a 1% increase in cars year on year for the full 10 year period;
- Over the last 3 years new HGV registrations have decreased by 8% - it has been assumed that there will be a 8% decrease for 3 years and thereafter will return to a zero growth / stable position;; and
- The impact of a 1% increase in car journeys year on year as set out in the VKT data.

The assumptions above are those of the research team, informed by recent trends, and are not based on any in-depth analysis or projection methodology. They are merely indicative of what the impact of the changes to key parameters would be on the resultant tyres arising estimate and serve to illustrate which parameters have the biggest impact.

Table 6.8 below sets out the estimated changes in tyre tonnages, from the predicted used tyre arisings due to the impact of each of these factors.

Analysis was also undertaken to determine the sensitivity of the results to an increase in tyre life (assumed to be a 10% increase in tyre life from 30,000 miles to 33,000 miles).

Table 6.8 Future Trends Projected in next 5 to 10 years

Change	Tyres (Tonnes) 5 years	Tyres (Tonnes) 10 years
Less Spare Tyres	-676	-676
3% increase in cars	930	1,860
8% decrease in HGVs	-234	-234
VKT car journey increase (1%)	206	413
Total	227	1,363
Sensitivity of Longer Tyre Life		
Longer tyre life 10%	-2,506	-2,506

6.9.2 Republic of Ireland

Annual statistics on registered vehicles has shown a decrease in the majority of vehicles types over the past 3 years. Detailed statistics for 2008 to 2010 would indicate that the reduction in registered vehicles is linked to the economy in Ireland. Analysis has been undertaken of the predicted future trends that will impact upon used tyre arisings in Republic of Ireland in the next 5 to 10 years, these include:

- Over the last 2 years car registrations have decreased by almost 3% - it has been assumed that this trend will remain constant over the next 3 years and thereafter will return to a zero growth / stable position;
- Over the last 2 years HGV registrations have decreased by almost 7% - it has been assumed that this trend will remain constant within the next 3 years and thereafter will return to a zero growth / stable position; and
- Over the last 2 years total registrations have decreased by over 3% - it has been assumed that this trend will remain constant over the next 3 years and thereafter will return to a zero growth / stable position

Table 6.9 below sets out the estimated changes in tyre tonnages from the predicted used tyre arisings due to the impact of the above. It is therefore projected that this will lead to a decrease in used tyre tonnage of 1,900 tonnes using the assumptions provided above. Note that the 10 year prediction is the same as the 5 year projection as a zero growth / decrease has been assumed after 3 years.

Table 6.9 Future Trends Projected in next 5 to 10 years

Change	Tyres (Tonnes) 5 Years	Tyres (Tonnes) 10 years
Cars	-1,000	-1,000
HGV's	-1,000	-1,000
Total for all Vehicles	-1,900	-1,900

7 Survey Feedback

7.1 Barriers Faced in the Management of Used Tyres

A total of 50 questionnaires were returned in Northern Ireland with fifteen of these businesses providing comments on better tyre management in Northern Ireland. A total of 51 questionnaires were returned from businesses in Republic of Ireland with sixteen of these businesses providing comments on better tyre management in the Republic of Ireland. An outline of the comments returned is detailed below under the following headings:

- Permitting
- Producer responsibility initiative
- End of waste criteria
- Enforcement
- Management of used tyres
- Reprocessing
- Increased public / customer awareness

A number of responses were received concerning their opinion of the barriers faced in the management of used tyres and their opinion of how used tyres are managed. These responses are detailed in Tables 7.1 and 7.2.

Table 7.1 Survey Response – Barriers Faced in the Management of Used Tyres

In your opinion, what are the main barriers that you face in the management of used tyres?						
Replies to this Question	Retailers		Recyclers	Collectors and Recycling Operators	Permit Holders	Collector
	NI	ROI	NI	ROI	ROI	NI
	22	35	8	5	11	1
Financial	12	18	5	4	5	1
Knowledge	5	2	1	1	3	1
Facilities	6	3	2	1	2	1
Legislation	5	10	3	2	1	1

Table 7.2 Survey Response – Management of Used Tyres

In your opinion, are used tyres in NI or the ROI managed: Very Well, Well, Adequately or Poorly?						
Replies to this Question	Retailers		Recyclers	Collectors and Recycling Operators	Permit Holders	Collector
	23	35	7	5	11	1
	NI	ROI	NI	ROI	ROI	NI
Very well	2	1	2	0	1	0
Well	4	5	1	0	0	0
Adequately	12	13	1	1	1	0
Poorly	5	12	3	2	5	1

7.2 Permitting

7.2.1 Northern Ireland

The brief comments returned by companies within the 'Tyre Collector' category raised issues associated with the regulation, monitoring and enforcement of illegal operations within their industry as well as the perceived lack of an effective prosecution policy for offending operators.

Likewise the issue of licensing and permitting arose from consultation with the UK Tyre Recovery Association. They stressed that their members adhere to the law for the collection, storage and reprocessing of used tyres but the system allows for new applicants to begin collection of used tyres with a waste carrier's licence (which is granted quicker) while awaiting for the decision on the facility waste management licence. In the interim the unscrupulous operator may be taking advantage of this delay in the system. They also commented that it was too easy to obtain an exemption to waste management licensing. It was mentioned that it took up to one year for the licensing authority to come and inspect a site and that this was too long.

The Department and NIEA through their Better Regulation Programme, have initiatives to help deliver more targeted, risk-based regulation and enforcement. However, the comments raised by the survey respondents along with the quantities of used tyres estimated to be managed outside the licensed system reinforce the need for these improvements and appropriate investment to continue. However, this should be balanced with the availability of resources.

One 'Tyre Retailer' responded with concern regarding the large number of retailers selling second hand / worn tyres outside of the tyre retail sector in Northern Ireland. Once again the issue of permitting arose as the tyre retailer also commented that these companies operate with ease outside of the control of permitting and regulation. It should be noted however, that DOE do not have regulatory powers relating to the use of second-hand or part worn tyres as they are not classified as a waste, and managed within the waste licensing regime.

7.2.2 Republic of Ireland

TRACS commented that it was considered too easy to get a permit to collect used tyres in ROI. On the 1st of February 2012, Offaly County Council was designated as the Nominated Authority for the processing of all new waste collection permit applications and review/renewal of applications. It was felt that this recent centralisation of the permitting process to this single Nominated Authority, known as the National Waste Collection Permit Office (NWCPO) could possibly assist in this area in long-term but that more could be still be done to improve the situation, such as background and data checks.

A number of Retailers within ROI felt that there should be one central body in charge of all tyre operations with monitoring for smaller operations. These companies also believed that further education and fiscal incentives should be made available for companies that wish to operate within this area.

A number of Retailers also stated that the number of Waste Collection Permits being issued should be reviewed. A reduction in the number of permits being granted would allow for better regulation and monitoring.

7.3 Producer Responsibility Initiative

7.3.1 Northern Ireland

No companies within Northern Ireland provided feedback associated with producer responsibility from the survey responses however the TRA stated that they thought the free market approach in tandem with the best practice such as the Responsible Recycling Scheme with more retailers in NI signing up to the scheme could be appropriate. They would appear to be not in favour of a full scale Producer Responsibility Initiative (PRI) stating that the plethora of tyre brands (over 200) in circulation at any time in the UK market would be disadvantages to a PRI Scheme. On balance, however, it should be noted that PRI schemes operate effectively for other wastes where multiple brands are in circulation (e.g.: WEEE).

The TRA provided details on their Responsible Recycler Scheme (RRS) which was established in 1999 to promote more robust standards in the collection and disposal of end-of-life tyres and to help eradicate illegal action and the rogue operators who drive it in the UK. The TRA reports that the RRS manages to achieve 95% recovery having introduced key elements of best practice which includes auditing of members on an annual basis for compliance, and traceability audits. It also provides their findings to the Environment Agency (EA), thereby allowing the EA to concentrate on other areas and on the percentage of the industry that are not part of the RRS that may possibly be abusing the system. Only two collectors in Northern Ireland are members of the TRA and partake in the RRS scheme.

RPS also consulted with a representative from DTI who chairs the Used Tyre Working Group in the UK. It was confirmed during this consultation that figures for used tyre arisings for each devolved administration are not available. The figures for tyres arising in the UK are also not further broken down by geographic area. The UK figures for used tyres are derived from data provided from the main industry associations and the key players that provide a good share of the market spread in the UK. The representative from the Used Tyre Working Group also stated that the figures in relation to the management of used tyres are difficult to obtain unless the companies are compelled to provide these figures.

DOE is currently undertaking work to investigate the feasibility of implementing a voluntary best practice scheme or a mandatory compliance scheme for used tyres in Northern Ireland. The implementation of such a scheme may place additional reporting obligations on tyre producers and suppliers along with licensed tyre collectors and licensed recycling facilities for used tyres, and could therefore improve the availability and reliability of data produced in relation to both used tyre arisings and how these are managed.

7.3.2 Republic of Ireland

During discussions with TRACS they also commented that although not necessary that the same PRI scheme is implemented in Northern Ireland as in the Republic of Ireland they commented that the approach in both jurisdictions should be consistent. It should be stressed that this is currently the topic of further study being conducted by DECLG for the review of Producer Responsibility Initiatives in ROI.

One tyre Retailer believed that consideration should be given to the inclusion of the disposal charge in the price of the tyre.

7.4 End of Waste Criteria

7.4.1 Northern Ireland

A used tyre Collector's response suggested consideration should be given to more innovative and alternative methods of tyre recycling in NI.

A used tyre Recycler believed a quality protocol developed for England, Scotland and Wales should be applied to Northern Ireland.

It should be noted that the Quality Protocol for Tyre Derived Rubber Materials that has been implemented in England, Scotland and Wales is intended to be implemented in Northern Ireland following a satisfactory review. A copy of the Quality Protocol currently implement in England, Scotland and Wales can be found at: http://www.environment-agency.gov.uk/static/documents/Business/Quality_protocol_for_tyre-derived_rubber_materials_.pdf

The Tyre Derived Rubber Materials Certification Scheme helps producers demonstrate to their customers and their compliance with PAS 107 (Specification for the Manufacture and Storage of Size reduced Tyre Materials) and the TDRM Quality Protocol. In addition, in relation to End of Waste Criteria for used tyres PAS 108 – Specification for Production of Tyre Bales for Use in Construction provides has been developed which provides a specification that can be adopted by suppliers for producing tyre bales such that potential customers will be assured that they are procuring a construction material of consistent and verifiable quality.

7.4.2 Republic of Ireland

TRACS commented that further clarify is required on the end of waste criteria. The Waste Management (Tyres and Waste Tyres) Regulations 2007 do not define a "waste tyre" but refer to the primary legislation Waste Management Act 1996 (as amended). A tyre becomes a waste is, as defined in Section 4 (1) (a) of the Act, the holder discards or intends to, or is required to discard it. From our review it would appear that at present end of life tyre-derived products are required to be managed as waste, at the stage when they are going to be recycled or remanufactured. To be considered a product output from tyre recovery facilities would have to meet Article 6 of WFD. As there is no European regulation on end of waste for tyres a decision would have to made on a case by case basis by the EPA.

Concerns regarding current processes within this area were raised by a Tyre Collector who believed that consideration should be given to the provision of incentives to encourage research and development in tyre recycling technologies.

7.5 Enforcement

7.5.1 Northern Ireland

A number of respondents said that they felt there was a need for improved enforcement in Northern Ireland but the responses did not elaborate further.

The Tyre Recovery Association also commented on the need for targeted enforcement and explained how their RRS worked in a way in England that allowed the EA to free up resources and concentrate on companies that the TRA identified as operating outside licensing and permitting regulations.

As noted previously in this Section of the Report, the Department and NIEA, through their Better Regulation Programme, have taken forward a number of initiatives to ensure that environmental regulation and enforcement in Northern Ireland is more targeted and risk-based and creates a level playing field. However, the comments raised by the survey respondents along with the quantities of used tyres estimated to be managed outside the licensed system reinforce the need for these improvements and appropriate investment to continue. However, this should be balanced with the availability of resources.

7.5.2 Republic of Ireland

TRACS commented that the lack of enforcement has led to stockpiling. A number of tyre retailers have commented on illegal stockpiling. They have suggested that there is a need for an effective prosecution policy for the illegal stockpiling of used tyres and that consideration should be given to reducing the number of used tyre collectors and effective monitoring in support of this.

Retailers also recommended that the disposal fee should be included in the price of tyres entering the county.

A number of comments were received from retailers that said there was a need for improved enforcement. A number of comments were received in relation to the lack of enforcement was leading to an unfair playing field and that *“all waste tyre management should be enforced universally and totally”*.

Another suggestion was to *“financially incentivise the recovery and recycling of tyres in a practical manner and heavily penalise those that do not dispose or recover their tyres in an authorised manner”*.

7.6 Management of Used Tyres

7.6.1 Northern Ireland

Several used tyre collectors concerned with the general management of used tyres recommended that the DOE should provide more advice and information on tyre management and should co-ordinate with tyre collectors more closely.

Further concerns included the overall cost of used tyre management as well as the recommendation that the disposal fee should be included in the price of tyres. It was also highlighted that a number of garages are more likely to seek out the cheapest disposal route regardless of compliance.

Issues were raised by tyre retailers about the overall cost of tyre disposal as well as restricting the circulation of part worn tyres onto the market. One tyre retailer commented that *“regular monitoring of all tyre retailers in Northern Ireland should be undertaken to ensure they have their duty of care waste transfer notes and proper paper trail”*.

