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The Rubber Manufacturers Association Meeting with the Office of Management and Budget
July 30, 2015

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RMA Tire Company Members

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PASSION for EXCELLENCE

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Continental

PIRELLI

COOPERTIRES

TOYO TIRES
driven to perform

GOODYEAR
Get there

YOKOHAMA

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Overview

- EPA's continued recognition of the biogenic or natural rubber fraction in tires
- Benefits and use of natural rubber in tire manufacturing
- Scrap Tire Markets – Tire Derived Fuel (TDF)
- States with Utility Boilers currently combust TDF
- States that support the use of biomass as a means to comply with the proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units ("Clean Power Plan")
- RMA recommendations

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RMA Supports EPA's Recognition of the Natural Rubber Fraction in Tires

Greenhouse Gas Reporting Rule

- EPA's technical support document for the GHG reporting rule recognized the natural rubber fraction in tires as biogenic
  - http://www.epa.gov/ghgreporting/documents/pdf/2010/MRR-Revisions_TSD.pdf
- This background document included information from RMA's website that specified that passenger tires are 14% natural rubber and truck tires are 27% natural rubber (RMA has updated the natural rubber content data)

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RMA Supports EPA's Recognition of the Natural Rubber Fraction in Tires

GHG Deferral Rule

- Examples of biogenic CO2 emissions include: "CO2 from combustion of the biological fraction of tire-derived fuel"
  - *Deferral for CO2 Emissions from Bioenergy and Other Biogenic Sources under the Prevention of Significant Deterioration (PSD) and Title V Programs: Final Rule* (Page 17 of 104)

Accounting Framework for Biogenic CO2 Emissions (2011)

- "*Tire-Derived Wastes (TDW)*. Scrap tires have multiple uses, including use as a feedstock for TDW. Tires contain a biogenic component in the form of natural rubber or biomass, which comprises approximately 20 percent of the tire based on information collected from the Rubber Manufacturers Association (EPA, 2010e). TDW is typically treated through combustion. TDW is often co-fired with other fuels, but may also be the primary fuel."
  - *Accounting Framework for Biogenic CO2 Emissions from Stationary Sources (September 2011, Page 49 of 140)*

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RMA Supports EPA's Recognition of the Natural Rubber Fraction in Tires

Framework for Assessing Biogenic CO2 Emissions from Stationary Sources (2014)

- Appendix N. Assessing Emissions from Waste-Derived Biogenic Feedstocks
  - "Although MSW consists mainly of biogenic resources such as food, paper, and wood products, it also includes resources derived from fossil fuels, such as **tires** and plastics.
  - After the MSW is delivered to a stationary source facility, it is incinerated in an EGU either "as is" (mass burn without recovery of recyclables), as refuse-derived fuel (burn after recyclables have been recovered), or combustion with energy recovery of source separated materials in MSW (e.g., wood pallets and **tire-derived fuel**; EPA, 2009b).

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RMA Supports EPA's Recognition of the Natural Rubber Fraction in Tires

Framework for Assessing Biogenic CO2 Emissions from Stationary Sources (Continued)

- Appendix N. Assessing Emissions from Waste-Derived Biogenic Feedstocks
  - "Tires contain a biogenic component in the form of natural rubber.
  - Whole tires (including steel, etc.) from the combined grouping of passenger vehicles and trucks are, on average, composed of 28% natural rubber (Rubber Manufacturers Association, unpublished data 2013).
  - Tire-derived-fuel is used in cement kilns, utility boilers, pulp and paper mills, industrial boilers, and dedicated scrap tire-to-energy facilities (EPA 2009b)." (Page 29 of 98)

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RMA Supports EPA's Recognition of the Natural Rubber Fraction in Tires

Janet G. McCabe, Memorandum – Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources (November 19, 2014)

- Some states will wish to include biogenic feedstocks in their compliance plans for the Clean Power Plan
- When considering state compliance plans, the agency expects to recognize the biogenic CO2 emissions and climate policy benefits of waste-derived and certain forest-derived industrial byproduct feedstocks
  - TDF is included in the category of Waste-Derived Feedstocks

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EPA's Non-Hazardous Secondary Materials (NHSM) Final Rule

- http://www.gpo.gov/fdsys/pkg/FR-2013-02-07/pdf/2012-31632.pdf
- Scrap tires that meet EPA's legitimacy criteria are considered a fuel when burned in a combustion unit for energy recovery
- The U.S. Court of Appeals upheld the final rule in it's entirety in their decision issued on June 3, 2015 (See *Solvay USA, Inc. v. EPA)*

