



2017 U.S. Scrap Tire Management Summary

July 18, 2018

About the U.S. Tire Manufacturers Association

The U.S. Tire Manufacturers Association is the national trade association for tire manufacturers that produce tires in the U.S. USTMA members operate manufacturing facilities in 18 states, employ nearly 100,000 workers and generate annual sales of more than \$27 billion. USTMA members are committed to sustainability throughout the lifecycle of a tire, from development through end of life.

USTMA began its scrap tire program in 1990 under the auspices of the Scrap Tire Management Council. USTMA works with all stakeholders, including states, U.S. EPA and the industry to develop markets, reduce scrap tire stockpiles and implement state regulations that foster sustainable scrap tire markets. USTMA supports environmentally sound and economically feasible scrap tire markets.

The logo for Bridgestone, featuring the word "BRIDGESTONE" in a bold, italicized, black sans-serif font with a red diagonal slash through the letter "B".The logo for Giti, consisting of the word "Giti" in a bold, black sans-serif font on a yellow rectangular background, followed by a black silhouette of a tire tread.The logo for Kumho Tire, featuring the words "KUMHO TIRE" in a bold, black sans-serif font with a red number "7" above the "I", and the tagline "Better. All-ways" in a smaller, italicized font below.The logo for Sumitomo Rubber Industries, featuring a blue stylized diamond shape to the left of the words "SUMITOMO RUBBER INDUSTRIES" in a bold, black sans-serif font.The logo for Continental, featuring the word "Continental" in a bold, orange sans-serif font with a small circular emblem to the right.The logo for Goodyear, featuring the words "GOODYEAR" in a bold, black sans-serif font with a yellow lightning bolt through the "Y", and the tagline "MORE DRIVEN" in a smaller, black sans-serif font below.The logo for Michelin, featuring a stylized white Michelin Man character above the word "MICHELIN" in a bold, black sans-serif font, with the tagline "A BETTER WAY FORWARD" in a smaller font below.The logo for Toyo Tires, featuring the words "TOYO TIRES" in a bold, blue sans-serif font with a registered trademark symbol, and the tagline "driven to perform" in a smaller, italicized font below.The logo for Cooper Tires, featuring a stylized blue and black oval shape above the words "COOPERTIRES" in a bold, black sans-serif font.The logo for Hankook, featuring a stylized orange and black shape above the word "Hankook" in a bold, black sans-serif font, with the tagline "driving emotion" in a smaller font below.The logo for Pirelli, featuring the word "PIRELLI" in a bold, red sans-serif font on a yellow rectangular background.The logo for Yokohama, featuring a stylized red and black shape to the left of the word "YOKOHAMA" in a bold, black sans-serif font.

USTMA Sustainability Vision

- USTMA members share a common vision on sustainability which includes: Promoting tire safety; advancing worker safety; acting as responsible corporate citizens; reducing greenhouse gas emissions throughout a tire's useful life; improving environmental footprints over time; minimizing the health, and environmental impacts of tire materials; and ensuring scrap tires enter sustainable markets.
- Specifically, USTMA members share an aspirational vision that ***all scrap tires are managed as valuable materials with self-sustaining markets resulting in zero scrap tire stockpiles and 100% beneficial end use.***
- USTMA's 2017 scrap tire market report measures our progress towards meeting this sustainability vision.

USTMA Scrap Tire Report Basics

- USTMA publishes its *U.S. Scrap Tire Markets* report every two years
- First scrap tire market and stockpile data collected by U.S. EPA in 1990
- Two components:
 - Scrap tire markets
 - Historical stockpiles
- Scope of USTMA analysis – on the highway tires
- USTMA data sources
 - Surveys of state regulators and scrap tire processors
 - Interviews with experts and end users
 - Trade association and industry data

U.S. Scrap Tire Disposition 2017

Market or Disposition	Thousands of Tons	Millions of Tires	% change 2015-2017
Tire-Derived Fuel	1736.34	105.94	-9.7%
Cement Kilns	805.91	49.17	7.0%
Pulp & Paper	503.13	30.70	-18.4%
Industrial Boilers	427.31	26.07	-22.7%
Ground Rubber	1013.32	61.83	-0.7%
Civil Engineering	315.98	19.28	14.9%
Exported	109.83	6.70	7.6%
Electric Arc Furnace	39.15	2.39	50.6%
Reclamation Projects	44.00	2.68	-16.3%
Agricultural	7.10	0.43	0.0%
Baled Tires/market	14.59	0.89	58.8%
Punched/ Stamped	22.50	1.37	-45.4%
Other	108.45	6.62	14.3%
Total to Market	3411.26	208.14	-3.9%
Generated	4189.19	255.61	3.7%
% to Market/Utilized	81.4%	81.4%	N/A
Land Disposed	646.78	39.46	43.3%
% Managed (includes Markets, Baled and Landfill)	96.9%	96.9%	N/A