As stated previously in this Section of the report, DOE and NIEA are currently undertaking work to investigate the feasibility of implementing a voluntary best practice scheme or a mandatory compliance scheme for used tyres in Northern Ireland. The implementation of such a scheme may increase the reporting requirements of the tyre industry in Northern Ireland, and therefore the availability and monitoring of data on used tyres produced and how these are managed. In addition, the implementation of a compliance scheme should also provide those operators in the tyre industry with advice and guidance on tyre management.

7.6.2 Republic of Ireland

Several tyre collectors recommended that the EPA should provide more advice and information on tyre management. In addition tyre recyclers suggested that there should be a provision of financial incentives to increase tyre recovery and recycling with fines imposed on companies that do not dispose of tyres in a safe and compliant manner.

Tyre retailers in the ROI believed that more resources should be made available for education in the area of tyre management with a more proactive leadership role required by Government Agencies. This should include an awareness campaign focusing on the importance of used tyre disposal and procedures and costs involved with more knowledge based resources made available.

7.7 Reprocessing

One respondent on the island of Ireland mentioned the limited reprocessing facilities available north and south and that many tyres are required to be shipped to the United Kingdom and further afield. In contrast, however, there is anecdotal evidence that there may be spare capacity within the reprocessing industry on the island of Ireland.

A number of tyre retailers believed that further education and fiscal incentives should be made available for companies that wish to operate within the tyre waste management industry and one provided the example that incentives, aimed to encourage facilities to explore new technologies for recycling tyre derived components, would be welcomed.

One respondent commented that used tyres should be used as a fuel source in Northern Ireland and thought that NIEA and local authorities *“were not prepared to take a chance on the useable energy that is being used in GB and Europe. Our councils and NIEA seem to have no forward thinking to use this valuable fuel.”*

7.8 Increased Public / Customer Awareness

In ROI one respondent suggested that there should be a more proactive customer knowledge campaign in place so that the customer knows the importance of proper used tyre disposal and the procedures and costs involved with the same. The respondent elaborated to say that currently tyre consumers *“do not appreciate or fully understand the necessity of correct tyre disposal and think that any tyre disposal charge is a ‘made-up’ extra tariff”*.

8 Conclusions

This section of the report sets out the overall conclusions to the Study taking into consideration the overall aims and objectives of the project set out in Section 1.3.

8.1 Used Tyre Arisings

Used tyre arisings data for both Northern Ireland and the Republic of Ireland has been generated from published statistics in both jurisdictions to develop a baseline of used tyre arisings. This was necessary due to the initial poor response to the survey, combined with the lack of sufficient matches of employee numbers between the survey population and the IDBR database. This database was requested from DETI to determine employee numbers for each business and therefore determine appropriate scale up factors to quantify the entire survey population from the survey results generated. After a matching process there were a significant number of businesses that did not have a corresponding number of employees, and therefore it was not possible to derive a scale up factor for the tyre retailers section of the survey, and it was therefore considered appropriate to use an estimation of used tyre arisings from an analysis of Licensed Vehicle Statistics as an alternate source of data.

8.1.1 Northern Ireland

It is assumed that used tyre arisings can be approximated based on vehicle registrations, information which is available from the Driver and Vehicle Agency (DVA). These figures have been used to estimate the quantity of used tyres produced taking into consideration key assumptions for the average weight of a tyre, seasonality in car buying, an adjustment for spare tyres, the average number of tyre per vehicle, tyre wear and an estimate for average tyre life. Table 8.1 below provides an estimate of used tyres arisings in Northern Ireland in 2010/11.

Table 8.1 Used Tyre Arisings (Units and Tonnage) in Northern Ireland in 2010/11

Taxation Group	Tyres (Units)	Tyres (Tonnage)
Private Light Goods	1,567,735	12,385
Motorcycles, Scooters & Mopeds	8,919	45
General (HGV) Goods	67,721	2,921
Bus	7,534	384
Agricultural / Tractors	14,712	1,868
Other	2,971	23
Crown	10,925	86
Exempt	111,876	884
All Vehicles	1,792,392	18,597

These calculations estimate that there is a total of 18,597 tonnes of used tyres in Northern Ireland in 2010/11 which equates to approximately 1.8 million units of tyres.

The previous Used Tyre Survey carried out in Northern Ireland in 2002 determined that there was a total of 16,100 tonnes (or 1,738,117 units) of used tyres in Northern Ireland in 2000. This represents an increase in the tonnage of used tyres of 15.5% in the ten year period since the previous survey was completed. Future trend analysis would suggest tyre arising remaining stable albeit with a slight increase in the next 5 to 10 years.

8.1.2 Republic of Ireland

Tyre arisings for the Republic of Ireland are calculated by combining new tyres imported directly and tyres imported on vehicles. A summary of these figures are set out in Table 8.2 below.

Table 8.2 Tyre Arisings in ROI, 2010

Category	Used Tyre Arisings (Units)	Used Tyre Arisings (Tonnes)
1	2,376,724	25,183
2	86,283	9,691
3	19,910	111
4	42,350	2,048
5	84,815	417
6	26,371	506
7	326,040	716
Total	2,962,493	38,673

These calculations estimate that there is a total of 38,673 tonnes of used tyres in the Republic of Ireland in 2010.

8.2 Used Tyres Management Data

8.2.1 Northern Ireland

Collectors Data

Data for waste collectors in Northern Ireland has estimated that approximately 8,412 tonnes of used tyres were collected by licensed waste collectors in 2010/11. As set out in Table 4.2, a total of 23 used tyre collectors operating in Northern Ireland were surveyed as part of this Study, from information provided by the Northern Ireland Environment Agency (NIEA) on those businesses operating as Registered Carriers licensed to collect used tyres in Northern Ireland, as well as from information provided on Waste Transfer Notes gathered during the Article 44 exercise. A total of 16 responses were received from registered waste collectors in Northern Ireland. These responses included 3 from survey questionnaires and 13 from Article 44 data. The data received from waste collectors was considered robust as it avoided the potential for double counting of results that may be encountered with other elements of the waste industry.

However, during analysis it was advised by DOE and NIEA that a number of these businesses were not active used tyre collectors during the survey period and were operating as tyre retailers, ATFs and one was an unregistered carrier. A total of 18 tyre collectors were therefore determined as the population for this element of the survey. There were 15 usable responses from these 18 businesses.

These figures were then used for subsequent analysis of used tyre collection data in Northern Ireland. The 15 responses received have been factored up to the total population of 18 active waste collectors to provide results for this element of the survey. A linear pro-rata of the data was carried out as by combining the results of the questionnaire element of the survey and the Article 44 responses over 80% of the data for this element of the survey had been obtained. This method of factoring up the data was utilised due to a lack of data for each company that could have been used to carry out a scale up based on the profile of the sector, such as employee numbers or turnover. Attempts were made to obtain employee numbers for each business surveyed from the Inter Departmental Business Register (IDBR) database administered by DETI, survey returns and telephone calls to each company. However, following these attempts to obtain employee numbers there were still a number of businesses for which this data could not be obtained and a scale up factor for the whole sector was not able to be calculated. The method of carrying out a linear pro-rata of the data obtained was therefore considered to be appropriate for this element of the survey.

Table 8.3 Quantity (Units and Tonnage) of Used Tyres Collected in NI for 2010/11 (Information from Survey Returns and Article 44 Data)

Tyre Type	Tyres (Units)	Tyres (Tonnage)
Car	893,084	7,055
Light Truck	40,064	942
Heavy Truck	6,734	344
Agricultural	395	50
Unknown	2,623	21
Total	942,900	8,412

The survey also gathered data from Authorised Treatment Facilities (ATFs) used for the disposal of End of Life Vehicles, including tyres. A total of 7 responses were received from ATFs in Northern Ireland from survey questionnaires. A total of 67 ATFs in Northern Ireland were surveyed as part of this Study, using information provided by the Northern Ireland Environment Agency (NIEA), 2 ATFs were understood to be no longer operational leaving a total population for ATFs of 65.

As the profile of this sector is unknown it has not been possible to factor the raw data obtained to accurately reflect all the ATFs in Northern Ireland. Table 8.4 below summarises the data provided by the respondents in this element of the survey.

Table 8.4 Quantity (Units and Tonnage) of Used Tyres Collected at ATFs in NI for 2010/11 (Information from Survey Returns)

Tyre Type	Tyres (Units)	Tyres (Tonnage)
Car	961	7.6
Light Truck	100	2.4
Heavy Truck	400	20.4
Agricultural	0	0
Unknown	2,000	15.8
Total	3,461	46.2

The survey results therefore estimate that a total of 8,412 tonnes (942,900units) of used tyres are collected by Registered Carriers and at ATFs in Northern Ireland.

Recycling Operators

Data for recycling operators in Northern Ireland has estimated that approximately 13,370 tonnes of used tyres were recovered by licensed waste operators in 2010/11. As set out in Table 4.2, a total of 7 waste tyre recycling operators in Northern Ireland were surveyed as part of this Study, from information provided by the Northern Ireland Environment Agency (NIEA) on those businesses operating as licensed waste management sites, as well as from information provided on Waste Transfer Notes gathered during the Article 44 exercise. A total of 5 responses were received from licensed waste tyre recycling operators in Northern Ireland. These responses included 3 from survey questionnaires and 2 from Article 44 data. Table 6.4 summarises the data provided by the respondents in this element of the survey. The 5 responses received have been factored up to the total population of waste tyre recycling operators in Northern Ireland to achieve results for this element of the survey, as set out in Table 8.5 below.

Although there are few businesses in this sector, data were received from over 70% (5 out of 7) of the population. Given that the response rate was over 70% and also that it was not possible to obtain information relating to business sizes (which would otherwise have enabled a more sophisticated rating up calculation to be carried out), this data was rated up linearly, without taking account of company sizes or profiles. A number of approaches were taken, unsuccessfully, to capture information on company sizes, as set out in section 6.1.1

Table 8.5 Quantity (Units and Tonnage) of Used Tyres Recovered in NI for 2010/11 (Information from Survey Returns and Article 44 Data)

Tyre Type	Tyres (Units)	Tyres (Tonnage)
Car	1,546,110	12,214
Light Truck	46,260	1,087
Heavy Truck	893	46
Agricultural	15	19
Unknown	560	4
Total	1,593,838	13,370

The survey results therefore estimate that a total of 13,370 tonnes (1.59 million units) of used tyres are recovered by Licensed Operators in Northern Ireland.

The results derived for the used tyre arisings, collectors and recycling operators show variation in the tonnages estimated. These differences may be a result of the following factors as set out below:

- There is potential for double counting among recycling operators which may lead to the tonnage estimated to be processed to be higher than the actual tonnage;
- The differences in tonnage between each element of the survey may also be attributed to those tyres arising that are managed outside the licensed regime. This study has attempted to consider this element of the tyre industry by developing a mass balance which has estimated the tonnage of illegal disposal in Northern Ireland.

8.2.2 Republic of Ireland

Collectors Data

Information provided by compliance schemes, TRACS and TWM, has been used to develop the overall used tyres collected tonnage for the Republic of Ireland. Table 8.6 below sets out the data received from both compliance schemes for used tyres collected by their members of which 29,343 tonnes were estimated to be collected in 2011.

Table 8.6 Used Tyres Collected in 2011 by Waste Collectors Registered with the Compliance Schemes

Description	TRACS		TWM
	Tyres Collected (Units)	Tyres Collected (Tonnes)	Tyres Collected (Tonnes)
Car / Van	2,299,778	23,582	1,858
Truck	37,669	1,622	
Motorcycles	339	2	
Agri / Industry	843	42	
Construction	0	0	
NES (Retreads and Used Pneumatic Tyres)	45,065	2,237	
Total	2,383,694	27,485	1,858
Total Tyres Collected in ROI			29,343

Recycling Operators

Information provided by compliance schemes, TRACS and TWM, has been used to develop the overall used tyres recovered tonnage for the Republic of Ireland. Table 8.7 below sets out the data received from both compliance schemes for used tyres recovered by their members in 2011. The main waste management option is shredding and crumbing which accounts for 62% of the tyres collected. Export of used tyres as a whole, baled or shredded account for 58% of the tyres collected.

Table 8.7 Fate of Used Tyres collected in 2011 by waste collectors registered with the compliance schemes¹⁵

Waste Management Options	TRACS	TWM	Total	Export
Agricultural Use	1,770	188	1,958	0
Other Reuse	327	0	327	0
Shredded & Crumbed	16,584	1,670	18,254	10,139
Exported as a fuel	1,374	0	1,374	1,374
Baled and exported	4,530	0	4,530	4,530
Export as a whole	976	0	976	976
Transfer to another collector	1,921	0	1,921	0
Total	27,482	1,858	29,340	17,019

8.3 Used Tyre Mass Balance

As set out in Section 6.6 of this report, a mass balance approach has been used to provide an assessment of the quantity of used tyres generated in both Northern Ireland and the Republic of Ireland, and how these used tyres are managed. By using this approach, the Study has used the data generated both from the survey process and background information to estimate the quantity of used tyres managed outside the regulatory system in both Northern Ireland and the Republic of Ireland..

Used tyres managed outside the licensing regime in Northern Ireland and the Republic of Ireland are illustrated in the mass flow diagram in the “Unknown” boxes. These tyres arise at two points in the tyre mass flow, firstly at the collection stage where they are either collected by unlicensed operators, fly tipped or illegally disposed. Secondly, they can also arise at the management stage where the tyres are managed by illegal operators or be subject to fly tipping or illegal disposal.

8.4 Conclusions from the Open Ended Survey Questions

8.4.1 Northern Ireland

Analysis of the survey responses received indicated a number of key themes from the comments received:

¹⁵ TRACS Annual Report 2011 and personal communication with TWM.

- **Permitting**

The key theme of responses regarding permitting and licensing, from both waste operators in Northern Ireland, and from consultation with the UK Tyre Recovery Association, was that respondents indicated that there were opportunities within the waste management licensing and permitting system for unscrupulous operators to take advantage.