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Use and Benefits of natural rubber in tire manufacturing

- The use of natural rubber in tires reduces the use of synthetic rubber and extraction of fossil fuels
- Natural rubber provides performance characteristics in tires

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Use and Benefits of natural rubber in tire manufacturing

	Passenger Tire % natural rubber	Truck Tire % natural rubber	Composite (Passenger and Truck) % natural rubber
Sales weighted Average	19%	33%	**24%**

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Use and Benefits of natural rubber in tire manufacturing

- GHG emissions from the combustion of whole tires and Tire Derived Fuel (TDF) chips, which contain natural rubber, have a positive net effect on the carbon cycle:
  - Natural rubber is a renewable raw material in tires
  - Harvesting natural rubber does not destroy the source of the organic material

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Tire Derived Fuel (TDF)

- About 95 percent of annually generated scrap tires in the U.S. go to end use markets
- Tire Derived Fuel (TDF) is the oldest and most mature market for scrap tires in the country
- The combustion of end-of-life tires supplements or displaces the use of traditional fossil fuels

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Whole Tires and TDF Chips

- 2 different products
- GHG emissions from the combustion of the biogenic fraction of whole tires is different from the GHG emissions from the combustion of the biogenic fraction of TDF Chips

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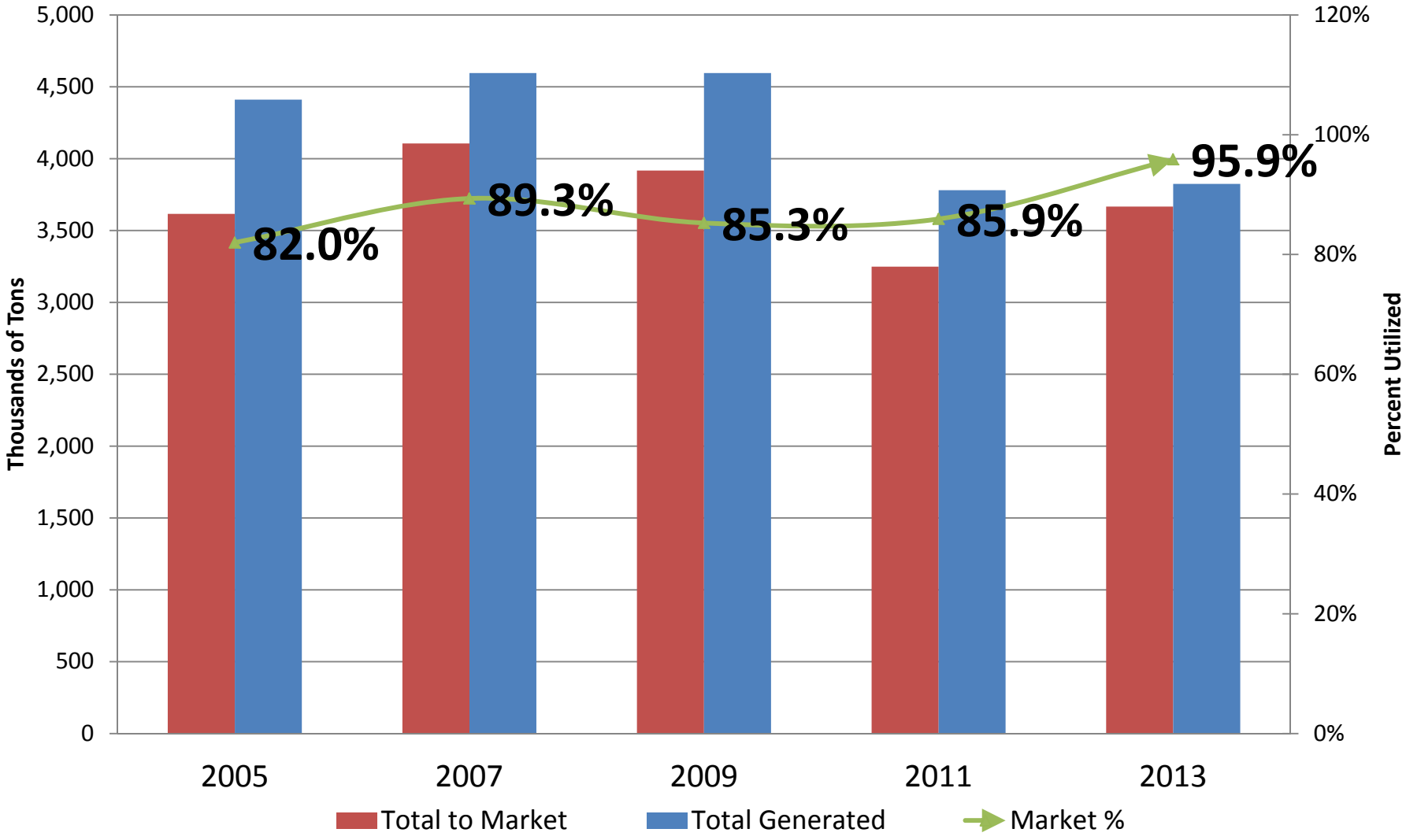
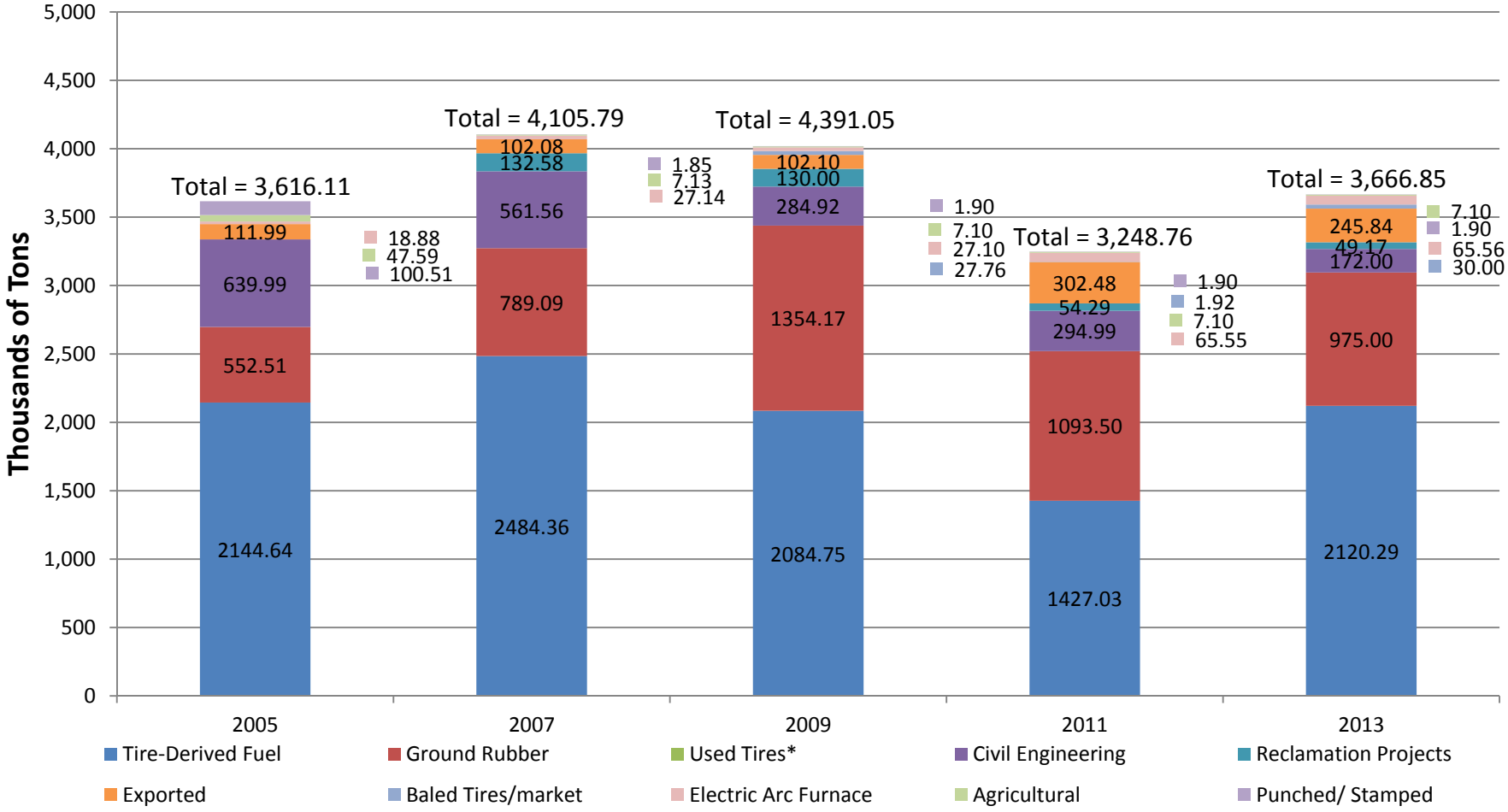
TDF Chips