U.S. Scrap Tire Market Summary (2009 – 2017)

Market or Disposition (1000s of tons)	2009	2011	2013	2015	2017
Tire Derived Fuel	2084.75	1427.03	2120.29	1922.67	1736.34
Ground Rubber	1354.17	1093.50	975.00	1020.75	1013.332
Land Disposed	653.38	491.65	327.78	451.40	646.78
Civil Engineering	284.92	294.99	172.00	274.92	315.98
Exported	102.10	302.48	245.84	102.07	109.83
Reclamation Projects	130.00	54.29	49.17	52.54	44
Electric Arc Furnace	27.10	65.55	65.56	26.00	39.15
Baled Tires/market	27.76	1.92	30.00	9.19	14.59
Punched/ Stamped	1.90	1.90	1.90	41.20	22.50
Agricultural	7.10	7.10	7.10	7.10	7.10
Baled/no market	15.57	32.78	No data	No data	No data
Used Tires ¹	371.25	n/a	n/a	n/a	n/a
Other				94.86	108.45
Total to Market	4391.05	3083.76	3666.85	3551.30	3411.26
Generated ²	5170.50	3781.00	3824.26	4038.80	4189.19
% to Market/Utilized	84.9%	81.6%	95.9%	87.9%	81.4%
% Managed (incl. baled and landfilled tires)	97.9%	95.4%	104.5%	99.1%	96.9%

¹The U.S. Scrap Tire Market Summary began tracking tires culled from scrap tire collection entering domestic passenger and light truck used tire markets in 2009 by including used tires as a market for scrap tires. The U.S. Scrap Tire Market Summary now subtracts used tires from the total tires hauled to calculate total net scrap tire generation, a practice that began with the 2011 edition.

²In 2005 and 2007, annual scrap tire generation estimates were based on state-provided data. Now, these estimates are based on a calculation of replacement market tires sold and vehicles scrapped, a practices that began with the 2009 edition.