These opportunities included operators being able to begin collection of used tyres under a waste carrier's licence while awaiting the decision on a waste management licence, an exemption to waste management licensing was too easy to obtain and site inspections did not occur regularly enough

As noted previously in this Section of the Report, the Department and NIEA, through their Better Regulation Programme, have taken forward a number of initiatives to ensure that environmental regulation and enforcement in Northern Ireland is more targeted and risk-based and creates a level playing field.. However, the comments raised by the survey respondents along with the quantities of used tyres estimated to be managed outside the licensed system reinforce the need for these improvements and appropriate investment to continue. However, this should be balanced with the availability of resources.

- **Producer Responsibility Initiative**

No waste operators provided feedback on producer responsibility initiatives however, consultation with the Tyre Recovery Association indicated that an appropriate system in Northern Ireland could be the free market approach in tandem with best practice scheme, such as the Responsible Recycling Scheme. Currently only two used tyre collectors in NI are members of the TRA and participate in the Responsible Recycling Scheme established in 1999 to promote more robust standards in the collection and disposal of end of life tyres. Consultation with the TRA indicated that they did not appear to be in favour of the implementation of a full scale Producer Responsibility Initiative (PRI).

DOE are currently undertaking work investigating the possibility of the implementation of a voluntary best practice scheme or a mandatory compliance scheme for used tyres in Northern Ireland. If such a scheme were to be implemented it is expected that it could lead to improvements in the availability and reliability of data produced in relation to both used tyre arisings and how these are managed.

- **End of Waste Criteria**

Survey respondents have indicated that more consideration should be given to more innovative and alternative methods of tyre recycling in Northern Ireland. In addition, it was also suggested that a quality protocol developed for tyre derived rubber for England, Scotland and Wales should also be applied to Northern Ireland.

It should be noted that the Quality Protocol for Tyre Derived Rubber Materials that has been implemented in England, Scotland and Wales is intended to be implemented in Northern Ireland following a satisfactory review. PAS107 and PAS108 also provide specifications that can be adopted by suppliers such that potential customers will be assured of the quality of the end product produced.

- **Enforcement**

Survey respondents have indicated that there was a need for improved enforcement in Northern Ireland but this was not elaborated on further in the survey responses. Consultation with the Tyre Recovery Association commented on the need for targeted enforcement of those companies that have been identified as operating outside licensing and permitting regulations.

The Department, through their Better Regulation Scheme, have been working towards improvements in the regulation and enforcement systems. These improvements and appropriate investment need to continue. However, this should be balanced with the availability of resources.

- **Management of used tyres**

Survey respondents commented that DOE should provide more information and advice on the management of used tyres. In addition, several respondents commented that they had concerns regarding the overall cost of tyre management with it being noted that a number of garages are more likely to seek out the cheapest disposal route regardless of compliance. The issue of restricting the circulation of part worn tyres onto the market was also raised by a number of respondents.

DOE are currently undertaking work investigating the possibility of the implementation of a voluntary best practice scheme or a mandatory compliance scheme for used tyres in Northern Ireland, which would improve the availability and reliability of data produced in relation to both used tyre arisings and how these are managed. In addition, the implementation of a compliance scheme should also provide those operators in the tyre industry with advice and guidance on tyre management.

- **Reprocessing**

Many of the responses received commented on the lack of tyre reprocessing facilities in NI and RoI. In addition, respondents commented on the need for incentives to be made available to companies who wish to explore the use of new technologies for recycling tyre derived components.

Where appropriate, the findings of these open ended questions have been incorporated into the overall study recommendations set out in the following section of this report.

8.4.2 Republic of Ireland

- **Permitting**

A number of respondents commented on the issue of waste collection permits and thought there were problems with this system. However, they commented that the introduction of the centralised body which has the responsibility of issuing waste collection permits into a single Nominated Authority known as the National Waste Collection Permit Office (NWCPO) may assist in improving the situation.

- **Producer Responsibility Initiative**

TRACS commented that although not necessary that the same PRI scheme is implemented in Northern Ireland as in the Republic of Ireland they commented that the approach in both jurisdictions should be consistent. It should be considered that this is currently the topic of further study being conducted by DECLG for the review of Producer Responsibility Initiatives.

- **End of Waste Criteria**

Comments noted that further clarity is required on end of waste criteria. These comments are in particular related to when a tyre becomes a waste and this will subsequently mean that tyres are to be managed.

- **Enforcement**

Survey respondents have commented that there was a need for improved enforcement, as it was considered that the lack of enforcement was leading to both stockpiling of tyres and unfair playing field for those in the tyre industry.

- **Management of Used Tyres**

Survey respondents commented that EPA should provide more information and advice on the management of used tyres, through the implementation of an education campaign.

In addition, tyre recyclers suggested that there should be a provision of financial incentives to increase tyre recovery and recycling with fines imposed on companies that do not dispose of tyres in a safe and compliant manner.

- **Reprocessing**

Many of the responses received commented on the lack of tyre reprocessing facilities in NI and RoI. In addition, respondents commented on the need for incentives to be made available to companies who wish to explore the use of new technologies for recycling tyre derived components.

- **Increased Public / Customer Awareness**

Survey respondents commented that there should be a more proactive customer knowledge campaign in place so that the customer knows the importance of proper waste tyre disposal and the procedures and costs involved with the same.

9 Recommendations

A number of opportunities for improvement in the tyre industry in Northern Ireland and the Republic of Ireland have been identified in relation to data management and reporting and the management of used tyres. These recommendations are set out below. It should be noted that further recommendations for ROI will be developed as part of the review of the Producer Responsibility Initiatives.

DoECLG are undertaking a review of the Producer Responsibility Initiative (PRI) Model in Ireland. The overall aim of the review is to assess the nature and level of the challenges which are currently facing the existing PRIs and to prepare these schemes to meet future domestic and EU recycling targets. In relation to tyres, the review will examine all aspects of the current system and recommendations will be developed to improve its operation and ensure that used tyres are managed according to best environmental practice.

9.1 Data Collection, Management and Reporting

The availability of data on the on each element of the tyre industry (retailers, collectors and re-processors) was a key obstacle faced in this Study. For example, there was uncertainty regarding the complete list of businesses operating in each sector which provided difficulties in the analysis of survey results achieved. Detailed information on the difficulties encountered are set out in Section 6 of this report.

In order to overcome these difficulties a system should be developed that will ensure that appropriate records on each business operating in each sector of the tyre industry are recorded.

Collation and analysis of data relating to used tyres require a certain level of expertise and knowledge of the waste industry. There is a need to understand waste flows, the changing nature of waste, its fate (reuse, recycling, recovery and disposal). There is potential for double counting (e.g. when waste is sent from one facility to another) and misclassification.

9.1.1 Northern Ireland

1. Data Reporting – Producers and Suppliers

Data in relation to tyres and used tyres could potentially be collected from a number of sources, namely; producers, suppliers, used tyre collectors, authorised treatment facilities and licensed recycling facilities.

There was incomplete information on the whole industry to enable confident predictions to be made of the waste arising.

In order to improve the robustness of used tyres arising in Northern Ireland it is recommended that consideration be given to placing additional obligations on producers and suppliers in terms of the data they are required to report. This would improve the prospect of higher quality data being available from the industry. The form of an additional reporting requirement could involve the use of either a voluntary best practice scheme or a mandatory compliance scheme.

Any considerations in relation to a mandatory compliance scheme would be subject to further review and consultation with stakeholders before being progressed further. Within this context there may be merit in adopting a similar approach to RoI if a mandatory scheme was considered appropriate, as this may be beneficial to organisations which operate in both jurisdictions.

Given the potential of an obligation to impact on businesses an alternative approach could be for a central government organisation to determine a profile for the tyre producer / supplier industry and subsequently to undertake survey visits to a sub sample of representative businesses. This could be undertaken in such a manner as to allow projections to be made within acceptable levels of confidence.

2. Data Reporting – Collectors, Authorised Treatment Facilities and Licensed Recycling Facilities

At the point of which a tyre becomes waste it is normal practice that the tyre will be collected by organisations which are registered with the NIEA and permitted to transport waste. Whilst these collectors are not obliged to report the quantities or tonnages of tyres collected, they are required to produce and retain waste transfer notes. Given the current quantum of paper work produced as a result of the transfer note system, it would be inappropriate to attempt to utilise this information to produce reliable waste data.

It should be noted that, NIEA have recently undertaken an exercise to collect all of this data under an Article 44 Notice, a portion of which was analysed during this Study. However, given the volume of data this is a time consuming exercise which would not be practical to be repeat regularly.

The adoption of an electronic transfer note system by producers and collectors would be helpful. The EU Life+ funded electronic Duty of Care (eDOC) project is due to roll out such a system across the UK, including in Northern Ireland by 2014. Some of the objectives of this project include improving the quality and quantity of waste data. However, the system will be run on a voluntary basis (operators will still be able to use the old paper based waste transfer notes if they choose to do so) and it is understood that it will not operate in ROI. The system does, however, offer the potential to improve the overall understanding of the arisings and management of used tyres in Northern Ireland

In order to ensure that all collections are made by appropriate organisations, it is important that tyre retailers are made aware of their obligations under duty of care to ensure that only NI registered carriers are used.

Licensed recycling facilities in NI have an obligation to provide quarterly returns to the NIEA on the tonnages of waste going into and out of their facilities. However there is the potential for some double counting presumably through partial treatment and the onward transfer to other licensed facilities who are also required to make a quarterly waste return to NIEA. There is the opportunity to use these data returns to gather additional and more detailed data from these operators to enable data to be used more confidently. As such, consideration could be given to modifying the waste management licenses to enable this data to be collected., such as background information on their business, where tyres processed are received from and if any tyres are passed to other operators for processing, either in or outside Northern Ireland. The e-Doc system currently being developed could also potentially be used by licensed operators.

3. Data Reporting –Public Bodies Central Recording System

As part of this Study data on illegal disposal and fly tipping of used tyres was requested from each Local Authority in Northern Ireland. This exercise determined that a consistent approach regarding this issue was not undertaken in each Local Authority. For example, some Local Authorities in NI accept used tyres at household waste recycling centres while others do not. Some Local Authorities record the tonnage of units of used tyres collected from land or flytipped while others do not. It would be prudent that a consistent approach was in place throughout NI and that Local Authorities should be required to quantify and report the number of used tyres dealt with.

Additionally the NIEA do not necessarily record the number or type of tyres which are discovered as a result of illegal activity.

From discussions with Local Authorities it is understood that other public bodies such as the Northern Ireland Housing Executive (NIHE) and the Police Service of Northern Ireland (PSNI) and the NIFRS may also collect tyres under certain circumstances.

For example, the NIHE remove tyres from their owned property or land if stockpiled for a bonfire, furthermore in certain circumstances the PSNI may be required to remove tyres from a bonfire and transport them to the local authority for recycling. Therefore all public bodies should also be required to quantify the number of used tyres dealt with.

In order to obtain an overall picture of illegal disposal of tyres in Northern Ireland it is recommended that consideration be given to a central recording system to be administered by the DOE or NIEA which would require all public bodies to report the used tyres which are discovered either through illegal dumping, fly tipping or activities. This system would require the introduction of primary legislation which may take some time to implement in Northern Ireland.

9.1.2 Republic of Ireland

4. Data Regarding Tyres put on the Market

The Waste Management (Tyres and Waste Tyres) Regulations 2007 (SI 664 / 2007) impose obligations on persons who supply tyres to the Irish market whether as manufacturers, wholesalers, suppliers, traders or retailers and on the collectors of waste tyres to provide information regarding tyres placed on the market, tyres supplied to and taken back from, retained by end users and tyres collected by authorised waste collectors. Information is provided to compliance schemes (TRACS and TWM) by their members. Local Authorities compile information from producers and suppliers which are self compliers and are not members of either compliance schemes.

The data regarding tyres put on the market can be compiled from three sources:

- TRACS available in an annual report which provides details of tyres put on the market per category of tyres for producers and retailers;
- TWM; and
- Local Authorities – although it appears that information from self-compliers held by local authorities is not collated in a central system.

It is therefore recommended that:

- Information be collated from the local authorities in relation to self-compliers; and
- A central body should collate information required as per Waste Management (Tyres and Waste Tyres) Regulations 2007 (SI 664 / 2007) Guidance¹⁶. It may be possible that a centralised electronic system could be utilised for these purposes which may be considered further by DECLG if it is considered to be economically and technically viable.

5. Data Regarding Used Tyres

In order to get a complete set of information there is also a need to have access to information from all the waste operators dealing with used tyres. As there is no collaboration between TRACS, TWM and Local Authorities to reconcile data from waste collectors, it is unclear how used tyre collections are allocated to producers.

With the current framework, it could be questioned if the compliance schemes have the competencies and power to access the relevant data from waste operators enabling them to compile used tyre statistics. This is in contrast with the packaging and WEEE / batteries compliance schemes which have incentives for the waste operators to provide information to ensure payment of subsidies for packaging waste recovered or fees for service provided for WEEE / batteries.

It is therefore recommended that the compliance schemes in operation are reviewed to assess if there could be increased cooperation between the scheme operators and the local authorities. The review should also assess if adequate arrangements are in place to encourage cooperation from waste operators for the purposes of compiling used tyre data and to compel operators to provide data returns.

Reporting on used tyres creates an additional administrative burden for waste collectors and operators of Authorised Treatment Facilities as they already report the quantities of waste managed, their fate (recycling, recovery and disposal) and destinations to the relevant authorities (Local Authorities and EPA), which are subsequently included in an Annual National Waste Report to inform decision making by national and local government as well as to fulfil European (EU) reporting requirements. There is a thorough process of validation and analysis carried out by the EPA.