- The majority of the wire in whole tires is removed
- 30% of the total weight of the tire is removed
- TDF chips contain a greater percentage of natural rubber based on weight than whole tires

U.S. Scrap Tire Trends 2005 - 2013



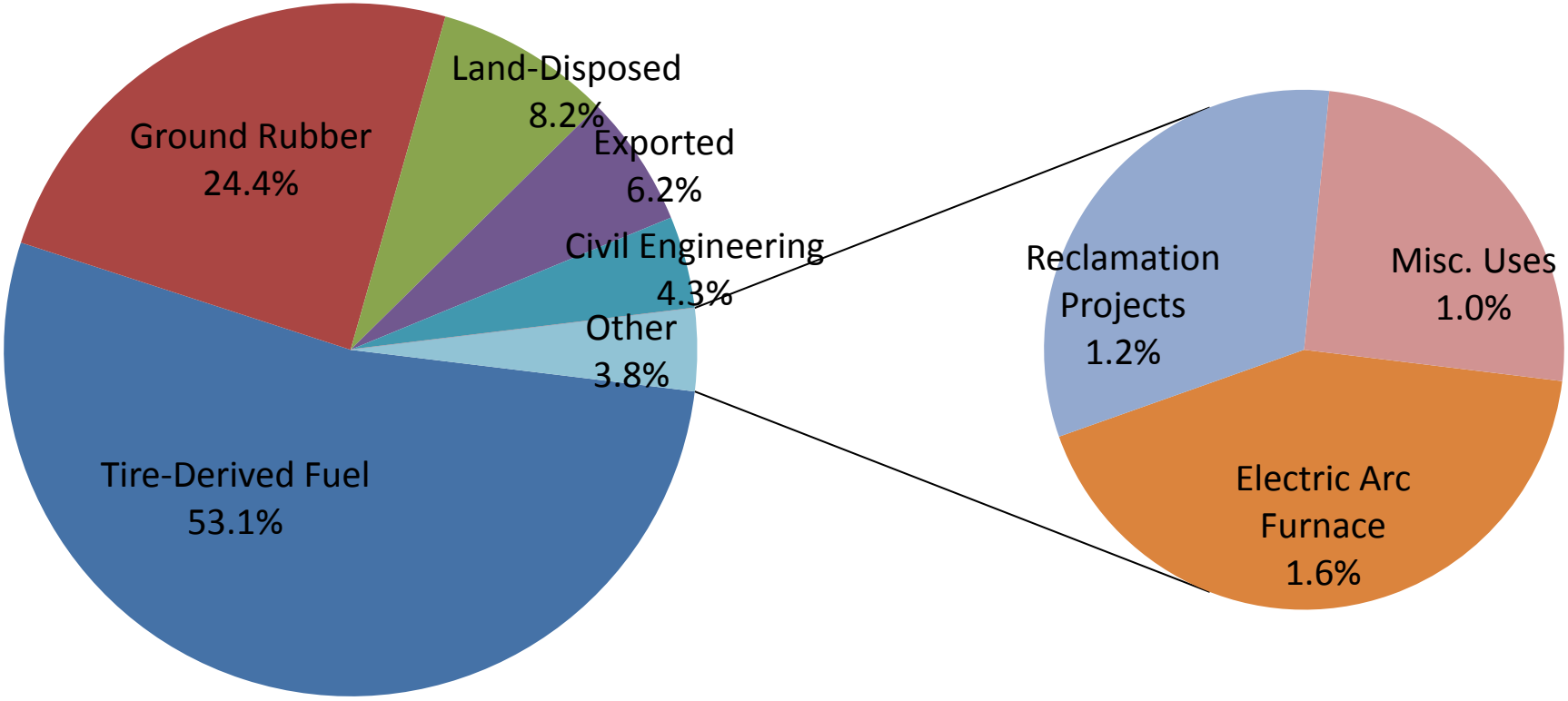
U.S. Scrap Tire Market Trends 2005 – 2013



Please note: RMA began tracking tires culled from scrap tire collection entering domestic used passenger and light truck used tire markets in 2009. RMA changed the way it incorporated estimates of tires entering used tire markets between 2009 and 2011. In 2009, RMA included used tires as a market for scrap tires. In 2011 and 2013, RMA subtracted used tires from the total tires hauled to calculate total net scrap tire generation.