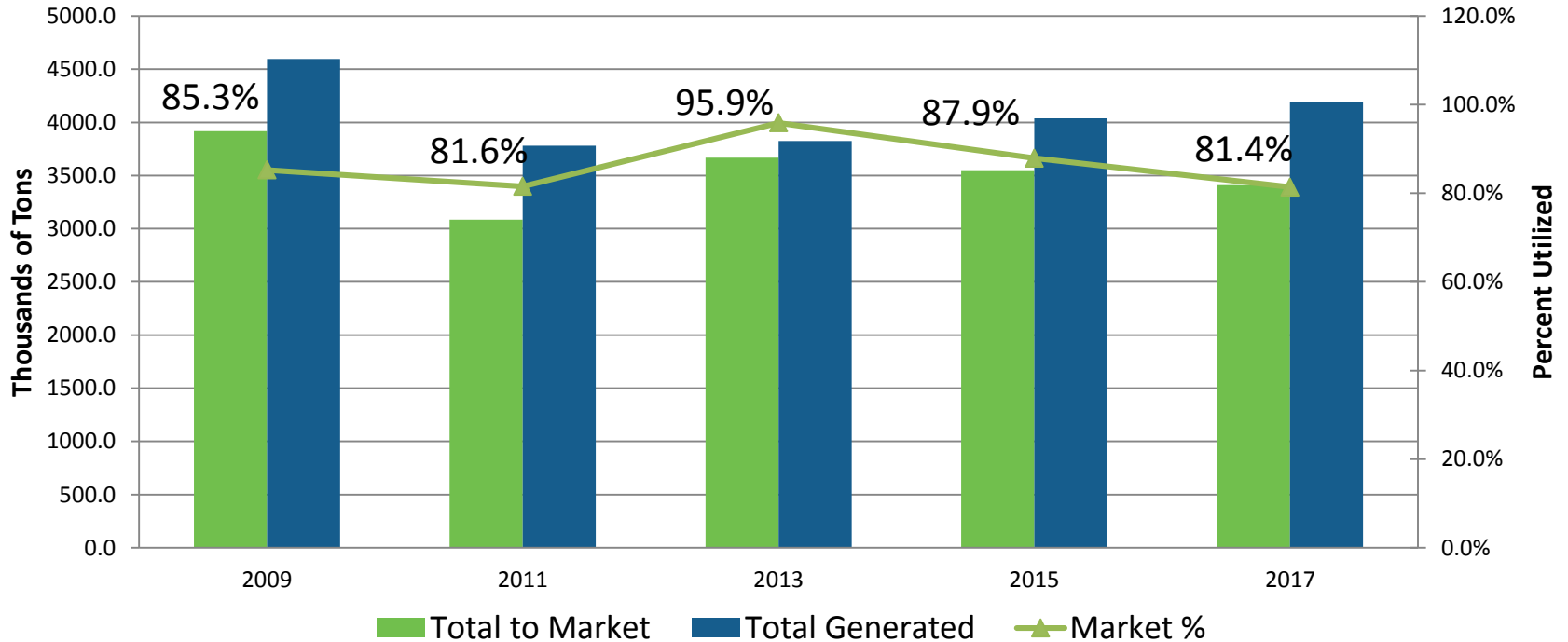
U.S. Scrap Tire Generation 2017

Tire Class	Millions of Tires	Market %	Average Weight (lbs)	Weight (thousands of tons)
Light Duty Tires	254.6	88.6%	22.5	2864.3
Passenger tire replacements ¹	209.7	73.0%		
Light truck tire replacements ¹	31.3	10.9%		
Tires from scrapped vehicles ²	13.6	4.7%		
Commercial Tires	32.7	11.4%	120.0	1962.0
Medium, wide base, heavy truck replacement tires ¹	19.7	6.9%		
Tires from scrapped trucks and buses ²	13.0	4.5%		
Total tires hauled	287.3	100.0%	33.6	4826.3
Used tires culled	37.9	13.2%	33.6	637.1
Net scrap tires	249.4			4189.2

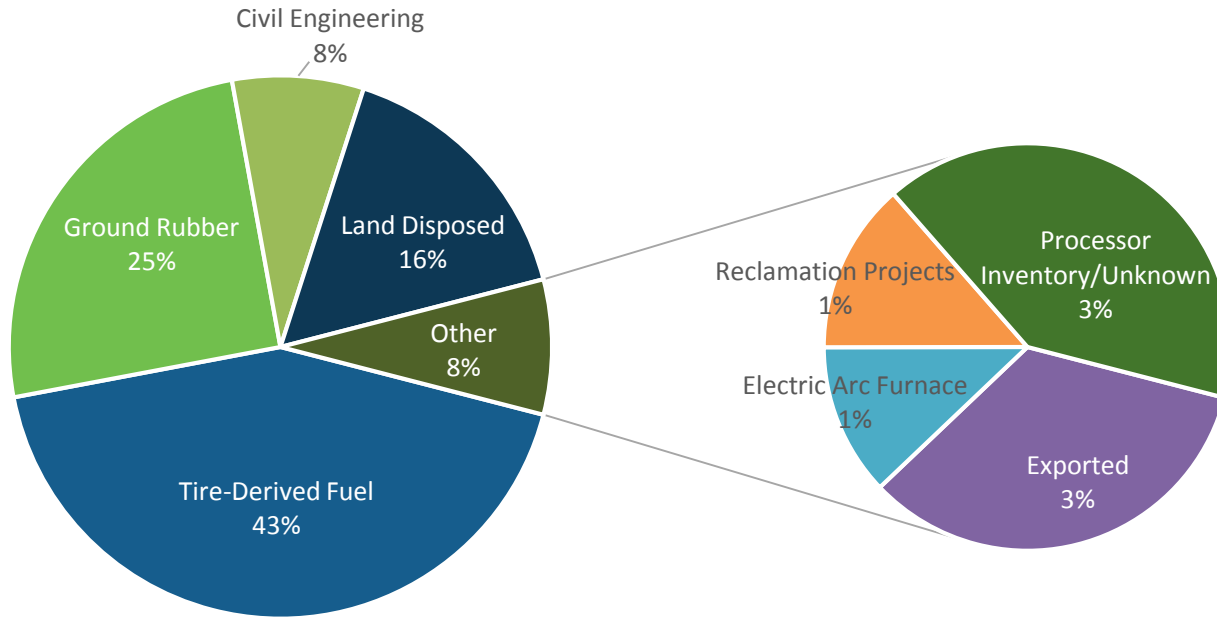
¹Factbook 2018: U.S. Tire Shipment/Activity Report for Statistical Year 2017, U.S. Tire Manufacturers Association.

