

# Leaders in advanced rubber re-manufacturing

TYRE & CONVEYOR BELT RESOURCE RECOVERY SERVICES

# The Tyrecycle Begins

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When Tyrecycle began in 1992, it was the waste tyre division of a major tyre manufacturer. Today, Tyrecycle is an important part of the highly regarded integrated resource recovery group, ResourceCo.

Tyrecycle:

- Has a national collection and processing footprint with plants in every state.
- Is Australia's oldest and largest recycler of waste tyres and conveyor belts.
- Has long-term contracts for collection with the major tyre manufacturers and retailers.
- Has a manufacturing infrastructure that is second to none in the Australian market including Australia's largest crumbing plant based at our Head Office in Somerton, Melbourne.

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## OUR VISION IS:

**TO BE THE MARKET LEADER WITHIN THE AUSTRALIAN TYRE RECYCLING INDUSTRY BY PROVIDING SUPERIOR SERVICE IN AN EFFICIENT, ENVIRONMENTALLY SOUND, SAFE AND SOCIALLY RESPONSIBLE MANNER**

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Our commitment is to eliminate the sending of tyres to landfill or whole-baled tyres being sent off-shore. We are the only producer of Tyre Derived Fuel (TDF) that can guarantee a full chain of custody for all materials received, processed and supplied; ensuring that our Crumb and TDF is used in an environmentally sound way. It's a promise we stand by.

We strongly believe that we all need to be smarter about how we use the earth's limited resources. At Tyrecycle we're leading the charge with initiatives that put us at the forefront of tyre recycling through the reuse of rubber products.

# Health, Safety, Environment and Quality Assurance

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Tyrecycle was integral in the establishment of the Australian Tyre Recycling Association and is an accredited member of the Tyre Stewardship Australia. Our partnerships and industry affiliations are an integral step in developing and strengthening the rubber recycling industry. It is inherently important to increase public awareness of the dangers in the unsustainable disposal of EOL tyres and the benefit of re-use.

## CERTIFICATIONS AND ACCREDITATIONS







TYRECYCLE'S OPERATIONS REDUCE AUSTRALIA'S GREENHOUSE GAS (GHG) EMISSIONS BY

**100,000 tonnes Co2 p.a.**

THAT'S THE SAME AS TAKING **21,276** CARS OFF AUSTRALIAN ROADS

EVERY TONNE OF TYRES RECYCLED REPLACES  
THE ANNUAL PRODUCTION OF

**35 rubber trees**

TYRECYCLE CONSERVES **65,800**  
HECTARES OF NATIVE FORESTS

Reference: Boomerang Alliance, October 2015.

## Why it's so Important

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It is estimated that 51 million equivalent passenger units (EPUs) make their end of life in Australia each year\*. Approximately 12 million EPUs are processed by Tyrecycle.

And rather than dwell on the irresponsible management of waste tyres by some Australian tyre merchants, contributing to extreme fire hazards, toxic pollution and the major risk of spreading Dengue Fever in Australia and Asia, we've focused on the solutions we provide for sustainable business.

By expanding tyre recycling and the application of tyre products, Tyrecycle will not only reduce the number of tyres sent to landfill but be able to create a cleaner, healthier environment.