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<http://www.environ.ie/en/Environment/Waste/ProducerResponsibilityObligations/Tyres/RHLegislation/FileDownload,16460,en.doc>

Taking the above issues into consideration, it is therefore recommended that a single body (with the appropriate level of skills and powers) takes the responsibility of collating information from waste operators. The information collected for each waste operator should be compared with the information provided by the producer online system (it would be possible to provide a report of the quantities of tyres sent by retailers by waste operators).

EPA Questionnaires, Waste Permit and Collection Permit annual report should also be updated to include information required from waste collectors and waste operators in the Waste Management (Tyres and Waste Tyres) Regulations 2007 (SI 664 / 2007). Guidance¹⁷. Consideration should also be given to the reporting requirements from Waste Permit holders to ensure that sufficient information is available on the onward movement and final destination of used tyres.

It must also be noted that up to 2010, the EPA had sought data from the AERs from the local authorities, but for 2010 data the EPA was able to query the online reporting systems for the relevant information, thus reducing the reporting burden on Local Authorities. The EPA would hope to create a single national portal of all waste facility permit, certificates of registration, and licensing data; with this portal providing all the data needs to other competent authorities (multiple user interface), and as work will be ongoing on this project during the course of the framework agreement it may impact on the way national waste data is collected. Information required on used tyres from waste operators should be integrated with this system.

¹⁷ <http://www.environ.ie/en/Environment/Waste/ProducerResponsibilityObligations/Tyres>

Appendix A

Survey Questionnaires



All Island Used Tyre Survey

Survey of Tyre Manufacturers, Distributors and Retailers (Northern Ireland)

Important Information:

Question 2 of this questionnaire requires you to provide information on how used tyres are managed by your company. The definitions and examples below are provided for your information:

- *Reused* – Any operation by which tyres are returned to their original intended use on the road, including for example, part-worn tyres, where tyres with a useful life can be refitted to vehicles and remoulded / retreaded tyres.
- *Recycled* – Any operation by which tyres are reprocessed into products, materials or substances whether for the original or other purposes. For example, used tyres processed into rubber shred and crumb to be used for carpet underlay and surfacing for children’s play areas.
- *Reused on Farm* – Any operation by which tyres are used again on farms. For example, for use in silage clamps etc.
- *Incineration* – Any operation by which tyres are burnt at a licensed waste management facility.
- *Landfill Engineering* – Any operation by which tyres are accepted onto a landfill site for engineering purposes.
- *Other Disposal* – Any other operation, not specified above, by which tyres are removed. Please Specify.
- *Other Agricultural Use* – Any other operation for agricultural use that does not include tyres being reused on farms.

Questions 4 and 6 of this questionnaire require you to provide information about imported tyres. Please provide information about any tyres imported from outside Northern Ireland, including from UK mainland and the Republic of Ireland.



Part 1 : Company Information

Company Name: _____

Address: _____

Number of sites your company operates: _____

If your company operates more than one site please indicate if this is a combined return for all sites or an individual return for one site only:

Number of employees: _____

Estimated annual turnover: _____

Contact Name:

(Please provide the name of the person who will answer any queries we might have about the information submitted.)

Position in company: _____

Telephone number: _____

Fax number: _____

Email address: _____

Please provide a brief description of activities carried out on site, including any additional information which may be useful to us in compiling data for this survey.



Part 2 : Survey Information

1. Please tick the most applicable activity of your business from the list below. (Please tick only one option that relates to the majority of your business activity):

- A tyre distributor
- A tyre retailer

2. Do you as part of your business activity collect or take back used tyres?

- Yes
- No

If yes, how do you manage these used tyres?

Please provide an estimate (units and tonnage) of how each of these options are managed in 2010/11 (April 2010 – March 2011) on the table on the following page. Please see ‘Important Information’ included in this questionnaire for more information on definitions included in the table below.

*Please specify the type of tyre managed, either: Car, Light HGV, HGV, Agricultural, Construction or Other (Please Specify) in the column titled ‘Type of Tyre’. Please do not enter Mixed Tyres as a description in this column and use the blank lines in the table as appropriate to ensure that all tyre types managed are included.



Management of Tyres

	Type of Tyre*	Estimate of Tyre Quantity		Location	Contractor Used	Indicative Cost per tyre (£)
		Tyres (Units)	Tyres (Tonnage)			
Reused						
Recycled						
Reused on farm						
Incineration						
Landfill Engineering						
Other Disposal (Please Specify): _____						
Other Agricultural Use (Please Specify): _____						



3. Do you stockpile any used tyres for further use?

Yes

No

If Yes, please provide an annual estimate for 2010/11 (April 2010 – March 2011) for the quantity of used tyres stockpiled at your site?

Type of Tyre	Tyres (Units)	Tyres (Tonnage)
Car		
Light HGV		
HGV		
Agricultural		
Construction		
Other		

4. Does your business sell remoulded or retreaded tyres?

Yes

No

If Yes, please provide an estimate of the quantity of remoulded or retreaded tyres (units and tonnage) sold during 2010/11 (April 2010 – March 2011)?

	Type of Tyre*	Tyres (Units)	Tyres (Tonnage)
Sourced in NI			
Sourced in NI			
Sourced in NI			
Imported from outside NI			
Imported from outside NI			
Imported from outside NI			

* Please specify the type of tyre to be: Car, Light HGV, HGV, Agricultural, Construction or Other (Please Specify). Please do not enter Mixed Tyres as a description in this column and enter lines into the table above as appropriate to ensure that all tyre types managed are included.



5. Please provide an estimate of the quantity of new tyres (units and tonnage) that you sold in Northern Ireland during the past three financial years, that is, 2008/09, 2009/10 and 2010/11 (April 2008 – March 2009, April 2009 – March 2010 and April 2010 – March 2011)?

	Type of Tyre*	Tyres (Units)	Tyres (Tonnage)
2008/09 – New Tyres			
2008/09 – New Tyres			
2008/09 – New Tyres			
2009/10 – New Tyres			
2009/10 – New Tyres			
2009/10 – New Tyres			
2010/11 – New Tyres			
2010/11 – New Tyres			
2010/11 – New Tyres			

* Please specify the type of tyre to be: Car, Light HGV, HGV, Agricultural, Construction or Other (Please Specify). Please do not enter Mixed Tyres as a description in this column and enter lines into the table above as appropriate to ensure that all tyre types managed are included.

6. Does the answer provided in Question 5 above, include a quantity of new tyres imported from outside Northern Ireland for sale?

Yes

No

If Yes, please provide an estimate of the quantity of new tyres (units and tonnage) of tyres imported from outside Northern Ireland during 2008/09, 2009/10 and 2010/11 (April 2008 – March 2009, April 2009 – March 2010 and April 2010 – March 2011)?

	Type of Tyre*	Tyres (Units)	Tyres (Tonnage)
2008/09 – New Tyre Imports			
2008/09 – New Tyre Imports			
2008/09 – New Tyre Imports			
2009/10 – New Tyre Imports			
2009/10 – New Tyre Imports			
2009/10 – New Tyre Imports			
2010/11 – New Tyre Imports			
2010/11 – New Tyre Imports			
2010/11 – New Tyre Imports			



* Please specify the type of tyre to be: Car, Light HGV, HGV, Agricultural, Construction or Other (Please Specify). Please do not enter Mixed Tyres as a description in this column and enter lines into the table above as appropriate to ensure that all tyre types managed are included.

7. In your opinion, what are the main barriers that you face in the management of waste tyres in Northern Ireland:

- a. Financial
- b. Knowledge
- c. Facilities
- d. Legislation
- e. Other (Please specify) _____

8. In your opinion, are waste tyres in Northern Ireland managed:

- a. Very well
- b. Well
- c. Adequately
- d. Poorly

9. Do you have any other comments on the management of waste tyres in Northern Ireland? (For example, do you have any suggestions on how the management of tyres could be improved).



Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government



Thank you for your participation in this survey

If you have any questions please do not hesitate to get in touch with a member of the project team by
telephoning: 02890 680568

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE BY FRIDAY 15TH JUNE 2012 TO

tyresurvey@rpsgroup.com



All Island Used Tyre Survey

Survey of Tyre Manufacturers Distributors and Retailers (Republic of Ireland)

Important Information

Questions in this questionnaire require you to provide information on how used tyres are managed by your company. The definitions and examples below are provided by you in the response.

- *Reused* – Any operation by which tyres are returned to their original intended use on the road, including for example, part-worn tyres, where tyres with a useful life can be refitted to vehicles and remoulded / retreaded tyres.
- *Recycled* – Any operation by which tyres are reprocessed into products, materials or substances whether for the original or other purposes. For example, used tyres processed into rubber shred and crumb to be used for carpet underlay and surfacing for children’s play areas.
- *Reused on Farm* – Any operation by which tyres are used again on farms. For example, for use in silage clamps etc.
- *Incineration* – Any operation by which tyres are burnt at a licensed waste management facility.
- *Landfill Engineering* – Any operation by which tyres are accepted onto a landfill site for engineering purposes.
- *Other Disposal* – Any other operation, not specified above, by which tyres are removed. Please Specify.
- *Other Agricultural Use* – Any other operation for agricultural use that does not include tyres being reused on farms.

Questions in this questionnaire require you to provide information about used tyres in the Republic of Ireland including Northern Ireland.



Part 1 Company Information

Company Name: _____

Address: _____

Number of sites your company operates: _____

If your company operates more than one site please indicate if this is a combined return for all sites or an individual return for one site only:

Number of employees: _____

Estimated annual turnover: _____

Contact Name:
(Please provide the name of the person who will answer any queries we might have about the information submitted.)

Position in company: _____

Telephone number: _____

Fax number: _____

Email address: _____

Please provide a brief description of activities carried out on site, including any additional information which may be useful to us in compiling data for this survey.



Part 2 Survey Information

lease the services applicable to your business are listed below. Please select only one option that relates to the major activity of your business activity

A tyre distributor
A tyre retailer

Do you, as part of your business activity, utilize or take care used tyres

Yes
No

If yes, how do you manage these used tyres

Please provide an estimate (units and tonnage) of how each of these options are managed in 2010 (January – December 2010) on the table on the following page. Please see ‘Important Information’ included in this questionnaire for more information on definitions included in the table below.

*Please specify the type of tyre managed, either: Car, light truck, heavy truck, Agricultural, Construction or other (Please Specify) in column titled ‘Type of Tyre’. Please do not enter mixed Tyres as a description in this column and use the blank lines in the table as appropriate to ensure that all tyre types managed are included.



ana e en Tyres

	Type of Tyre*	Es ima e of Tyre uan i y		oca ion	Con rac or sed	Indica ive Cos per yre ()
		Tyres (ni s)	Tyres (Tonnage)			
used						
recycled						
used on farm						
Incineration						
landfill Engineering						
Other Disposal (Please Specify): _____						
Other Agricultural use (Please Specify): _____						



Do you use any used tyres for further use

Yes

No

Please provide an annual estimate (January 20 – December) of the quantity used by you in the following categories:

Category	Tyres (Units)	Tyres Tonnage
Car		
Light		
Agricultural		
Construction		
Other		

Do your businesses sell remoulded or retreaded tyres

Yes

No

Please provide an estimate of the quantity of remoulded or retreaded tyres in units and tonnage sold during January 20 – December

Description	Category*	Tyres (Units)	Tyres Tonnage
Sourced in NI			
Sourced in NI			
Sourced in NI			
Imported from outside NI			
Imported from outside NI			
Imported from outside NI			

* Please specify the type of tyre to be: Car, Light, Heavy, Agricultural, Construction or Other (Please Specify). Please do not enter Mixed Tyres as a description in this column and enter lines into the table above as appropriate to ensure that all tyre types managed are included.



5. Please provide an estimate of the quantity of new tyres and tonnage that you sold in the Republic of Ireland during the years 2008/09 and 2009/10 and 2010/11 – 2008/09 – 2009/10 and 2010/11 – 2009/10 and 2010/11 – 2009/10

	Tyre Type*	Tyres (Units)	Tyres Tonnage
2008/09 – New Tyres			
2008/09 – New Tyres			
2008/09 – New Tyres			
2009/10 – New Tyres			
2009/10 – New Tyres			
2009/10 – New Tyres			
2010/11 – New Tyres			
2010/11 – New Tyres			
2010/11 – New Tyres			

* Please specify the type of tyre to be: Car, Light, Heavy, Agricultural, Construction or Other (Please Specify). Please do not enter Mixed Tyres as a description in this column and enter lines into the table above as appropriate to ensure that all tyre types managed are included.

Please answer provided in Question 5 and include a quantity of new tyres recorded outside the Republic of Ireland or sale

Yes

No

Please provide an estimate of the quantity of new tyre units and tonnage of tyres imported into the Republic of Ireland during 2008/09, 2009/10 and 2010/11. April 2008 – April 2009, April 2009 – April 2010 and April 2010 – April 2011

	Tyre Type*	Tyres (Units)	Tyres Tonnage
2008/09 – New Tyre Imports			
2008/09 – New Tyre Imports			
2008/09 – New Tyre Imports			
2009/10 – New Tyre Imports			
2009/10 – New Tyre Imports			
2009/10 – New Tyre Imports			
2010/11 – New Tyre Imports			
2010/11 – New Tyre Imports			
2010/11 – New Tyre Imports			



* Please specify the type of tyre to be: Car, Light , H , Agricultural, Construction or ther (Please Specify). Please do not enter ixed Tyres as a description in this column and enter lines into the table above as appropriate to ensure that all tyre types managed are included.