²Ward's Motor Vehicle Facts and Figures, 2014. Includes the total number of vehicles removed from service in 2015. Ward's discontinued publishing a statistic on vehicles retired from service separated for the car and truck/bus category. Instead, it only published total vehicles scrapped from service. USTMA 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.

U.S. Scrap Tire Market Trends 2009 - 2017

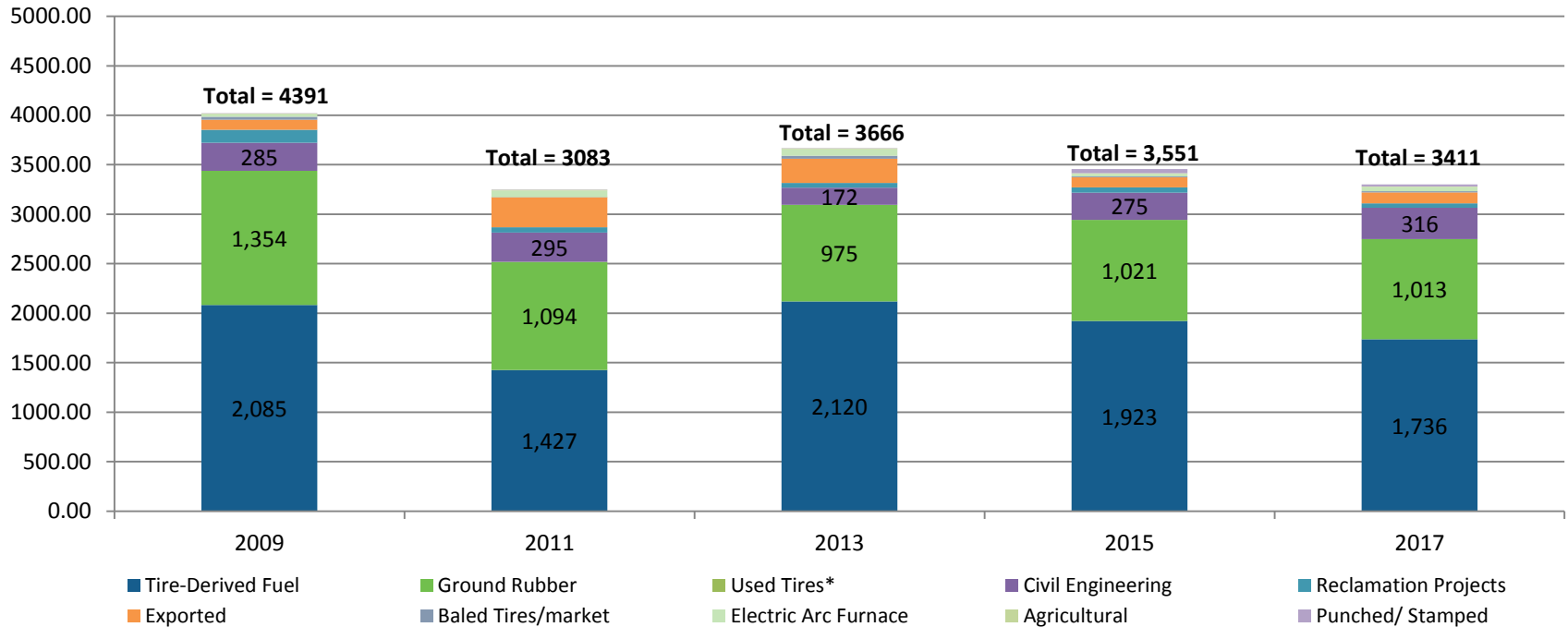


U.S. Scrap Tire Disposition 2017



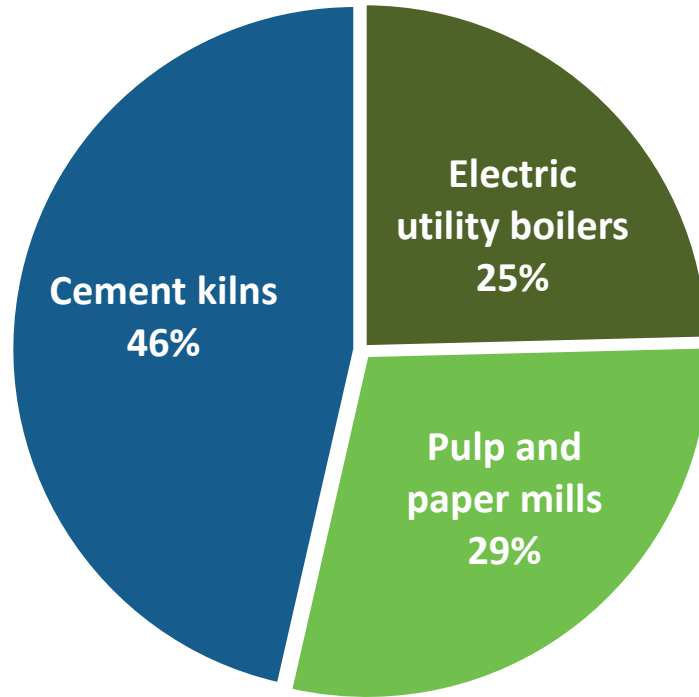
Total annual generation = 4,189 thousand tons