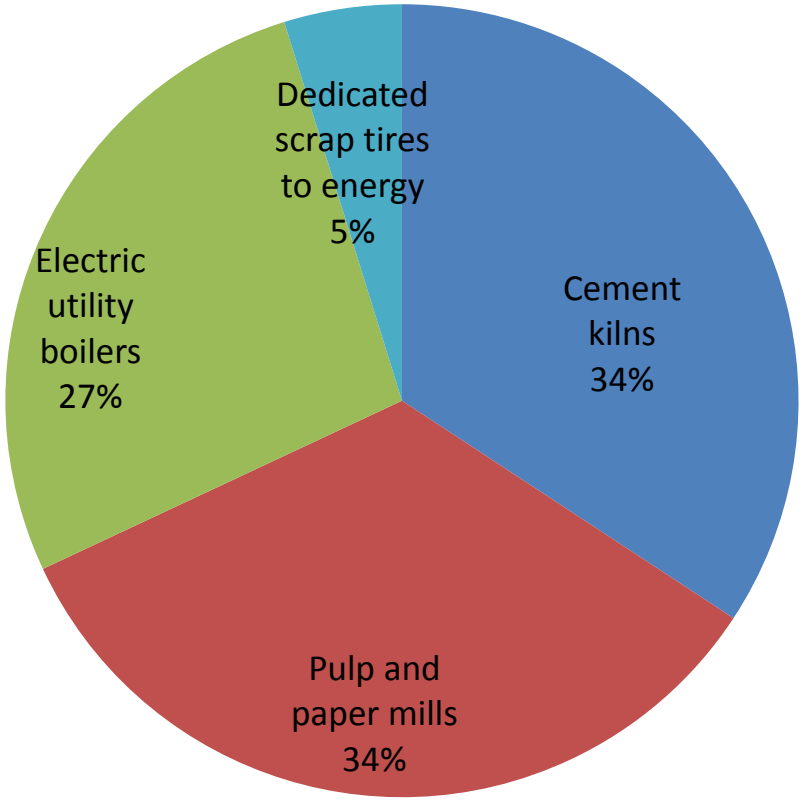
U.S. Scrap Tire Disposition 2013

(percent of total tons generated annually)



Numbers may not add due to rounding.

U.S. Tire-Derived Fuel Markets 2013



Did you know?

Total scrap tires diverted to TDF market: 2,120,300 tons or almost 130 million tires

U.S. Scrap Tire Market Summary (2005 – 2013)

(in Thousands of Tons)

Market or Disposition	2005	2007	2009	2011	2013
Tire-Derived Fuel	2144.64	2484.36	2084.75	1427.03	2120.29
Ground Rubber	552.51	789.09	1354.17	1093.50	975.00
Land Disposed	590.81	593.98	653.38	491.65	327.78
Exported	111.99	102.08	102.10	302.48	245.84
Civil Engineering	639.99	561.56	284.92	294.99	172.00
Reclamation Projects	UNK	132.58	130.00	54.29	49.17
Electric Arc Furnace	18.88	27.14	27.10	65.55	65.56
Baled Tires/market	UNK	UNK	27.76	1.92	30.00
Agricultural	47.59	7.13	7.10	7.10	7.10
Punched/ Stamped	100.51	1.85	1.90	1.90	1.90
Baled/no market	42.22	9.31	15.57	32.78	No data
Used Tires[1]	n/a	n/a	371.25	n/a	n/a
Total to Market	3616.11	4105.79	4391.05	3083.76	3666.85
Generated[2]	4410.73	4595.72	5170.50	3781.00	3824.26
% to Market/Utilized	82.0%	89.3%	84.9%	81.6%	95.9%
% Managed (including baled and landfilled tires)	96.3%	102.5%	97.9%	95.4%	104.5%

[1] RMA began tracking tires culled from scrap tire collection entering domestic used passenger and light truck used tire markets in 2009. RMA changed the way it incorporated estimates of tires entering used tire markets between 2009 and 2011. In 2009, RMA included used tires as a market for scrap tires. In 2011 and 2013, RMA subtracted used tires from the total tires hauled to calculate total net scrap tire generation.