7. In your n on at are e ain barr ers at y u ace n e anage en as e yres n e e ubl c Ireland:

- a. Financial
- b. Knowledge
- c. Facilities
- d. egislation
- e. ther (Please specify) _____

8. In your in n are as e yres in e e u li Ireland anaged

- a. ery well
- b. Well
- c. Adequately
- d. Poorly

9. y u ha e any er c mmen s on e mana emen was e tyres in t e Re u l o Ireland (For example, do you have any suggestions on how the management of tyres could be improved).



Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government



Thank you for your participation in the survey

If you have any questions please do not hesitate to get in touch with a member of the project team by telephoning: 02890 680568

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE TO
survey@rpsgroup.com



All Island Used Tyre Survey

Survey of Tyre Collectors (Northern Ireland)

Important Information:

Question 2 of this questionnaire requires you to provide information on how used tyres are managed by your company. The definitions and examples below are provided for your information:

- *Reused* – Any operation by which tyres are returned to their original intended use on the road, including for example, part-worn tyres, where tyres with a useful life can be refitted to vehicles and remoulded / retreaded tyres.
- *Recycled* – Any operation by which tyres are reprocessed into products, materials or substances whether for the original or other purposes. For example, used tyres processed into rubber shred and crumb to be used for carpet underlay and surfacing for children’s play areas.
- *Reused on Farm* – Any operation by which tyres are used again on farms. For example, for use in silage clamps etc.
- *Incineration* – Any operation by which tyres are burnt at a licensed waste management facility.
- *Landfill Engineering* – Any operation by which tyres are accepted onto a landfill site for engineering purposes.
- *Other Disposal* – Any other operation, not specified above, by which tyres are removed. Please Specify.
- *Other Agricultural Use* – Any other operation for agricultural use that does not include tyres being reused on farms.



Part 1 : Company Information

Company Name: _____

Address: _____

Waste Management Licence / Exemption Number: _____

Number of sites your company operates: _____

If your company operates more than one site please indicate
if this is a combined return for all sites or an individual
return for one site only: _____

Number of employees: _____

Estimated annual turnover: _____

Contact Name:
(Please provide the name of the person who will answer any
queries we might have about the information submitted.) _____

Position in company: _____

Telephone number: _____

Fax number: _____

Email address: _____

Please provide a brief description of activities carried out on site, including any additional information which
may be useful to us in compiling data for this survey.



Part 2 : Survey Information

1. Do you as part of your business activity collect used tyres?

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

If yes, how do you manage these used tyres?

Please provide an estimate (units and tonnage) of how each of these options are managed in 2010/11 (April 2010 – March 2011) on the table on the following page. Please see ‘Important Information’ included in this questionnaire for more information on definitions included in the table below.

*Please specify the type of tyre managed, either: Car, Light HGV, HGV, Agricultural, Construction or Other (Please Specify) in the column titled ‘Type of Tyre’. Please do not enter Mixed Tyres as a description in this column and use the blank lines in the table as appropriate to ensure that all tyre types managed are included.



Management of Tyres

	Type of Tyre*	Estimate of Tyre Quantity		Location	Contractor Used	Indicative Cost per tyre (£)
		Tyres (Units)	Tyres (Tonnage)			
Reused						
Recycled						
Reused on farm						
Incineration						
Landfill Engineering						
Other Disposal (Please Specify): _____						
Other Agricultural Use (Please Specify): _____						



2. Do you stockpile any used tyres for further use?

Yes

No

If Yes, please provide an annual estimate for 2010/11 (April 2010 – March 2011) for the quantity of used tyres stockpiled at your site?

Type of Tyre	Tyres (Units)	Tyres (Tonnage)
Car		
Light HGV		
HGV		
Agricultural		
Construction		
Other		

3. In your opinion, what are the main barriers that you face in the management of waste tyres in Northern Ireland:

- a. Financial
- b. Knowledge
- c. Facilities
- d. Legislation
- e. Other (Please specify) _____

4. In your opinion, are waste tyres in Northern Ireland managed:

- a. Very well
- b. Well
- c. Adequately
- d. Poorly



5. **Do you have any other comments on the management of waste tyres in Northern Ireland?** (For example, do you have any suggestions on how the management of tyres could be improved, on Producer Responsibility Schemes or the use of emerging technologies for recycling tyre-derived rubber into new tyres).

Thank you for your participation in this survey

If you have any questions please do not hesitate to get in touch with a member of the project team by telephoning: 02890 680568

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE BY FRIDAY 15TH JUNE 2012 TO

tyresurvey@rpsgroup.com



All Island Used Tyre Survey

Survey of Tyre Collectors (Republic of Ireland)

Important Information:

Question 2 of this questionnaire requires you to provide information on how used tyres are managed by your company. The definitions and examples below are provided for your information:

- *Reused* – Any operation by which tyres are returned to their original intended use on the road, including for example, part-worn tyres, where tyres with a useful life can be refitted to vehicles and remoulded / retreaded tyres.
- *Recycled* – Any operation by which tyres are reprocessed into products, materials or substances whether for the original or other purposes. For example, used tyres processed into rubber shred and crumb to be used for carpet underlay and surfacing for children’s play areas.
- *Reused on Farm* – Any operation by which tyres are used again on farms. For example, for use in silage clamps etc.
- *Incineration* – Any operation by which tyres are burnt at a licensed waste management facility.
- *Landfill Engineering* – Any operation by which tyres are accepted onto a landfill site for engineering purposes.
- *Other Disposal* – Any other operation, not specified above, by which tyres are removed. Please Specify.
- *Other Agricultural Use* – Any other operation for agricultural use that does not include tyres being reused on farms.



Part 1 : Company Information

Company Name: _____

Address: _____

Waste Permit or EPA Waste Licence Number: _____

Number of sites your company operates: _____

If your company operates more than one site please indicate
if this is a combined return for all sites or an individual
return for one site only: _____

Number of employees: _____

Estimated annual turnover: _____

Contact Name:
(Please provide the name of the person who will answer any
queries we might have about the information submitted.) _____

Position in company: _____

Telephone number: _____

Fax number: _____

Email address: _____

Please provide a brief description of activities carried out on site, including any additional information which
may be useful to us in compiling data for this survey.



Part 2 : Survey Information

1. Do you as part of your business activity collect used tyres?

Yes

No

If yes, how do you manage these used tyres?

Please provide an estimate (units and tonnage) of how each of these options are managed in 2010 (January – December 2010) on the table on the following page. Please see ‘Important Information’ included in this questionnaire for more information on definitions included in the table below.

*Please specify the type of tyre managed, either: Car, Light HGV, HGV, Agricultural, Construction or Other (Please Specify) in the column titled ‘Type of Tyre’. Please do not enter Mixed Tyres as a description in this column and use the blank lines in the table as appropriate to ensure that all tyre types managed are included.



Management of Tyres

	Type of Tyre*	Estimate of Tyre Quantity		Location	Contractor Used	Indicative Cost per tyre (£)
		Tyres (Units)	Tyres (Tonnage)			
Reused						
Recycled						
Reused on farm						
Incineration						
Landfill Engineering						
Other Disposal (Please Specify): _____						
Other Agricultural Use (Please Specify): _____						



2. Do you stockpile any used tyres for further use?

Yes

No

If Yes, please provide an annual estimate for 2010 (January 2010 – December 2010) for the quantity of used tyres stockpiled at your site?

Type of Tyre	Tyres (Units)	Tyres (Tonnage)
Car		
Light HGV		
HGV		
Agricultural		
Construction		
Other		

3. In your opinion, what are the main barriers that you face in the management of waste tyres in the Republic of Ireland:

- a. Financial
- b. Knowledge
- c. Facilities
- d. Legislation
- e. Other (Please specify) _____

4. In your opinion, are waste tyres in the Republic of Ireland managed:

- a. Very well
- b. Well
- c. Adequately
- d. Poorly



5. **Do you have any other comments on the management of waste tyres in the Republic of Ireland?** (For example, do you have any suggestions on how the management of tyres could be improved, on Producer Responsibility Schemes or the use of emerging technologies for recycling tyre-derived rubber into new tyres).

Thank you for your participation in this survey

If you have any questions please do not hesitate to get in touch with a member of the project team by telephoning: 02890 680568

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE BY FRIDAY 15TH JUNE 2012 TO

tyresurvey@rpsgroup.com



All Island Used Tyre Survey

Survey of Tyre Recovery Operators and Collectors (Northern Ireland)

Important Information:

Question 2 of this questionnaire requires you to provide information on how used tyres are managed by your company. The definitions and examples below are provided for your information:

- *Reused* – Any operation by which tyres are returned to their original intended use on the road, including for example, part-worn tyres, where tyres with a useful life can be refitted to vehicles and remoulded / retreaded tyres.
- *Recycled* – Any operation by which tyres are reprocessed into products, materials or substances whether for the original or other purposes. For example, used tyres processed into rubber shred and crumb to be used for carpet underlay and surfacing for children’s play areas.
- *Reused on Farm* – Any operation by which tyres are used again on farms. For example, for use in silage clamps etc.
- *Incineration* – Any operation by which tyres are burnt at a licensed waste management facility.
- *Landfill Engineering* – Any operation by which tyres are accepted onto a landfill site for engineering purposes.
- *Other Disposal* – Any other operation, not specified above, by which tyres are removed. Please Specify.
- *Other Agricultural Use* – Any other operation for agricultural use that does not include tyres being reused on farms.



Part 1 : Company Information

Company Name: _____

Address: _____

Waste Management Licence / Exemption Number: _____

Number of sites your company operates: _____

If your company operates more than one site please indicate if this is a combined return for all sites or an individual return for one site only:

Number of employees: _____

Estimated annual turnover: _____

Contact Name:

(Please provide the name of the person who will answer any queries we might have about the information submitted.)

Position in company: _____

Telephone number: _____

Fax number: _____

Email address: _____

Please provide a brief description of activities carried out on site, including any additional information which may be useful to us in compiling data for this survey.



Part 2 : Survey Information

1. **Please provide an estimate of how many used tyres (units and tonnage) were accepted at your site for recycling in 2010/11 (April 2010 – March 2011)?**

2. **How do you manage these used tyres?**

Please provide an estimate (units and tonnage) of how each of these options are managed in 2010/11 (April 2010 – March 2011) on the table on the following page. Please see 'Important Information' included in this questionnaire for more information on definitions included in the table below.

*Please specify the type of tyre managed, either: Car, Light HGV, HGV, Agricultural, Construction or Other (Please Specify) in the column titled 'Type of Tyre'. Please do not enter Mixed Tyres as a description in this column and use the blank lines in the table as appropriate to ensure that all tyre types managed are included.



Management of Tyres

	Type of Tyre*	Estimate of Tyre Quantity		Location	Contractor Used	Indicative Cost per tyre (£)
		Tyres (Units)	Tyres (Tonnage)			
Reused						
Recycled						
Reused on farm						
Incineration						
Landfill Engineering						
Other Disposal (Please Specify): _____						
Other Agricultural Use (Please Specify): _____						



3. Do you stockpile any used tyres for further use?

Yes

No

If Yes, please provide an annual estimate for 2010/11 (April 2010 – March 2011) for the quantity of used tyres stockpiled at your site?

Type of Tyre	Tyres (Units)	Tyres (Tonnage)
Car		
Light HGV		
HGV		
Agricultural		
Construction		
Other		

4. In your opinion, what are the main barriers that you face in the management of waste tyres in Northern Ireland:

- a. Financial
- b. Knowledge
- c. Facilities
- d. Legislation
- e. Other (Please specify)

5. In your opinion, are waste tyres in Northern Ireland managed:

- a. Very well
- b. Well
- c. Adequately
- d. Poorly



6. Do you have any other comments on the management of waste tyres in Northern Ireland? (For example, do you have any suggestions on how the management of tyres could be improved)).

Thank you for your participation in this survey

If you have any questions please do not hesitate to get in touch with a member of the project team by
telephoning: 02890 680568

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE BY FRIDAY 15TH JUNE 2012 TO

tyresurvey@rpsgroup.com



All Island Used Tyre Survey

Survey of Tyre Recovery Operators and Collectors (Republic of Ireland)

Important Information:

Question 2 of this questionnaire requires you to provide information on how used tyres are managed by your company. The definitions and examples below are provided for your information:

- *Reused* – Any operation by which tyres are returned to their original intended use on the road, including for example, part-worn tyres, where tyres with a useful life can be refitted to vehicles and remoulded / retreaded tyres.
- *Recycled* – Any operation by which tyres are reprocessed into products, materials or substances whether for the original or other purposes. For example, used tyres processed into rubber shred and crumb to be used for carpet underlay and surfacing for children’s play areas.
- *Reused on Farm* – Any operation by which tyres are used again on farms. For example, for use in silage clamps etc.
- *Incineration* – Any operation by which tyres are burnt at a licensed waste management facility.
- *Landfill Engineering* – Any operation by which tyres are accepted onto a landfill site for engineering purposes.
- *Other Disposal* – Any other operation, not specified above, by which tyres are removed. Please Specify.
- *Other Agricultural Use* – Any other operation for agricultural use that does not include tyres being reused on farms.



Part 1 : Company Information

Company Name: _____

Address: _____

Waste Permit or EPA Waste Licence Number: _____

Number of sites your company operates: _____

If your company operates more than one site please indicate if this is a combined return for all sites or an individual return for one site only:

Number of employees: _____

Estimated annual turnover: _____

Contact Name:
(Please provide the name of the person who will answer any queries we might have about the information submitted.)

Position in company: _____

Telephone number: _____

Fax number: _____

Email address: _____

Please provide a brief description of activities carried out on site, including any additional information which may be useful to us in compiling data for this survey.



Part 2 : Survey Information

1. **Please provide an estimate of how many used tyres (units and tonnage) were accepted at your site for recycling in 2010 (January – December 2010)?**

--

2. **How do you manage these used tyres?**

Please provide an estimate (units and tonnage) of how each of these options are managed in 2010 (January – December 2010) on the table on the following page. Please see 'Important Information' included in this questionnaire for more information on definitions included in the table below.