U.S. Scrap Tire Market Trends 2009 – 2017



*The U.S. Scrap Tire Market Summary began tracking tires culled from scrap tire collection entering domestic passenger and light truck used tire markets in 2009 by including used tires as a market for scrap tires. The U.S. Scrap Tire Market Summary now subtracts used tires from the total tires hauled to calculate total net scrap tire generation, a practice that began with the 2011 edition.

U.S. Tire Derived Fuel Markets 2017

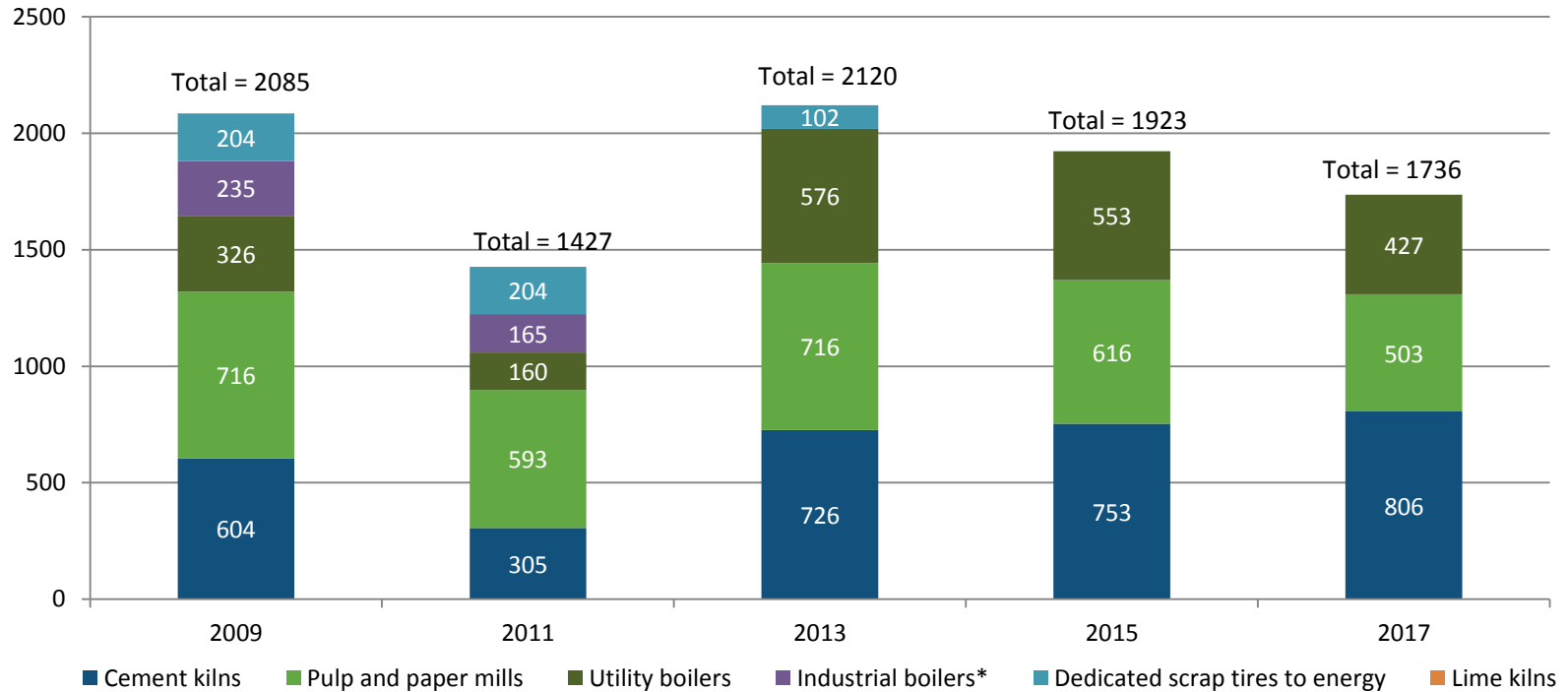


Did you know?

