



European Tyre Recycling Association

## Summary Report

2012 - 2013

1. **ETRA** is defined in its statutes as a member-driven European association that focuses exclusively on the treatment of post-consumer tyres and selected rubber wastes, and the use of the output materials in new eco-nomic streams. Outputs include but are not limited to : rubber, steel and textiles, and may include such diverse products as gases and oils. This brief report describes some of the recent steps that ETRA has taken to help to improve recycling levels in the EU and beyond, and to assist members in attaining their commercial goals.
2. **ETRA membership** reflects representation of virtually all sectors of the tyre recycling industries – from management systems, collection companies, equipment manufacturers, bodies that pursue research, development and investment, as well as the recycling professionals who prepare and utilise recycled tyre materials in an array of products and applications. It is important to note that a preponderance of members are Micro, Small or Medium sized enterprises which work principally within the EU Member States and peripheral areas. In recent years, membership has grown to include many non-EU companies, and hence, new countries and regions are also represented. As an example three new companies are located in Asia and two in the Middle-east.
3. **ETRA, its Board and members** have worked from the beginning to improve the environment for recycling and to participate in dialogues with other recycling organisations, as well as with national, EU and international legislative bodies. These efforts have led to many successes during the past twenty years, to which ETRA and its partners contributed greatly. As discussed during the 2012 Conference, ETRA partners are both big and small – covering more than 20 different industries and sectors, contributing to the advances made in the use of recycled materials in substitution of virgin resources. While there are still ‘legal’ issues that must be resolved, the end of waste definition, among them, the marketplace has become increasingly important, particularly in the current economy. New materials and new products that are adaptable to traditional markets have become a crucial means of growth.
4. **Tyre management systems** vary considerably from one to another, however, the majority of EU States support at least one tyre management programme to ensure the collection of post-consumer tyres – as either a public or private service. Many States also ensure that post-consumer tyres are handled and treated in an environmentally sound manner – whether for material or energetic outputs. With the common goal of sustainable development and decreasing reliance on virgin resources - landfilling has declined to less than 10%, while recycling alone, has increased to +40%. In order to sustain these rates of growth, an increasing number of States offer various forms of incentives to increase recycling levels, the diversity of material and product outputs and their use in a broad range of applications.
5. **The availability of recycled tyre materials and products** has increased in 2012 even as tyre availability has slowed and accessing tyres has become more difficult in certain regions. Several traditional markets e.g., loose shred and chips, granulate for sport surfaces, etc., have also lagged, while some prices have also fallen. Nonetheless markets for finer materials suitable for different uses, e.g., compounding, etc., moulded and insulation-related products, among others, have shown some upward movement. A few markets have actually begun to improve and expand in recent years, due in part to improved efficacy of equipment and new technologies. These advances have contributed to the availability and diversity of higher valued-added outputs which in turn has begun to stimulate the opening of new options and opportunities. To perpetuate the momentum, in recent years ETRA has focused on working with members and other interested parties to develop projects and programmes that meet specific industry objectives, examples of which are to use a broader range of technologies, to increase the range of more sophisticated materials, and to expand the opportunities for disposing or using wastes generated from processing, etc.

6. **Research programmes and funded projects** are an important aspect of ETRA's activities. Today, ETRA is directly involved in four principal projects, with three additional projects currently being reviewed by various EU funding sources. Projects can focus on Research (R), Applications (A) or Technologies (T). Among the current projects, each includes one or more tyre recyclers to provide the necessary materials and/or to create the necessary products, as well as one or more commercial partner who will help to adapt project results to commercial applications. It must also be noted that many projects offered under EU funding schemes also require the participation of SME associations to ensure representation of SMEs.

The projects currently in-work include :

Type	Title	Focus	Partners	Time
R	SMART	Dual focus – To expand the use of recycled tyre rubber in sports complexes beyond traditional play surfaces, e.g., entry/exit ramps, parking areas, road furniture, among others, and To develop a means of compression moulding without the need for virgin additives.	10 *	3 yrs
A	Persuade	Use of prefabricated road segments for secondary and tertiary and local roads.	10*	6 yrs
R	TYGRE	Use of pyrolysis-gasification to produce high value added materials for substitution of virgin materials. Material outputs can replace a variety of qualities of Silicon Carbide.	12 *	4yrs
A	Twinclotoes	Sorting, treatment and use of steel fibers from ambient tyre recycling Technologies in cement applications.	4 *	3 yrs

*\*indicates that representative commercial partners are participating directly in the project*

Projects currently under review include :

Type	Title	Focus	Partners	Time
R	SPHIRS	Treatment of textile residues to develop and then produce insulation materials that meet performance requirements for noise, thermal and vibration applications	9*	3 yrs
A	Insul-eco	Treatment of textile residues to produce insulation panels for use in a variety of construction applications	4*	2 yrs
A	Anagennisis	Three pronged : treatment and use of the materials produced from tyre recycling : rubber, metals and textile. Recyclates will be used in wide range of cement based products for weight bearing applications	18 *	3 yrs