*Please specify the type of tyre managed, either: Car, Light HGV, HGV, Agricultural, Construction or Other (Please Specify) in the column titled 'Type of Tyre'. Please do not enter Mixed Tyres as a description in this column and use the blank lines in the table as appropriate to ensure that all tyre types managed are included.



Management of Tyres

	Type of Tyre*	Estimate of Tyre Quantity		Location	Contractor Used	Indicative Cost per tyre (£)
		Tyres (Units)	Tyres (Tonnage)			
Reused						
Recycled						
Reused on farm						
Incineration						
Landfill Engineering						
Other Disposal (Please Specify): _____						
Other Agricultural Use (Please Specify): _____						



3. Do you stockpile any used tyres for further use?

Yes

No

If Yes, please provide an annual estimate for 2010 (January 2010 – December 2010) for the quantity of used tyres stockpiled at your site?

Type of Tyre	Tyres (Units)	Tyres (Tonnage)
Car		
Light HGV		
HGV		
Agricultural		
Construction		
Other		

4. In your opinion, what are the main barriers that you face in the management of waste tyres in the Republic of Ireland:

a. Financial

b. Knowledge

c. Facilities

d. Legislation

e. Other (Please specify)

5. In your opinion, are waste tyres in the Republic of Ireland managed:

a. Very well

b. Well

c. Adequately

d. Poorly



6. Do you have any other comments on the management of waste tyres in the Republic of Ireland? (For example, do you have any suggestions on how the management of tyres could be improved).

Thank you for your participation in this survey

If you have any questions please do not hesitate to get in touch with a member of the project team by telephoning: 02890 680568

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE BY FRIDAY 15TH JUNE 2012 TO

tyresurvey@rpsgroup.com

Appendix B

Letters Issued to the Local Authorities



Elmwood House, 74 Boucher Road, Belfast, BT12 6RZ, Northern Ireland
T +44 (0)28 9066 7914 F +44 (0)28 9066 8286 E ireland@rpsgroup.com W rpsgroup.com/ireland

Our Ref: CG/IBR0393

11 June 2012

For the attention of Mr Michael Laverty

Antrim Borough Council
Antrim Civic Centre
50 Stiles Way
Antrim
Co Antrim
BT41 2UB

Dear Mr Laverty

ALL ISLAND USED TYRE SURVEY

RPS have been appointed to carry out a survey of waste tyres in Northern Ireland and the Republic of Ireland on behalf of the Department of the Environment Northern Ireland (DOENI) and the Department of the Environment, Community and Local Government (DECLG).

The survey aims to provide accurate information on the quantity of used tyres disposed of on the island of Ireland, and in particular to identify how these used tyres are being managed by contractors. In addition, the survey will provide regulators in both Northern Ireland and the Republic of Ireland with information which will help to inform the development of policy which will support and provide a level playing field for businesses and drive environmental improvements.

As part of this survey, we are keen to gather information and quantify the illegal disposal of waste tyres, for example, through fly tipping or bonfires. We would therefore be grateful if you could provide us with any information on recorded incidents of illegal disposal of waste tyres within your Council area within the 2010/11 year. Replies can be sent by email to tyresurvey@rpsgroup.com or by post to:

RPS
Elmwood House
74 Boucher Road
Belfast
BT12 6RZ

2

11 June 2012

For the attention of Mr Michael Laverty

It would be appreciated if replies could be returned by Friday 22 June 2012.

We trust that this is in order, however if you have any queries with this please do not hesitate to contact either Jill Doherty or Carolyn Glasgow for further information or assistance.

Many thanks for your assistance on this matter.

Yours sincerely,
For RPS

A handwritten signature in black ink, appearing to read 'A. Baskin', written in a cursive style.

Andrew Baskin
Director



Elmwood House, 74 Boucher Road, Belfast, BT12 6RZ, Northern Ireland
T +44 (0)28 9066 7914 F +44 (0)28 9066 8286 E ireland@rpsgroup.com W rpsgroup.com/ireland

Our Ref: CG/IBR0393

11 June 2012

For the attention of Ms Mary Mullholland

Carlow County Council
County Buildings
Athy Road
Carlow Town

Dear Ms Mullholland

ALL ISLAND USED TYRE SURVEY

RPS have been appointed to carry out a survey of waste tyres in the Republic of Ireland and Northern Ireland on behalf of the Department of the Environment, Community and Local Government (DECLG) and the Department of the Environment Northern Ireland (DOENI).

The survey aims to provide accurate information on the quantity of used tyres disposed of on the island of Ireland, and in particular to identify how these used tyres are being managed by contractors. In addition, the survey will provide regulators in both the Republic of Ireland and Northern Ireland with information which will help to inform the development of policy which will support and provide a level playing field for businesses and drive environmental improvements.

As part of this survey, we are keen to gather information and quantify the illegal disposal of waste tyres, for example, through fly tipping or bonfires. We would therefore be grateful if you could provide us with any information on recorded incidents of illegal disposal of waste tyres within your Local Authority area within the 2010 year. Replies can be sent by email to tyresurvey@rpsgroup.com or by post to:

RPS
Elmwood House
74 Boucher Road
Belfast
BT12 6RZ

2

11 June 2012

For the attention of Ms Mary Mullholland

We trust that this is in order, however if you have any queries with this please do not hesitate to contact either Jill Doherty or Carolyn Glasgow for further information or assistance.

Many thanks for your assistance on this matter.

Yours sincerely,
For RPS

A handwritten signature in black ink, appearing to read 'A. Baskin', written in a cursive style.

Andrew Baskin
Director

Appendix C

Used Tyre Arisings Data from DVA Statistics

C Used Tyre Arisings Data from DVA Statistics

Table C.1: Vehicles currently licensed by taxation group: 2006-2010

Taxation Group	2006		2007		2008		2009		2010	
	No.	%	No.	%	No.	%	No.	%	No.	%
(Taxation Classes)										
Private Light Goods	800,969.00	83.5	840,621.00	83.4	857,044.00	83.7	873,562.00	83.7	877,034.00	83.5
Motorcycles, Scooters & Mopeds	27,083.00	2.8	28,150.00	2.8	28,180.00	2.8	28,080.00	2.7	26,771.00	2.5
General (HGV) Goods	24,806.00	2.6	25,785.00	2.6	25,136.00	2.5	24,534.00	2.4	23,863.00	2.3
Bus	2,670.00	0.3	2,865.00	0.3	2,951.00	0.3	2,987.00	0.3	3,035.00	0.3
Agricultural/Tractors	10,586.00	1.1	12,817.00	1.3	14,326.00	1.4	15,526.00	1.5	17,059.00	1.6
Other	2,039.00	0.2	2,125.00	0.2	2,232.00	0.2	2,244.00	0.2	2,180.00	0.2
Crown	7,315.00	0.8	9,655.00	1	6,902.00	0.7	7,215.00	0.7	7,488.00	0.7
Exempt	83,209.00	8.7	86,271.00	8.6	87,625.00	8.6	89,757.00	8.6	93,051.00	8.9
All Vehicles	958,677.00	100	1,008,289.00	100	1,024,396.00	100	1,043,905.00	100	1,050,481.00	100

Source: Driver and Vehicle Agency (DVA)

Table C.2: Amended to the waste reporting year

Vehicles currently licensed by taxation group:	2006/07	2007/08	2008/09	2009/10
Private Light Goods	813,715.03	845,900.13	862,353.67	874,678.07
Motorcycles, Scooters & Mopeds	27,425.98	28,159.64	28,147.86	27,752.75
General (HGV) Goods	25,120.70	25,576.38	24,942.49	24,366.25
Bus	2,732.68	2,892.64	2,962.57	2,999.00
Agricultural/Tractors	11,303.15	13,302.06	14,711.74	15,909.25
Other	2,066.64	2,159.39	2,235.86	2,228.00
Crown	8,067.19	8,770.06	7,002.61	7,283.25
Exempt	84,193.27	86,706.24	88,310.33	90,580.50
All Vehicles	974,624.65	1,013,466.55	1,030,667.12	1,045,797.07
Estimated Car Parc in Northern Ireland	0.97	1.01	1.03	1.05

Table C.2a: Quarterly Distribution (2010)

Quarter	Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
Distribution of Sales	32.1%	26.0%	24.8%	17.0%
Sum Qrt 1 and Qrts 2,3&4				67.9%

Table C.3 No of Tyres & Weights

Vehicle Type	No of Tyres	Weight of Tyres (waste kg - Table C.3b)
Private Light Goods (adjusted for spare tyre)	4.2	7.90
Motorcycles, Scooters & Mopeds	2	5.00
General (HGV) Goods	7.43	43.14
Bus	6	51.00
Agricultural/Tractors	4	127.00
Other	4	7.90
Crown	4.5	7.90
Exempt	4	7.90

Table C.3a: Adjustment for spare tyre				
% Cars - No spare	25%			
% Cars - Space Saver	25%	3	0.75	
% Cars - Full Tyre	50%	9.9	4.95	
	100%		5.7	kg / car
Life of Car (NI DVA)	10	yrs	0.57	kg / car / year
	<i>ACORD, Annual Report, 2001</i>			
Waste Tyres / Yr (Cars Only)			498.57 Tonnes	
	pre spare tyre adjust		8,159	
			6.1%	
Adjustment for Tyres per Car to account for Spare			4.2	

Table C.3b: Tyre Weights			
Taxation Group	Average weight as new	Average weight as a waste tyre	Difference
Passenger Car Tyre	9.9	7.9	20.20%
Light Truck Tyre	29 kg	23.5	18.96%
Large Truck Tyre	67 kg	51	23.88%
Offroad / Tractor / Agricultural Tyre	150 kg	127	15.33%
Motorcycle - say		5	
Space Saver Tyre		3	

29% % Light Tyres
71% % Heavy Tyres

Table C.3c: HGV Average Tyres in NI				
HGV Type	No	Tyres / HGV	Tyres	Light Tyres
Livestock carrier	441	6	2,646	
Flat lorry	1,393	6	8,358	
Dropside lorry	1,432	6	8,592	
Tipper	5,281	8	42,248	
Low loader	71	10	710	
Truck	110	6	660	
Breakdown truck	390	6	2,340	
Tanker	972	14	13,608	
Solid bulk carrier	62	14	868	
Concrete mixer	376	10	3,760	
Car transporter	140	12	1,680	
Refuse disposal	623	6	3,738	
Goods	7,075	6	42,450	42,450
Skip loader	313	10	3,130	
Special mobile unit	51	10	510	
Curtain Sided	954	12	11,448	
Gritting vehicle	289	6	1,734	
Totals	19,973		148,480	
Average Tyres / HGV			7.43	
% of Light Tyres - estimated				29%

Table C.4: Units of Tyres on Registered Vehicles

	2006/07	2007/08	2008/09	2009/10
Private Light Goods	3,453,754	3,590,361	3,660,197	3,712,507
Motorcycles, Scooters & Mopeds	54,852	56,319	56,296	55,506
General (HGV) Goods	186,748	190,136	185,423	181,140
Bus	16,396	17,356	17,775	17,994
Agricultural/Tractors	45,213	53,208	58,847	63,637
Other	8,267	8,638	8,943	8,912
Crown	36,302	39,465	31,512	32,775
Exempt	336,773	346,825	353,241	362,322
	4,138,305	4,302,308	4,372,235	4,434,792

Table C.5: Weight of Tyres on Registered Vehicles (tonnes waste)

	2006/07	2007/08	2008/09	2009/10
Private Light Goods	27,285	28,364	28,916	29,329
Motorcycles, Scooters & Mopeds	274	282	281	278
General (HGV) Goods	8,056	8,202	7,999	7,814
Bus	836	885	907	918
Agricultural/Tractors	5,742	6,757	7,474	8,082
Other	65	68	71	70
Crown	287	312	249	259
Exempt	2,661	2,740	2,791	2,862
	45,206	47,610	48,686	49,612

Table C.6: Tyre Life

	Tyre Life Miles		Miles / yr	Tyre Life (yrs)	2010/11	
					Date for 2010/11 Arisings	
Private Light Goods	30,000	Tb C.6a	12,669	Tb C.6b	2.4	2009/10
Motorcycles, Scooters & Mopeds	20,000	25%	3,167		6.3	2007/08
General (HGV) Goods	70,400		26,320	Tb C.6b	2.7	2009/10
Bus	70,400		29,476	Tb C.6c	2.4	2009/10
Agricultural/Tractors	40,000		10,000		4.0	2008/09
Other	30,000		10,000		3.0	2009/10
Crown	30,000		10,000		3.0	2009/10
Exempt	30,000	75%	9,501		3.2	2008/09

Assume Year of arising is 1/2 of the projected tyre life

Table C.6a: Tyre Life Information Sources	Miles / Tyre
Michelin – average life for the basket of car tyres is	42,826
AA – 20,000 to 40,000 – assume average 30,000 miles	30,000
WRAP 2005 – 30,000 miles	30,000
EPA (RoI) 6,250 to 20,000 – average is	13,125
TRACS (RoI Compliance scheme) – 40,000 miles	40,000
	-
Average of the sources	31,190
Range is 13,125 miles to 42,826 miles – mid range is	27,976
Average Tyre Life - say	30,000

Table C.6b: Miles / year	Vehicle Miles		
	Travel (billion VmT)	Vehicles Licensed	Miles / Vehicle
Private Light Goods	11.1	877,034	12,669
General (HGV) Goods	0.6	23,863	23,435
General (HGV) Goods			29,204
Mid Point (DRD and DoT data)			26,320

Source: DRD Traffic & Travel Information 2009
Source: DoT GB VKT Survey 2010

Table C.6c Bus Mileage	
Ulsterbus & Metro Bus Miles / yr	43,300,000
No of Buses (Ulster + Metro)	1,469
Miles per bus	29,476

Source: NI Transport Statistics 2010/11 - Chp 6

Table C.7: Weight of Waste Tyres / Year (assume waste in same year as arisings)	2006/07	2007/08	2008/09	2009/10
Private Light Goods	11,522	11,978	12,211	12,385
Motorcycles, Scooters & Mopeds	43	45	45	44
General (HGV) Goods	3,012	3,066	2,990	2,921
Bus	350	371	380	384
Agricultural/Tractors	1,435	1,689	1,868	2,020
Other	22	23	24	23
Crown	96	104	83	86
Exempt	843	868	884	907
	17,323	18,143	18,484	18,771

2010/11 Adjusted Arisings (tonnes)
12,385
45
2,921
384
1,868
23
86
884
18,597

Table C.8: Units of Waste Tyres / Year (assume waste in same year as arisings)

	2006/07	2007/08	2008/09	2009/10
Private Light Goods	1,458,467	1,516,154	1,545,645	1,567,735
Motorcycles, Scooters & Mopeds	8,686	8,919	8,915	8,790
General (HGV) Goods	69,818	71,084	69,323	67,721
Bus	6,865	7,267	7,442	7,534
Agricultural/Tractors	11,303	13,302	14,712	15,909
Other	2,756	2,879	2,981	2,971
Crown	12,101	13,155	10,504	10,925
Exempt	106,661	109,844	111,876	114,752
	1,676,656	1,742,604	1,771,398	1,796,336

2010/11 Adjusted Arisings (Units)
1,567,735
8,919
67,721
7,534
14,712
2,971
10,925
111,876
1,792,392

Appendix D

Tyre Weight and Code Assumptions

D Tyre Weight and Code Assumptions

Northern Ireland

The weights of tyres vary depending on the tyre of tyre. The weights used to generate calculations are detailed in Table D.1 below.