Total scrap tires diverted to TDF market:

1,736,340 tons or about 106 million tires

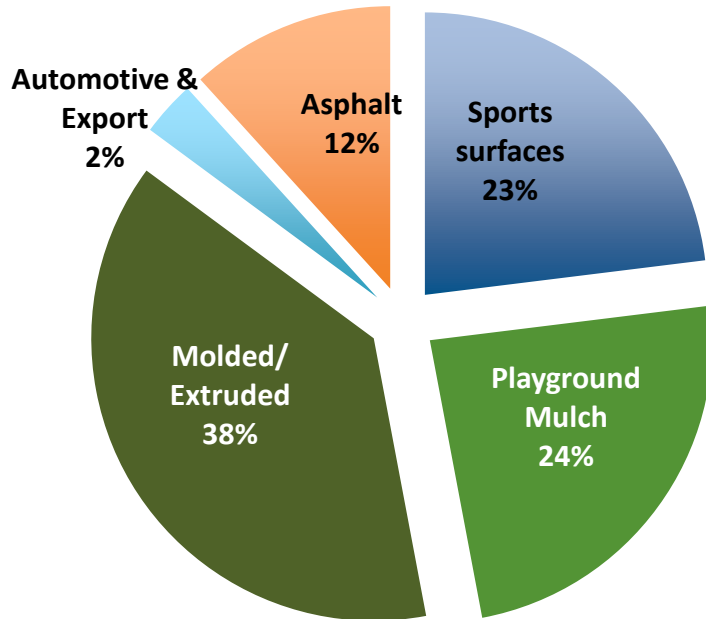
U.S. Tire-Derived Fuel Market Trends 2009 – 2017



* Combined with Electric Utility boilers starting in 2013.

U.S. Ground Rubber Markets 2017

(percent of total pounds of scrap tires consumed in market)



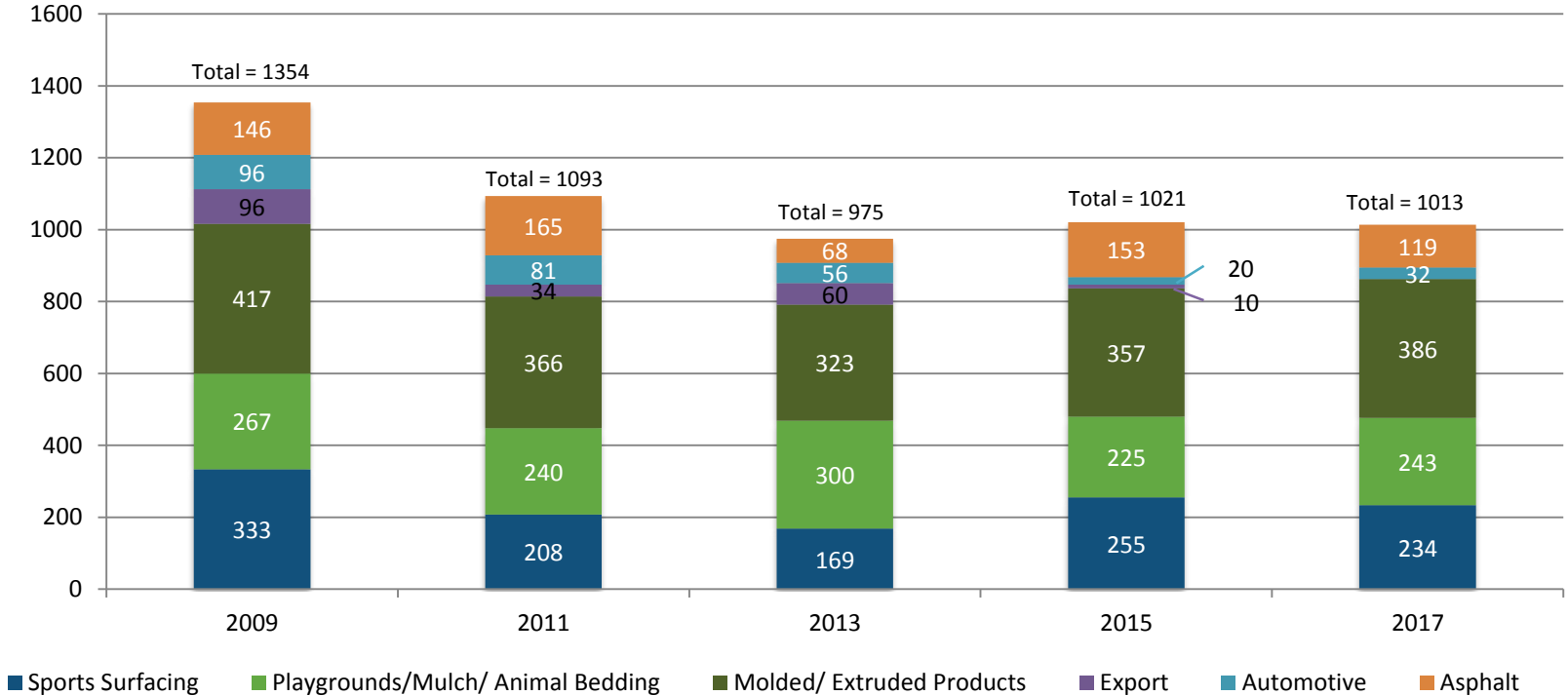
Did you know?