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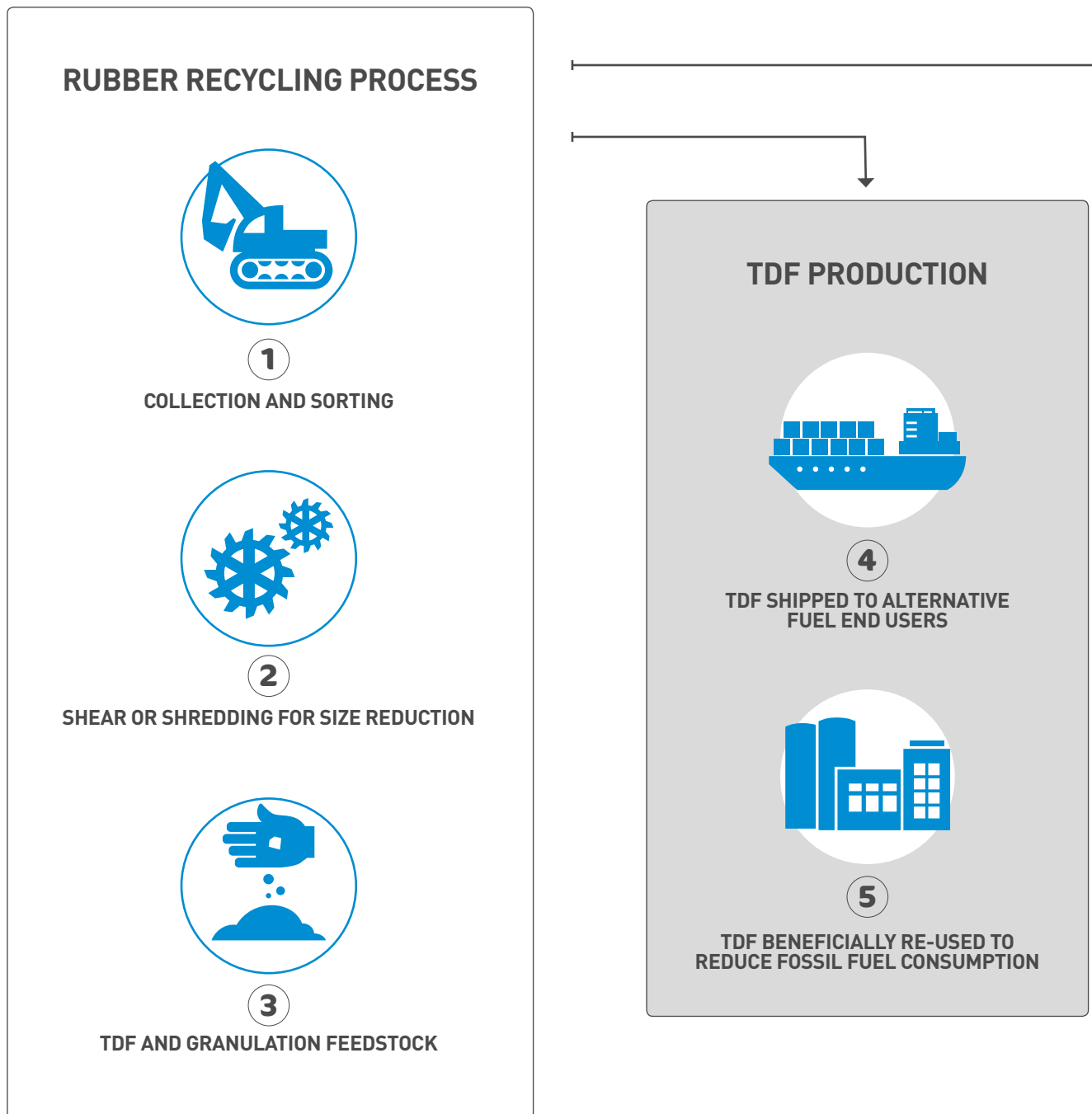
**EVEN THE SMALLEST NUMBER  
OF DUMPED TYRES CAN CREATE  
A DANGEROUS BREEDING  
GROUND FOR MOSQUITOES THAT  
TRANSPORT DISEASE**

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[\*Stocks and Fate of End-of-Life Tyres, 2013-14 Study, Hyder Consulting, 2015]

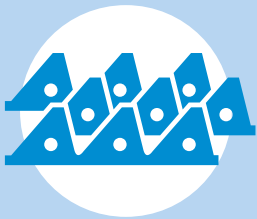


# The Rubber Recycling Process



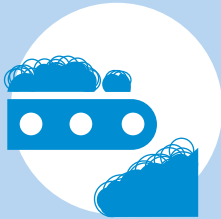
**EVERYTHING HAS A USE.**

## CRUMB AND GRANULE PRODUCTION



4

SHRED ENTERS RASPER  
TO LIBERATE STEEL



5

STEEL IS REMOVED FROM THE RUBBER



6

ENTERS THE GRINDING MILLS FOR SIZING



7

END PRODUCTS OF RUBBER CRUMB  
AND GRANULES

## Retail Partners

Tyrecycle has formed partnerships with over 1,000 tyre retailers across Australia, including major corporate retailers, independent retailers, governments and local councils. Our collection fleet services these customers Australia-wide to ensure thousands of tyres avoid landfill each year.

Our partners recognise the importance of correct tyre disposal and the value of recycling tyres into new products. Tyrecycle values these relationships and their commitment to providing a safer and more sustainable environment for the community.

