

Sustainable Solutions for End-of-Life Tyres in Ghana (Waste Tyres)

Dr. Sampson Atiemo
(Executive Chairman) MRI

Thursday, September 25, 2025

About MRI

- **Mountain Research Institute (MRI)** is wholly Ghanaian owned research and consultancy firm.
- Incorporated under the laws of Ghana in February, 2016.
- We specialize in education, training, research and development.
- MRI focuses on bold environmental and circular economy consultancies within the domain of sustainable cycles of resources to promote sound economic development.
- The Institute has strong expertise in e-waste, end-of-life vehicles, municipal solid waste, circular economy management among many others.
- Our partners include MEST, EPA, World Bank, GIZ, SECO, World Resources Forum, Oeko Institut, GOPA Infra, Prevent Waste Alliance, StEP Initiative among others.
- MRI thrives on professionalism, integrity and passion for sustainable communities.

Overview of End-of-Life Tyres

- Waste car tyres have been identified as a pollution problem in Ghana for decades.
- The first baseline study on the situation was conducted by MRI and GNCPC in 2019 as the first step towards understanding the problem.
- The study showed that Ghana imported an average of 47,394 tons of tyre by sea
- However, the tyre waste generation was pegged between 106,779 and 147,398 tonnes in 2019.
- The study found common practices with waste tyre management such as:
 - **Open burning** (scrap steel, fuel, stone cracking, removing hair from slaughtered animal hides, repellants of snakes)
 - Unregulated pyrolysis Activities
 - Upcycling
 - Granulation among others

Thursday, September 25, 2025



Recycling Data: Volumes Across Different Pathways

- There are no official numbers available for the share of waste tyres recycled in Ghana.
- Based on the baseline studies conducted on end-of-life (EoL) tyres, as well as the recent baseline studies on pyrolysis, the following recycling pathways and their estimated volumes have been identified.

Pathway	Annual Estimated Volumes (tons)
Pyrolysis (9 facilities)	27, 480
Mechanical Recycling (IRECOP)	1,460
Upcycling (20 formal association members)	2, 250
Co-processing (Not yet)	-
Burning, Landfills and storage at Vulcanizer's shops	75, 389 - 116, 208



SRI SUSTAINABLE
RECYCLING
INDUSTRIES

Pyrolysis

Potential for waste tyre and WEEE plastic processing in Ghana

Darko Akomeah, Andreas Bill, Inga Hilbert, Thomas Amponsah, Eric Arthur, Sampson Atiemo, Kingsford Joe, Edwina Manegyele Faanuba, Charles Marmy, Andreas Manhart
June 2025

Regulatory framework for tyre Management in Ghana

i. Part 4 of the Environmental Protection Act 1124 (2025)

- All importers and manufacturers of tyres are to register with EPA
- Eco-levy is charged on tyres imported or manufactured for use in Ghana
- The Eco-levy is used for the collection and environmentally sound management of tyres at the end-of-life
- All producers are obligated to take back waste car tyres manufactured or sold by them

ii. Legislative Instrument (LI 2250)

- Specific responsibilities for different actors of waste tyre management.
- Maintain up an up-to-date database by actors.
- The setup of a collection centres or take back systems

iii. Technical Guidelines on Environmentally Sound E-Waste Management

- Differentiate requirements for different actors (tiers) in waste management
- Include practical examples to facilitate comprehension of technical requirements

iv. Local Governance Act 2016 (Act 936)

- Assigns District Assemblies responsibility for waste management, including disposal of tyres, under local by-laws.

An Agenda for Sustainable Management

Four innovative and sustainable pathways for end-of-life tyres:

- ❖ Solution 1: Co-processing in Cement Kilns
- ❖ Solution 2: Shredding into Granules (Astro Turf Production)
- ❖ Solution 3: Pyrolysis (Energy & By-products)
- ❖ Solution 4: Upcycling (Furniture & Creative Uses)



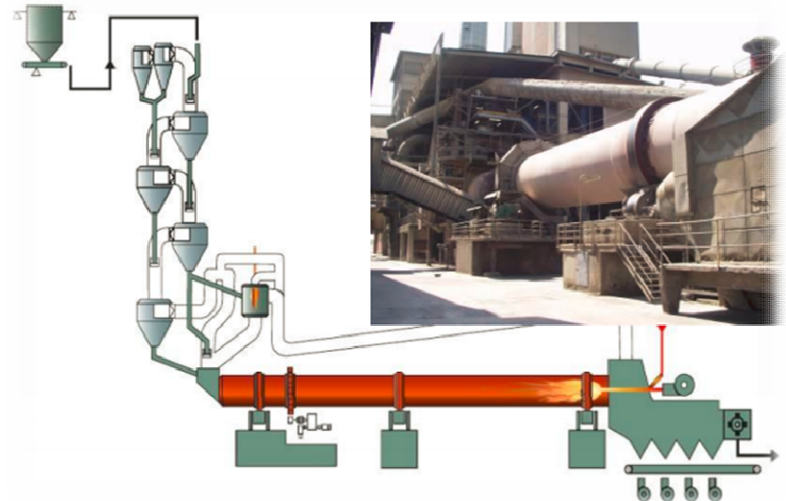
Waste tyre management

Baseline study for Ghana

Authors: Eric Arthur, Prosper Dorfiah, Inga Hilbert, Vincent Nartey Kyere, Paul Kwesi Ocran
October 2020