Total tire rubber consumed in ground rubber markets: *about 1,340,000,000 pounds¹*

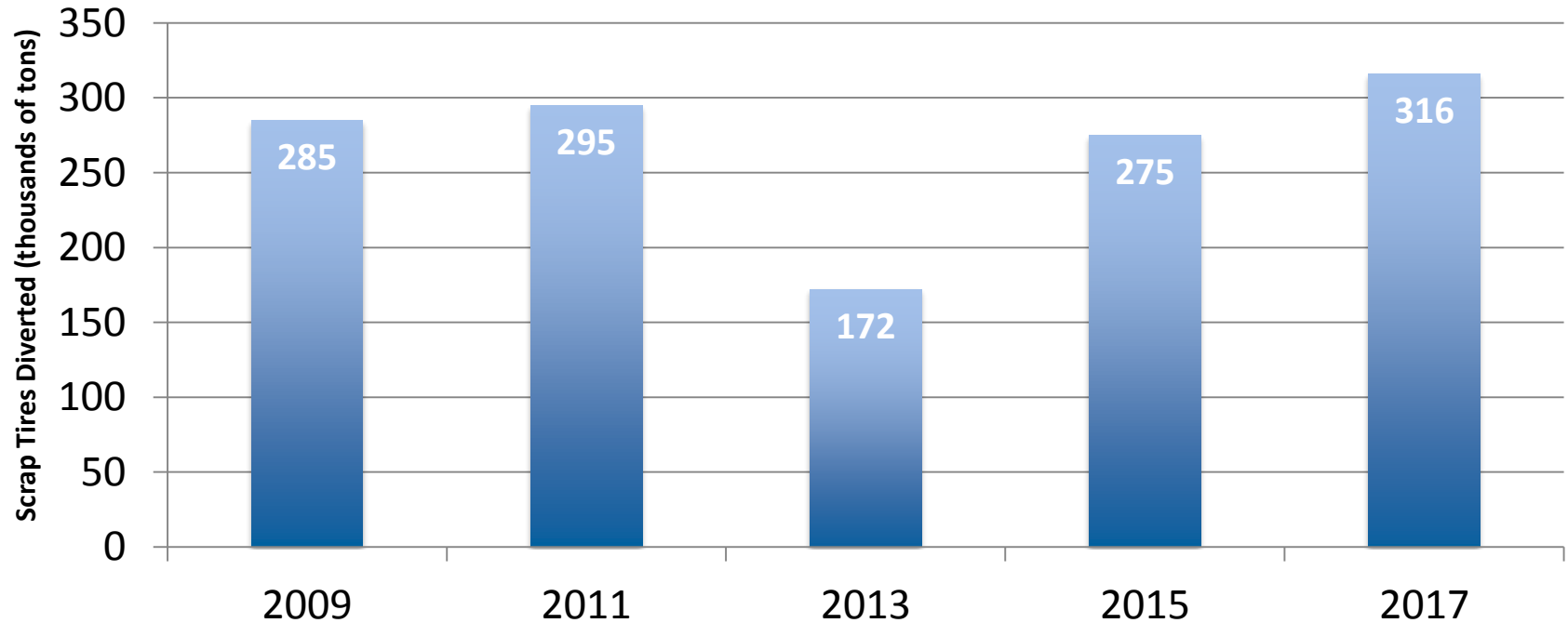
Total scrap tires diverted to these markets: *About 1,013,320 tons or about 62 million tires*

¹This value represents the weight of processed ground rubber (with wire, fluff and agglomerated rubber removed) that is consumed in ground rubber end-use markets. In contrast, the data represented in other areas of this report refer to the weight of whole tires diverted to all scrap tire markets, including ground rubber.