Examples of projects submitted by ETRA members :

Type	Title	Focus	Partners	Time
A	ACE	Eco-rubber - A hybrid material produced from recycled plastics and Rubber (Sweden, Greece : Paulsson)	4	3 yrs
T	BTRC	Ultra-high pressure water-jetting technology to recover rubber and Steel (Belgium : Vervaeet)	3	3 yrs
A	Protrack	Railway profiles made from recycled tyre materials (Spain, Gelpi)	3	3 yrs
A	Roadtire :	Use of tyres materials in a range of road construction applications (Greece, Keridis)	3	3 yrs
A	Woodrub :	Hybrid materials made from Wood and rubber composites for use in road construction (Greece, Keridis)	3	3 yrs

7. **ETRA participation** has evolved from representation only as an SME recycling organisation, to the current role of direct involvement in six specific aspects of the larger, multi-partner projects. These roles include – but are not limited to :
- a. Identifying potential members/partners of the project partenariat ;
  - b. Assisting in the development of the project business plan geared towards including recycling professionals and post-programme commercialisation;
  - c. Identifying the means of including more diverse representation of the recycling chain to include tyre sourcing and flow options, as well as continuation activities for post-project periods;
  - d. Assisting in the development of a marketing strategy for the output materials and potential applications, and determining the opportunities for further study through continuing programmes or projects. It is important to note that the Twincletoes and Anagennis projects are outgrowths of Ecolanes (2006 – 2009), taking the technology to the next level;
  - e. Preparing a programme of dissemination and exploitation of the results, which includes potential presentations at the annual conference, publications, and or other activities in which ETRA participates;
  - f. Proposing the inclusion of broader based dissemination activities which include exchanges of experience, etc., focusing on training for specialised applications of project information with ETRA members and other interested parties through workshops, training seminars, and/or coaching.
8. **ETRA Conferences** are a critical basis for dissemination, networking and industry contacts. The 2012 Conference attracted 109 delegates from 30 countries. Seventy-four of the delegates are directly involved in at least one sector of the tyre recycling industry – from management and collection systems (7), to granulate production (36), to new technologies (15), product development and production (12). Four delegates are currently commodity traders specialising in granulate and powders. The remaining delegates represented a wide variety of research and/or development bodies – both small and large, and ‘observers’ or other interested parties.

The 19th ETRA Conference focused on the current status and recent progress in the tyre recycling industries – with a view towards the future. In 2012, the most critical issues for the industry were : the legislative context and how recyclers can comply, the ongoing issue of tyre sourcing and the most sustainable means of recycling – and finally, the issue that most consumes the industry – the markets available for the materials and products that issue from recycling.

The conference, **RESPONSIBILITY AND INNOVATION : SUSTAINABLE PRODUCTS – NEW MARKETS** was organised in four parts – each focusing on a key issue. Part 1 concerned legislative and political issues from the EU, State and recycling industry levels. Part II explored some of the new relationships that have been built to support entry into new market arenas. Part III, hosted in cooperation with EACI <sup>1</sup>, highlighted the opportunities available to assist SMEs in bridging the gap from laboratory/pilot level activities to viable commercial ventures. Current projects and opportunities

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<sup>1</sup> **EACI** : The European Union has launched a number of initiatives to promote eco-innovation and support the implementation of the Environmental Technologies Action Plan under the Competitiveness and Innovation Programme. EACI was formed in 2005 as one of four bodies to facilitate the coming together of business and innovation in order to create sustainable solutions that make better use of precious resources and reduce the negative side effects of our economy on the environment.

Between 2008 and 2013 nearly €200 million have become available to fund projects that promote eco-innovation in Europe. The objective is to boost Europe’s environmental and competitive standing by supporting innovative solutions that protect the environment while creating a larger market for ‘green’ technologies, management methods, products and services.

The Eco-Innovation Programme works towards a sustainable future by changing consumption and production patterns and developing technologies, products and services to reduce our impact on the environment. Priority is given to sectors that can offer significant potential improvement in the way their operations, products or services im-pact on the environment. To date, four priorities have been identified : recycling materials (including tyres), buildings and construction, the food and drink sector, and green production and procurement.

were presented. Part IV focused on the evolution(s) of pyrolysis as a viable, sustainable means of treating large quantities of post-consumer tyres to produce an array of valuable material outputs.

The Recyclers' Forum was an interactive session seeking input from delegates about their experiences in sourcing, developing and marketing their materials and products. Some of the driving forces and factors at play in the tyre recycling marketplace were identified and discussed and potential resolutions were proposed. Delegates received a brief questionnaire that helped to define some of the most prevalent issues. Factors included legislative and political dynamics, environmental concerns, management issues (producer responsibility), financial considerations, among others. The floor was open to delegates who raised and discussed issues that have had an impact on their business.