More information on who our retailers are, and which is closest to you, can be found on our web site at [tyrecycle.com.au](http://tyrecycle.com.au)

## Mobile Shredder

In 2015 we commissioned our first mobile shredder to assist with processing waste tyres and clearing remote and vulnerable tyre stockpiles throughout Australia. The shredder is the first of its kind in Australia and has already begun various projects.

Our shredder has the unique ability to process waste tyres to produce a customised rubber chip to the same standard and quality of the chips produced in our facilities. This allows us to instantly use the recycled rubber chips for energy recovery or further process the chips to create rubber granules and powders.

For more information on our mobile shredder visit our website [tyrecycle.com.au/news/mobile-shredder](http://tyrecycle.com.au/news/mobile-shredder)



# Beneficial Re-use

Tyrecycle’s expertise in creating Tyre-Derived Fuel (TDF) for cement kilns is combined with parent-company ResourceCo Asia’s expertise and direct contract relationships within the cement industry. This allows disposal customers to be guaranteed that TDF produced reaches its intended destination by maintaining the chain of custody.

Tyrecycle utilises this relationship to further develop the production and supply of TDF to numerous countries in Asia.

Tyrecycle has established a quality control regime that is administered through their on-site laboratory for day-to-day testing and monitoring of product quality.

The production process for TDF is undertaken in accordance with environmental regulations, including all Environmental Protection Agency (EPA) and Council approvals. The fuel parameters monitored by our laboratory are Calorific Value, Size, Sulphur and Ash. A complete understanding of the expected levels of each of these parameters and their potential impact upon the kiln underpins the commercial success of any Alternative Fuel.

TDF produces more energy than coal generating 15,000BTU per pound - with lower moisture sulphur, nitrogen and ash.

And most importantly, a million tyres used as fuel in place of coal reduces carbon dioxide emissions by 19.5%\*.

(\*Based on studies conducted by third party university)

## EMISSIONS MANAGEMENT PROFILE

Brown coal to Rubber comparison\*

CO <sub>2</sub>	✓	10-25%
NO <sub>x</sub>	✓	5-30%
SO <sub>2</sub>	✓	0-50%
Dioxin & Furan	✓	0-30%
TOC	✓	0-17%

\*Based on studies conducted by third party universities and the cement industry.





# Products Created

Tyrecycle is the largest supplier of recycled rubber to a number of domestic industries - **Construction, Manufacturing and Automotive.** Tyrecycle products are often used to replace, enhance or extend the quality of the base virgin materials.

Tyres and conveyor belts may be used for granulation feedstock, the base material from which we produce repurposed products. We also produce Tyre Derived Fuel (TDF); Tyre Derived Aggregate (TDA); rubber granulate in varying sizes; rubber crumb (440 to 710 micron); and recover steel from tyres.



## ATHLETIC TRACKS

Recycled rubber granules are mixed with polyurethane and then painted to produce running surfaces. The use of recycled rubber assists with impact absorption, increased performance and injury reduction.



## BRAKE PADS

Rubber crumb is used in asbestos-free brake pads, reducing noise and improving wear. The use of heat-resistant rubber instead of asbestos-based materials is a relatively new technology in Australia. As well as lowering noise and improving wear, this product also minimises dust output to maintain vehicle appearance.



## BUILDING INSULATION

Mixed with polyurethane, recycled granulated rubber is rolled into noise-reducing insulation. This rubber matting insulation is especially useful in units and apartments, both under flooring and in the walls for reducing and isolating noise. The use of a waterproof flexible binder also provides protection from the elements and many of these products are non-toxic and non-allergenic.



## CIVIL ENGINEERING

Tyres are chipped and used as drainage aggregates in the construction of roads and drains. Chipped tyres are also used in embankments for road construction, reducing the weight and the outward pressure presented by other materials, such as rock. These products also help to lower overall construction costs.



## FUEL FOR ENERGY RECOVERY

Recycled rubber benefits several industries in Australia and Asia including:

- Cement Production;
- Paper Production;
- Steel Production.



## MATTING SURFACES

A variety of matting products are made from recycled rubber, for internal and external use, in both commercial and domestic applications. These include non-slip door mats, and mats for workshops and kitchens. They are hard-wearing, don't rot and can be washed easily.





### MARINE NON-SLIP SURFACES

Recycled rubber granules are added to paint, providing grip in areas that may become slippery, including walkways of boats. Strips of this material are also applied to the edges of stairs.