[2] RMA changed the basis for reporting scrap tire generated annually from state-provided data in 2005-2007 to a calculation of replacement market tires sold and vehicles scrapped in 2009, 2011 and 2013.

U.S. Scrap Tire Disposition 2013

Market or Disposition	Thousands of Tons	Millions of Tires	% change 2011-2013
Tire-Derived Fuel	2120.29	129.37	48.6%
Cement Kilns	726.04	44.30	137.7%
Pulp & Paper	716.25	43.70	20.8%
Electric Utilities	576.25	35.16	260.2%
Industrial Boilers	0.00	0.00	-100.0%
Dedicated Tires-to-Energy	101.75	6.21	-50.0%
Ground Rubber	975.00	59.49	-10.8%
Civil Engineering	172.00	10.49	-41.7%
Exported	245.84	15.00	-18.7%
Electric Arc Furnace	65.56	4.00	0.0%
Reclamation Projects	49.17	3.00	-9.4%
Agricultural	7.10	0.43	0.0%
Baled Tires/market	30.00	1.83	1462.2%
Punched/ Stamped	1.90	0.12	0.0%
Total to Market	3666.85	223.74	12.9%
Generated	3824.26	233.34	1.1%
% to Market/Utilized	95.9%	95.9%	11.6%
Land Disposed	327.78	20.00	-33.3%
Baled/no market		0.00	-100.0%
% Managed **(includes Markets, Baled and Landfill)**	**104.5%**	**104.5%**	**4.7%**

U.S. Scrap Tire Generation 2013

Tire Class	Millions of Tires	Market %	Average Weight (lbs)	Weight (thousands of tons)
Light Duty Tires	240.5	89.5%	22.5	2705.5
Passenger tire replacements[1]	199.3	74.1%		
Light truck tire replacements[1]	28.0	10.4%		
Tires from scrapped cars[2]	13.2	4.9%		
Commercial Tires	28.3	10.5%	120.0	1700.4
Medium, wide base, heavy truck replacement tires[1]	15.7	5.8%		
Tires from scrapped trucks and buses[2]	12.6	4.7%		
Total tires hauled	268.8	100.0%	32.8	4405.8
Used tires culled	35.5	13.2%	32.8	581.6
Net scrap tires	233.3			3824.3

[1] Factbook 2014: U.S. Tire Shipment/Activity Report for Statistical Year 2013, Rubber Manufacturers Association.

[2] Ward's Motor Vehicle Facts and Figures, 2014. Includes the total number of vehicles removed from service in 2013. In 2013, Ward's did not publish vehicles retired from service separated for the car and truck/bus category. Instead, it only published total vehicles scrapped from service. RMA estimated the split between cars and trucks/buses based on the average of the split from 2002 - 2012. Assumes two tires scrapped from light duty vehicles and 2.5 tires scrapped from trucks and buses.

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TDF Usage by State Utility Boilers

EPA Region	TDF Usage (tons per year in 2013)
Region 3 and Region 4 (Pennsylvania, North Carolina, Kentucky, Florida	289,000
Region 5 (Michigan, Illinois, Wisconsin)	119,000
Region 7 (Iowa, Missouri)	45,000

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State Comments on Biomass and the Clean Power Plan

- **States should be able to use biomass to comply with the Clean Power Plan.**
  - Eleven states: Arkansas, Connecticut, Georgia, Hawaii, Indiana, Kansas, Maine, Michigan, New Hampshire, Tennessee, and Wisconsin.
- **EPA should clarify whether states can use biomass in their compliance plans.**
  - Seventeen states: Arkansas, Connecticut, Florida, Georgia, Hawaii, Indiana, Kansas, Louisiana, Maine, Michigan, Mississippi, New Hampshire, North Carolina, Ohio, Tennessee, Virginia, and Wisconsin.
- **If biomass cannot be included in plans, EPA should adjust greenhouse gas reduction targets.**
  - Six states: Florida, Georgia, North Carolina, Ohio, Tennessee, and Wisconsin.
- **Conclusion: Seventeen states would like the option to use biomass.**

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RMA Recommendations

- RMA supports the policy determination in the McCabe memo which allows states to rely on biomass obtained from waste-derived feedstocks, including TDF, for compliance with the Clean Power Plan

- RMA recommends that this policy determination should be included in the Federal Implementation Plan for the Clean Power Plan

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Thank you

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