The conference evaluation, completed by two thirds of the delegates, indicated that they felt that this was one of the best events – including the topics covered, information provided, speakers and organisation of the activities. Half of the delegates requested additional information on several points including how to become more involved in ETRA activities. The key concerns surrounded tyre sourcing – and ETRA's response, new markets and opportunities for participation in funded projects. Many of the points raised were discussed at a subsequent Board Meeting, and plans made to respond to the requests during the summer. Many of the results will also be discussed at the Annual General Assembly in March 2013 and at the 20<sup>th</sup> Annual Conference.

9. **Programme revisions for 2012 – 2013.** Seven key activities were identified for updating and/or development. The 15<sup>th</sup> September was the target date for completion of the tasks. The seven activities are : revamping of the annual questionnaire, identifying additional sources of tyres for recycling, development of the 20<sup>th</sup> annual conference, revision of the Introduction, revision and expansion of the web-site, initiation of a relationship with Brussels Airways, identification and development of potential new projects for funding submissions.

**The Annual Questionnaire** : Context - The Annual Questionnaire was initiated in 1999 as part of the Veridis Project (UK) which performed a mass balance study on tyres and the tyre market. ETRA provided the baseline data on tyres and arisings, and, at the request of Eurostat, continued to collect and provide data concerning post-consumer arisings, treatments and use.

The 2010 – 2011 annual tyre questionnaire received few responses from the national tyre management bodies (4). It was agreed that the data are important to recyclers - both material producers as well as users and, that the questionnaire was cumbersome and should be reconceptualised and rewritten. During the revision, the objective remained the same – to access information from the Member States regarding the quantities of tyres arising each year – and the principal routes used for disposal or treatment – which could provide insights into national policy and priorities. The revised questionnaire was circulated during the first week of October 2012, the same period as in prior years. From a low of four in 2011, the number of responses jumped to 17 in 2012. It should be noted that many of the non-responding States are relatively small, or among those without an official government officer responsible for the tyre programme. Follow-up has been sent to each respondent and new con-tacts are being made in the remaining States.

**Identification of tyre sources** : Subsequent to the completion of the producer responsibility implementation in many States, it has become apparent that many recyclers are struggling to find sufficient tyres available for treatment. Increasing quantities of tyres appear to be baled and shipped outside of the EU for burning – both for energy recovery and for disposal without energy recovery. In several instances, these practices are covered under legislation, often proposed by recyclers themselves (UK).

The sourcing issue was raised three separate times during the 2012 Conference - once in the questionnaire circulated prior to the round table – once as part of the round table, and once by EACI. In the questionnaire, 31 delegates noted that it is a problem – one of the most critical issues faced by recyclers (in addition to material dumping, reduced markets, and the general economy). This is one area in which ETRA and members of the Board can potentially assist members through direct contact.

To that end, ETRA has initiated contacts with potential supplier groups – with options for contacts with others. The direction of future discussions will have to be determined by the Board. A proposal will be presented for discussion. It

was also proposed that a brief questionnaire be sent to members to determine the extent of the problem and their perceptions of how to resolve this critical issue. ETRA must lead the way to a resolution of this issue. (A questionnaire is included in the membership packet.)

It should be noted that initial contacts were made with recyclers. The most important comment on which they agreed was that recyclers can no longer depend on receiving a gate fee for tyres. This could have a critical impact upon the market, particularly in States that have 100% collection and good relations with recyclers. Members of the Board have agreed to speak with colleagues within and outside of their States to get a baseline on the issue. The issue will again be raised during the 2013 ETRA Conference and GAM.

10. **The Introduction to Tyre Recycling** is being revised for distribution at the 20<sup>th</sup> anniversary Conference. The Introduction was first prepared by ETRA for presentation to the delegates at the Basel Convention during the discussions, and the preparation of the 'Guidelines for post-consumer tyres'. Since that time, more than 25,000 copies of various editions have been published and circulated in English as well as 5 other languages. Since 2000, the Introduction had been published biennially, with nominal changes made for each edition. The last major change in format and content was made in 2010.

In addition to the Introduction, ETRA is attempting to complete a booklet of instructions for the preparation and use of recycled tyre materials in civil engineering applications. The content was originally prepared by delegates for the CEN Workshop Agreement to illustrate how a variety of applications could be constructed. Twenty profiles have been identified and are being revised.

11. **Brussels Airlines** contacted ETRA during the summer of 2012. On the basis of earlier communications, BA offered ETRA a sponsoring package for 2013 that will include a discount on travel for the 20<sup>th</sup> Conference for all delegates in the EU. Board members will be offered a 10% discount on flights to Board Meetings in Brussels. Brussels Airlines will be designated the official airline for ETRA and for the 20<sup>th</sup> Conference. They have sent an information package for distribution to ETRA members and will provide display materials for conferences, workshops and general meetings.

***We look forward to receiving your comments and recommendations for additional activities during 2013.***