### PLAYGROUND SURFACES

Recycled rubber is used in soft-fall surfaces, such as children's playgrounds, lowering the force of fall impact and reducing injuries. These durable and low-maintenance surfaces are also porous, allowing them to perform even in harsh weather conditions.



### SPORTING SURFACES

Recycled rubber is used under synthetic grass for softness and is particularly useful for sporting grounds. The grass is often injected directly into the recycled rubber with a polyurethane binder.



### TILE ADHESIVES

Recycled rubber is used in tile adhesives, allowing the adhesive to obtain the flexible properties of cured rubber. This added flexibility also prevents the tiles from the cracking caused by the movement of buildings over time, and also provides important water-resistant properties.



### NEW TYRE MANUFACTURE

Added to passenger tyres, solid forklift tyres and even tyres for your wheelie bins, recycled rubber is mixed with uncured rubber prior to baking. Used as a filling compound, when the recycled rubber is heated, it expands at a predictable and more constant rate. This reduces the use of new materials and lowers the cost of manufacture.



### ROAD SURFACES

The construction of road surfaces with recycled rubber enhances performance, reduces noise and increases the life of our roads.

## CHAIN OF CUSTODY

AT TYRECYCLE, WE CONTROL THE END OF LIFE OF OUR PRODUCTS, TO ENSURE FULL CHAIN OF CUSTODY OF OUR RECYCLING PROCESSES. WITH STRICT DOCUMENTATION AND PROCESS CONTROLS, TYRECYCLE IS ABLE TO SUPPLY REPORTS SUPPORTING THE END DESTINATIONS OF ALL PRODUCTS; BE THEY TDF OR RUBBER CRUMB.





## Our Coverage

**TYRECYCLE, ITS EMPLOYEES AND TRADING PARTNERS ENGAGE IN A SUSTAINABLE CULTURE TO PROVIDE A CHAIN OF CUSTODY GUARANTEE THROUGH ALL RECYCLING PROCESSES**

### Pakistan

- Market for TDF

### India

- Market for TDF

### Sri Lanka

- Market for TDF

### ResourceCo Asia

- Singapore

### Tyrecycle

- Perth (TDF)

### Tyrecycle

- Adelaide (TDF)

● Export of TDF

● Collection coverage

### Japan

- Market for TDF

### Korea

- Market for TDF

### Tyrecycle

- Darwin (EOL Tyre)

### Tyrecycle

- Brisbane (TDF)

### Tyrecycle

- Sydney (TDF)

### Tyrecycle

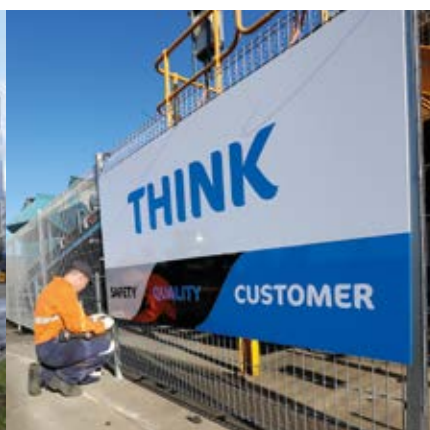
- Hobart (TDF)

### Tyrecycle

- Melbourne (TDF, Crumb)

## TYRECYCLE COLLECTS AND PROCESSES IN EVERY STATE IN AUSTRALIA.

We have the largest collection fleet in the country servicing metropolitan, regional and remote areas. Whether its wheel weights and batteries, forklift tyres or earthmover tyres; if it needs collecting and recycling we'll be there. We collect passenger tyres, truck tyres, OTR (Off The Road) tyres and conveyor belts from local councils, mine sites, and tyre retailers in accordance with environmental regulations, Australia wide.



Tyrecycle continues to work with government and industry to increase awareness of the importance of tyre recycling and the promise of associated product development.

## Get in touch

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### National Phone Number

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(1300 489 732)

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**Fax +61 (0) 3 9305 2545**

**Email [sales@tyrecycle.com.au](mailto:sales@tyrecycle.com.au)**

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NSW 2760

### PERTH

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O'Connor  
WA 6163

### BRISBANE

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### HOBART

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Brighton Industrial Estate  
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Health & Safety  
AS 4801  
SAI GLOBAL



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[tyrecycle.com.au](http://tyrecycle.com.au)