Table D.1 Weight of Tyres Used¹⁸

Taxation Group	Average Weight as New	Average Weight as a Used Tyre	Difference
Passenger Car Tyre	9.9 kg	7.9 kg	20.2%
Light Truck Tyre	29 kg	23.5 kg	18.96%
Large Truck Tyre	67 kg	51 kg	23.88%
Off road / Tractor / Agricultural Tyre	150 kg	127 kg	15.33%

It should be noted that the weight information contained in Table D.1 above varies slightly from the weight of tyres used by the Central Statistics Office (CSO) in determining statistics in ROI. It should be noted that research into various branded tyre manufacturing companies state the weight of tyre to be 9.9kg.

Republic Of Ireland

Table D.2 Description of Codes

Category	Code	Description
1	62510	Tyres, pneumatic, new, of a kind used on motor cars (including station wagons and racing cars).
2	62520	Tyres, pneumatic, new, of a kind used on buses or lorries
3	62541	Tyres, pneumatic, new, of a kind used on motorcycles
4	62551	Other new pneumatic tyres having a "herring-bone" or similar tread
5	62559	Other new pneumatic tyres
6	62592	Retreaded tyres
	62593	Used pneumatic tyres (may include part worn)
7	62594	Solid or cushion tyres, tyre treads and tyre flaps of rubber
	62530	Tyres, pneumatic, new, of a kind used on aircraft

¹⁸ Source: The Rubber Manufacturers Association and Richard Warbrick (Goodyear Dunlop Ireland)

Based on the information provided above from Intrastat figures, Table D.3 below provides an average weight per tyre for each of the tyre categories listed. These assumptions have been used in following calculations for the Republic of Ireland.

Table D.3 Average Weight per Tyre, 2010

Category	Type of Tyre	Import	Export	Used Tyre Weight
		kg/ tyre	kg/ tyre	kg/ tyre
1	Car	10.3	7.0	10.6
2	Bus / Lorry	43.1	10.9	173.6
3	Motorcycles	5.6	5.5	5.6
4	Other pneumatic tyres	49.6	54.6	48.4
5	Bicycle	0.6	0.0	0.6
5	Other new pneumatic tyres	30.9	13.5	36.4
6	Retreaded tyres	23.2	39.7	20.7
6	Used pneumatic tyres	16.6	18.5	14.4
7	Aircraft	0.0	12.2	13.8
7	Inner tubes or rubber	0.9	0.6	0.9
7	Solid or cushion tyres	0.0	0.0	0.0
	Total	12.5	10.1	13.0

Appendix E

Import and Export Data for ROI

E Import and Export Data for ROI

Table E.1 Tyres, pneumatic, new, of a kind used on motor cars (including station wagons and racing cars)

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62510	Argentina	0	40
	Austria	21	3,696
	Belarus	18	132
	Belgium	2,462	240,632
	Canada	25	2,037
	Chile	29	2,950
	China	8,466	702,194
	Czech Republic	173	16,328
	Denmark	1	61
	Finland	63	5,759
	France	820	88,467
	Germany	1,462	142,777
	Great Britain	6,235	744,626
	Hong Kong	0	1
	Hungary	849	88,587
	India	56	2,554
	Indonesia	309	31,935
	Italy	415	49,748
	Japan	265	20,426
	Luxembourg	11	170
	Malaysia	7	898
	Melilla	18	3,071
	Netherlands	1,823	152,815
	North Korea	1	104
Northern Ireland	704	83,613	
Philippines	4	1,000	
Poland	1,021	115,638	
Slovakia	136	19,011	

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
	Slovenia	199	22,334
	South Africa	51	4,283
	South Korea	1,951	133,550
	Spain	826	83,393
	Sweden	1	84
	Switzerland	15	908
	Taiwan	914	100,340
	Thailand	271	27,157
	Tokelau Islands	8	3,219
	Turkey	84	9,040
	United Arab Emirates	66	5,704
	United States	156	9,164
	Vietnam	14	1,433
	Yemen	0	8
	Other (Non-EU)	25	3,392
62510 Total		29,975	2,923,279

Table E.2 Tyres, pneumatic, new, of a kind used on buses or lorries

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62520	Austria	3	125
	Belgium	2,361	44,500
	China	1,894	47,735
	Czech Republic	9	230
	Finland	0	7
	France	6	456
	Germany	259	12,791
	Great Britain	1,887	51,999
	Hungary	14	1,091
	India	0	13
	Indonesia	1	45
	Italy	74	1,906

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
	Japan	415	9,111
	Luxembourg	42	711
	Malaysia	0	8
	Melilla	0	20
	Morocco	0	2
	Netherlands	284	5,811
	Northern Ireland	225	13,181
	Poland	803	13,168
	Singapore	36	1,435
	Slovakia	64	6,569
	Slovenia	37	1,399
	South Africa	2	102
	South Korea	1	66
	Spain	3,347	45,288
	Taiwan	3	308
	Tokelau Islands	2	367
	Turkey	688	30,792
	United States	5	118
62520 Total		12,462	289,354

Table E.3 Tyres, pneumatic, new, of a kind used on aircraft

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62530	Great Britain	0	6
	United States	0	21
62530 Total		0	27

Table E.4 Tyres, pneumatic, new, of a kind used on motorcycles

SITC	Original Country of Origin	Jan-Dec 2011	
		Tonnes	Supply Units
62541	Belgium	5	950
	Czech Republic	0	19
	France	52	9,660
	Germany	22	4,297
	Great Britain	45	7,069
	Indonesia	2	370
	Japan	1	132
	Northern Ireland	1	297
	Spain	0	99
	Sweden	0	10
	United States	0	58
62541 Total		128	22,961

Table E.5 Tyres, pneumatic, new, of a kind used on bicycles

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62542	France	1	6,186
	Germany	3	3,873
	Great Britain	32	50,921
	Italy	1	2,541
	Netherlands	1	977
	Sri Lanka	2	2,211
	Taiwan	15	24,469
	Thailand	0	601
	United States	0	10
62542 Total		55	91,789

Table E.6 Other new pneumatic tyres having a "herring-bone" or similar tread

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62551	Austria	2	52
	Belgium	50	596
	China	36	4,393
	Czech Republic	17	486
	Finland	3	11
	France	22	136
	Germany	54	451
	Great Britain	652	18,425
	Hungary	2	26
	India	1,979	33,598
	Indonesia	0	2
	Ireland	0	5
	Israel	27	185
	Italy	2	32
	Japan	0	2
	Lithuania	51	533
	Malaysia	0	3
	Melilla	2	120
	Netherlands	229	5,101
	Northern Ireland	37	909
	Poland	1	15
	Portugal	9	11
	Russia	0	1
	Spain	251	2,685
	Sweden	6	1,023
	Switzerland	2	34
Taiwan	1	447	
Thailand	1	22	
Tokelau Islands	0	2	
Turkey	33	573	
United States	0	2	
62551 Total		3,469	69,881

Table E.7 Other new pneumatic tyres

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62559	Belgium	13	678
	China	81	3,033
	France	5	54
	Germany	3	177
	Great Britain	150	5,471
	India	32	980
	Italy	1	6
	Japan	13	729
	Netherlands	102	2,248
	Northern Ireland	66	1,560
	Philippines	9	466
	Poland	3	149
	Spain	11	283
	Sri Lanka	17	578
	Sweden	1	6
	Turkey	4	94
United States	0	35	
62559 Total		511	16,547

Table E.8 Inner tubes or rubber

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62591	Australia	0	91
	China	105	62,535
	France	12	12,500
	Germany	5	23,851
	Great Britain	86	170,664
	India	0	511
	Israel	0	109
	Italy	1	945
	Japan	0	110

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
	Netherlands	26	2,492
	Northern Ireland	6	1,673
	Poland	8	5,995
	South Africa	0	24
	South Korea	99	66,665
	Sri Lanka	0	2,080
	Taiwan	15	38,822
	Thailand	4	23,459
	United States	0	273
62591 Total		367	412,799

Table E.9 Retreaded tyres

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62592	Ceuta	0	3
	Germany	2	192
	Great Britain	335	21,069
	Ireland	1	19
	Japan	10	800
	Netherlands	199	4,005
	Northern Ireland	13	755
	Poland	1	116
	Spain	115	2,145
	United States	1	27
62592 Total		677	29,131

Table E.10 Used pneumatic tyres

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62593	Great Britain	126	5,718
	Netherlands	32	845
	Northern Ireland	27	1,048
	Switzerland	85	8,686
	Other (Non-EU)	0	12
62593 Total		270	16,309

Table E.11 Solid or cushion tyres, tyre treads and tyre flaps of rubber

SITC	Original Country of Origin	Jan-Dec 2010	
		Tonnes	Supply Units
62594	China	2	0
	Croatia	0	0
	Germany	8	0
	Great Britain	61	0
	India	87	0
	Japan	0	0
	Northern Ireland	1	0
	Spain	6	0
	Sri Lanka	397	0
	United States	9	0
	Vietnam	0	0
62594 Total		571	0

Table E.12 Tyres, pneumatic, new, of a kind used on motor cars (including station wagons and racing cars)

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62510	Angola	0	1
	Belgium	44	4,819
	Denmark	1	39
	Georgia	0	0
	Germany	3	1,487
	Great Britain	1,878	271,636
	Italy	0	26
	Mexico	0	14
	Netherlands	17	3,503
	Northern Ireland	245	29,760
	Slovakia	18	2,590
	Switzerland	1	389
	United Arab Emirates	0	2
62510 Total		2,207	314,266

Table E.13 Tyres, pneumatic, new, of a kind used on buses or lorries

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62520	Belgium	0	10
	Denmark	1	15
	Germany	26	584
	Great Britain	2,368	224,978
	Northern Ireland	125	5,716
	Slovakia	8	821
62520 Total		2,528	232,124

Table E.14 Tyres, pneumatic, new, of a kind used on aircraft

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62530	Oman	0	6
	United States	3	239
62530 Total		3	245

Table E.15 Tyres, pneumatic, new, of a kind used on motorcycles

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62541	Germany	0	29
	Great Britain	40	7,183
62541 Total		40	7,212

Table E.16 Tyres, pneumatic, new, of a kind used on bicycles

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62542	Canada	0	49
	Great Britain	0	42
62542 Total		0	91

Table E.17 Other new pneumatic tyres having a "herring-bone" or similar tread

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62551	France	1	2
	Germany	5	10
	Great Britain	198	3,663
	Hungary	30	620
	Northern Ireland	514	9,473
	Portugal	2	6
	Slovakia	2	6
62551 Total		752	13,780

Table E.18 Other new pneumatic tyres

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62559	Belgium	0	29
	Great Britain	22	3,451
	Indonesia	0	2
	Netherlands	8	125
	Northern Ireland	17	280
	Portugal	0	8
	South Korea	3	12
	Spain	3	67
	Switzerland	1	28
62559 Total		54	4,002

Table E.19 Inner tubes or rubber

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62591	Ghana	1	3,000
	Great Britain	1	1,731
	United States	1	300
62591 Total		3	5,031

Table E.20 Retreaded tyres

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62592	Germany	13	189
	Great Britain	123	3,045
	India	2	294
	Malaysia	1	30
	Northern Ireland	7	263
	Saudi Arabia	8	90
	United States	2	14
62592 Total		156	3,925

Table E.21 Used pneumatic tyres

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62593	Botswana	0	0
	Great Britain	1	45
	Honduras	28	2,278
	Moldova	0	12
	Northern Ireland	25	839
	Norway	13	258
	South Africa	10	250
	United States	71	4,469
	Zambia	10	400
62593 Total		158	8,551

Table E.22 Solid or cushion tyres, tyre treads and tyre flaps of rubber

SITC	Original Country of Destination	Jan-Dec 2010	
		Tonnes	Supply Units
62594	El Salvador	12	0
	Great Britain	2	0
	Honduras	1	0
	India	0	0
	Saudi Arabia	0	0
	South Korea	0	0
	Switzerland	0	0
	Turkey	0	0
	United States	22	0
62594 Total		37	0

Appendix F

ROI Tyres Imported on Vehicles

F ROI Tyres Imported on Vehicles

The number and weights of tyres on imported vehicles are shown in Table F.1 below.