Solution 1 – Co-Processing in Cement Kilns

- An assessment of the Buipe cement plant, located in the Northern Region of Ghana and owned by M/S Savanna Diamond Company Limited was conducted
- The assessment indicated that the BUIPE cement plant is capable of co- processing waste tyres and RDF to substitute coal in an environmental sound manner.
- Review of environmental standards is underway by EPA



Solution 2 – Shredding into Granules (Astro Turf Production)

- One company invested in the production of tyre granules.
- However, there was capacity gap in the installation and operations
- A technical expert was brought in to support the company to help operationalize the facility
- Currently, the facility is processing 400 tons/day.



Thursday, September 25, 2025

Solution 3 – Pyrolysis (Energy & By-products)

- An assessment of pyrolysis plants in Ghana was conducted to identify the viability of waste tyres in the process.
- It is estimated that 20 pyrolysis plants are currently operating across Ghana.
- All facilities used waste tyres as feedstock.
- Plans are underway to develop SOPs for the Pyrolysis facilities.



SRI SUSTAINABLE
RECYCLING
INDUSTRIES

Pyrolysis

Potential for waste tyre and WEEE plastic processing in Ghana

Darko Akomeah, Andreas Bill, Inga Hilbert, Thomas Amponsah, Eric Arthur, Sampson Attieno, Kingsford Joe, Edwina Manegyele Faanuba, Charles Marmy, Andreas Manhart



Separation tank used to collect the light pyrolysis oil at the top and the heavier residues



Separated pyrolysis oil



Pyrolysis char stored in jumbo bags



Steel recovered from pyrolysis of waste tyres

Thursday, September 25, 2025

Solution 4 – Upcycling (Furniture & Creative Uses)

- Upcycling of waste tyres: Creative transformation of tyres into value-added products such as;
 - ❖ Chairs, tables, and flower pots.
 - ❖ Playground equipment.
 - ❖ Decorative and artistic products.
- They were scattered, uncoordinated, and lacked visibility.
- They were organized into an association.
- Given enhanced capacity for product design and innovation.
- Also supported for Exhibitions in Ghana



Outlook and Recommendation

- Enforce quality standards for tyres imports into Ghana.
- UTUA must benefit from the Eco-levy system
- Support Recycling to collect waste tyre directly from public entities.
- Provide incentives and standards for co-processing in the cement industry using waste tyres.
- Support the development of technical guidelines and SOP for the pyrolysis plants.
- Establish a national knowledge exchange platform for the waste tyre sector.
- Improve awareness raising on environmentally sound management of waste car tyres

Conclusion

- A policy brief has been developed for policymakers and the industry to explore the viable solutions for sound management of waste tyres;
- End-of-life tyres are not waste, but a resource.
- MRI is committed to leading this change and building sustainable solutions for Ghana
- Our profound Appreciation to the Sustainable Recycling Industries Programme for the support.



Towards a controlled and holistic
management of waste tyres in Ghana

Policy Brief

Tobias Seutter (né: Schleicher), Dr. Sampson Atiemo, Letitia Nyasse, Inga Hilbert & Andreas Menhart

July 2023

References

1. Arthur et al (2020): **Waste tyre management Baseline**
https://www.sustainable-recycling.org/wp-content/uploads/2025/03/2020_Waste-tyre-management-Baseline-study-Ghana_Arthur.pdf study for Ghana.
2. Sauter et al (2025): **Towards a controlled and holistic management of waste tyres in Ghana** Policy Brief
https://www.sustainable-recycling.org/wp-content/uploads/2025/08/2025_Towards-a-controlled-and-holistic-management-of-waste-tyres-in-Ghana_Sautter-et-al.pdf
3. Darko et al (2025): **Pyrolysis Potential for waste tyre and WEEE plastic processing in Ghana**
https://www.sustainable-recycling.org/wp-content/uploads/2025/07/2025_Pyrolisys-Potential-waste-tyre-WEEE-plastic-processing-Ghana_Darko-et-al.pdf



Pyrolysis

Potential for waste tyre and WEEE plastic processing in Ghana

THANK YOU



Sampson Atiemo (PhD)
Executive Chairman
Mountain Research Institute
P. O. Box 1424
Koforidua, Ghana
atiemosam@gmail.com
+233246184766