Table F.1 Tyres on vehicles imported and exported in 2010

Category	SITC Code	Vehicle Imports	Vehicle Exports	Vehicle Imports minus Exports	Tyres per vehicle	Total Number of Tyres	Average Weight (kg) per Tyre	Total Weight of Tyres (tonnes)
1	78120	92,309	1,836	90,473	4	361,892	10	3,711
2	78211 78219 78221 78223 78225 78227 78311 78319	10,049	2,401	7,648	6.6	50,624	43	2,180
3	78511 78513 78515 78516 78517 78519	2,136	613	1,523	6	9,138	6	51
4	78320	101	892	-791	4	-3,164	50	-157
5	78110 78229	687	243	444	4	1,776	5	9
		105,282	5,985	99,297		420,266		5,794

Table F.2 Average Number of Tyres for Category 2 Heavy Goods Vehicles

Unladen weight (kg)	Number of HGVs licensed for the first time in 2010	Number of tyres /HGV	Number of Tyres
812	27	4	108
813-1016	9	4	36
1017-1269	915	4	3,660
1270-1524	2,612	6	15,672
1525-2032	4,110	6	24,660
2033-4064	2,153	8	17,224
4065-8128	198	12	2,376
8129	486	12	5,832
Total	10,510	6.6	69,568

Appendix G

NI Local Authority Responses on Flytipping of Used Tyres

G NI Local Authority Responses on Flytipping of Used Tyres

As part of this Survey Local Authorities were contacted and information was requested on the illegal disposal of used tyres arising in each Local Authority area in both NI and ROI. Information from the Local Authorities' records of incidents of flytipping of used tyres or the use of used tyres in bonfires within the survey period was requested.

Table G.1 sets out the responses received from Local Authorities in Northern Ireland.

Table G.1 NI Local Authority Responses on Flytipping of Used Tyres

Local Authority	Response
Antrim Borough Council	Tyres are not accepted at Household Recycling Centres.
Ards Borough Council	In 2010/11 year 258 tyres arising from fly tipping and bonfire. Estimated 400 - 500 tyres burnt at other bonfire sites
Armagh City and District Council	From April 2010 – March 2011 a total of 122 incidents of flytipping were recorded by the Council. Of these, 16 of the incidents involved tyres.
Banbridge District Council	No routine data collected of the number of tyres managed by the council due to fly tipping and illegal dumping, however this figure is minimal.
Ballymena Borough Council	Figures for 2010/11 are not available as tyres were stored until a viable load for disposal was obtained. Since tyres have been reclassified as hazardous 1,400 tyres
Ballymoney Borough Council	In 2010/11 year 1,399 tyres of which 680 are inner tubes recorded as either fly tipped or from bonfires. Tyres are not accepted at Household Recycling Centres.
Belfast City Council	In 2011, 1,324 tyres recorded as either flytipped or disposed of on bonfires.
Cookstown Borough Council	In 2010/11 no tyres were recorded as used on bonfires and approximately 500 tyres were recorded as flytipped.
Derry City Council	No routine data is collected of the number of tyres managed by the council due to fly tipping and illegal dumping. These are included with overall tyre figure. In 2010/11 43 truck tyres and 12,700 car tyres were managed by the Council mainly arising from recycling centres where tyres are disposed of by members of the public. However figure for fly tipping and illegal dumping is estimated to be approximately 1,000 tyres. Derry City Council also noted that the Housing Executive removed approximately 70 tyres from land owned in 2011.
Dungannon & South Tyrone Borough Council	In 2010/11 there were no records kept of the number of illegally dumped tyres collected from fly tipping, however tyres are removed and stored until sufficient volume has

Local Authority	Response
	arisen for collection. These tyres are then included with tyres arising from council vehicle maintenance. Tyres are not accepted at Household Recycling Centres.
Fermanagh District Council	No routine data collected by the council of tyres arising due to fly tipping In 2010/11 11.34 tonnes of tyres were sent for recycling. This includes legal and illegal dumped tyres. Tyres are accepted at one Household Recycling Centre.
Limavady Borough Council	In 2010 286 car tyres arising due to fly tipping. In 2011 45 car, 15 truck and 12 agricultural tyres arising due to fly tipping. Tyres are not accepted at Household Recycling Centres.
Lisburn City Council	In 2010/11 year 825 tyres arising from fly tipping and bonfires.
Magherafelt District Council	No routine data collected by the council of tyres arising due to fly tipping, however this figure is minimal. These tyres are included with tyres arising from Household Recycling Centres and council's tyre work shop.
Moyle District Council	In 2010/11 year approximately 250 tyres were collected from bonfire. Tyres are accepted at Household Recycling Centres.
Newry and Mourne District Council	In 2010- 2011 year 433 tyres were recorded as illegally dumped. 49.11 tonnes of tyres where accepted for recycling at Household Recycling Centres.
Newtownabbey Borough Council	Newtownabbey Borough Council had 16 recorded incidents of illegal disposal of tyres in 2010/11.
North Down Borough Council	In 2011 there were no records of the number of illegally dumped tyres collected. There are currently approximately 30 used tyre stockpiles on Council premises. In February 2012, 386 tyres were removed (including 109 car tyres (off rim), 249 car tyres (on rim), 16 lorry tyres (off rim) and 12 motorbike/bike tyres). These would have been brought in from a mixture of beaches/street cleansing, parks etc. In 2011 there were no records of the number of tyres brought to recycling centres by members of the public. However, no tyres have been accepted onto sites. In 2011 there were no tyres brought to Council recycling sites by staff as they were stockpiled elsewhere on Council premises.
Omagh District Council	In 2010/11 year 1.04 tonnes of tyres were recorded as illegal dumped or fly tipped. Tyres are not accepted at Household Recycling Centres.
Strabane District Council	In 2010- 2011 year 597 tyres were recorded as either fly tipped or from bonfires. Tyres are not accepted at Household Recycling Centres

Appendix H
**RoI Local Authority Responses on
Flytipping of Used Tyres**

H ROI Local Authority Responses on Flytipping of Used Tyres

As part of this Survey Local Authorities were contacted and information was requested on the illegal disposal of used tyres arising in each Local Authority area in both NI and ROI. Information from the Local Authorities' records of incidents of flytipping of used tyres or the use of used tyres in bonfires within the survey period was requested.

Table H.1 sets out the responses received from Local Authorities in the Republic of Ireland.

Table H.1 ROI Local Authority Responses on Flytipping of Used Tyres

Local Authority	Data Provided on Flytipped Tyres
Clare County Council	In 2010 there were 5 tyre related complaints received in the whole year. <ul style="list-style-type: none"> ▪ 2 No. complaints involved illegal dumping of 40 to 60 tyres. ▪ The other 3 complaints involved illegal dumping of smaller quantities (20 tyres or less).
Cork City Council	In 2010 there was one recorded flytipping incident which included approximately 10 tyres. This was an incident of illegal dumping of waste at the rear of a housing estate. As a follow up the Council also investigated stockpiling of approximately 40 tyres at the rear of a house in the area.
Dun Laoghaire Rathdown Council	In 2010 there were no recorded incidents of illegal disposal of used tyres. The Council implemented a waste enforcement programme in 2007. This programme also includes a bulky household waste collection service in selected housing estates. This service collects 1-2 tyres held from individual households.
Fingal County Council	In 2010 there were 58 recorded incidents of illegal disposal of used tyres. These were generally incidents involving small numbers of tyres, however one incident included approximately 90 used tyres being illegally dumped.
Galway County Council	Received approximately 22 complaints in relation to the illegal dumping or burning of tyres over the last two years. We do not have quantities of the amount of tyres dumped or burned.
Kildare County Council	Dealing with one quarry that is storing tyres illegally but other than that and a small amount of fly tipping it is not a major problem.
Kilkenny County Council	Minor incidents of maybe 40 tyres twice in the last two years.
Laois County Council	In 2010 the Council did not record any significant incidents of the illegal disposal of used tyres. A small number of complaints were received regarding small numbers of

Local Authority	Data Provided on Flytipped Tyres
	tyres being dumped for bonfires around Halloween.
Longford County Council	In 2010 the Council recorded 11 incidents of flytipping or burning of used tyres. A number of these incidents involved garages storing used tyres in unsecured areas, which is an issue that the Council have highlighted as being a key issue for the management of used tyres by the Council. The majority of the incidents involved small numbers of tyres however one incident involved a waste collector collecting used tyres and stockpiling greater than 1,000 tyres in an unauthorised rented facility.
Leitrim County Council	Not a major problem. One incident of no more than one tonne.
Louth County Council	Approximately 5.5 Tonnes of used tyres were accumulated and disposed of by Louth County Council in 2011. This happened on seven separate occasions.
Mayo County Council	<p>Number of Incidents Number of recorded incidents of illegal disposal of used tyres within Mayo County Council in the last two years (mid august 2010-mid august 2012) = 26 incidents</p> <p>Illegal Dumping / Fly Tipping Of the 26 recorded incidents, the majority were typically small quantities of used tyres dumped on roadside 2 -12 used tyres.</p> <p>Larger Quantities Of Used Tyres Of the 26 incidents one location is listed as having 25 used tyres dumped along the roadside, four of the locations had approx 50 -80 used tyres dumped in each location along the roadside.</p> <p>Bonfires Five of the incidents related to used tyres burned in bonfires/concerns of used tyres being stacked for a bonfire.</p>
Monaghan County Council	<p>31 incidents of unauthorised disposal of used tyres since Jan 2010 - 7 large scale incidents, 4 incidents of burning, and the rest are smaller scale. Most incidents occur on public roadways and some occur on private land. When an incident occurs on public grounds the council foot the cost for removal and disposal.</p> <p>Any incidents on private lands are down to the landowner to sort out. There were 3 such incidents since Jan 2010.</p> <p>The council have spent just under € 2000 removing and disposing of used tyres since Jan 2010.</p>
Roscommon County Council	Incidents in the last 2 years. 200 tyres in a bog summer 2011, another 100 in a bog December 2011. 2 separate incidents of 20-50 tyres dumped in lay-bys.
Sligo County Council	Several incidents were reported. Two incidents of large volumes dumped in laybys. One incident of burying tyres recently large volumes.
South Tipperary County Council	No major incidents

Local Authority	Data Provided on Flytipped Tyres
Wicklow County Council	Not regarded as a huge problem in Wicklow. They get about 200-300 fly tipped a year generally in groups of approximately 20 tyres.

Appendix I

**Calculations for Local Authority Responses
on Flytipping of Used Tyres**

I Calculations on Local Authority Responses on Flytipping of Used Tyres

NI ILLEGAL DISPOSAL - 2010/11

	Tyres Burnt or Illegally Disposed	Tonnes	Population (mid year estimate 2010)
Antrim			54,100
Ards	708	5.5932	78,200
Armagh			59,400
Banbridge			48,000
Ballymena			63,500
Ballymoney	1399	11.0521	30,600
Belfast	1324	10.4596	268,700
Carrickfergus			40,200
Castlereagh			67,000
Coleraine			56,800
Cookstown	500	3.95	36,700
Craigavon			93,600
Derry	1000	7.9	109,800
Down			70,800
Dungannon			57,700
Fermanagh			63,100
Larne			31,700
Limavady	234	0	33,600
Lisburn	825	6.5175	117,800
Magherafelt			44,700
Moyle	250	1.975	17,000
Newry & Mourne	433	3.4207	99,900
Newtownabbey			83,600
North Down			79,900
Omagh	132	1.0428	52,900
Strabane	597	4.7163	40,100
	7,402	56.6272	1,799,400

885,300

Scaled Up Number of Tyres:	
15,045	115.10

2.032531345

Used Car Tyre:	7.9
Light Truck Tyre:	23.5
Large Truck Tyre:	51
Agric Tyre:	127

ROI ILLEGAL DISPOSAL - 2010/11

	Tyres Burnt or Illegally Disposed	Tonnes	Population
Carlow County Council			54,612
Cavan County Council			73,183
Clare County Council	160	1.264	117,196
Cork City Council	50	0.395	119,230
Cork County Council			399,802
Donegal County Council			161,137
South Dublin County Council			265,205
Dublin City Council			527,612
Dun Laoghaire Rathdown			206,261
Fingal County Council	375	2.9625	273,991
Galway City Council			75,529
Galway County Council			175,124
Kerry County Council			145,502
Kildare County Council			210,312
Kilkenny County Council	80	0.632	95,419
Laois County Council			80,559
Leitrim County Council	127	1.0033	31,798
Limerick City Council			57,106
Limerick County Council			134,703
Longford County Council	1000	7.9	39,000
Louth County Council	696	5.4984	122,897
Mayo County Council	400	3.16	130,638
Meath County Council			184,135
Monaghan County Council			60,483
Offaly County Council			76,687
Roscommon County Council	350	2.765	64,065
Sligo County Council			65,393
North Tipperary County Council			70,322
South Tipperary County Council			88,432
Waterford City Council			46,732
Waterford County Council			67,063
Westmeath County Council			86,164
Wexford County Council			145,320
Wicklow County Council	250	1.975	136,640
	3,488	27.5552	4,588,252

1,130,874

Scaled Up Number of Tyres:	
	111.80
	14,152

4.057261905

Used Car Tyre:	7.9
Light Truck Tyre:	23.5
Large Truck Tyre:	51
Agric Tyre:	127