U.S. Ground Rubber Market Distribution 2009 - 2017



U.S. Civil Engineering Markets 2009 - 2017



U.S. Stockpiled Scrap Tires 1990 - 2017

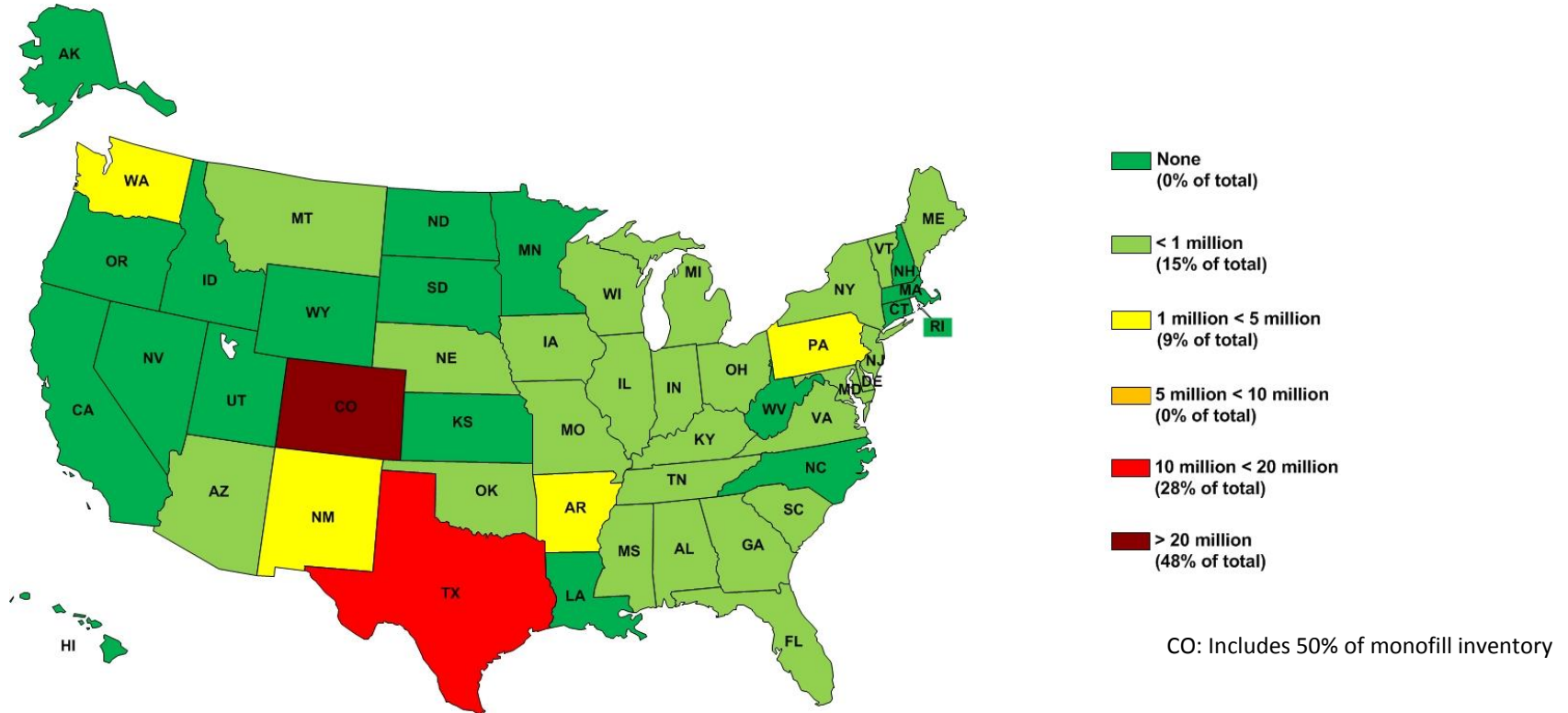


Did you know?

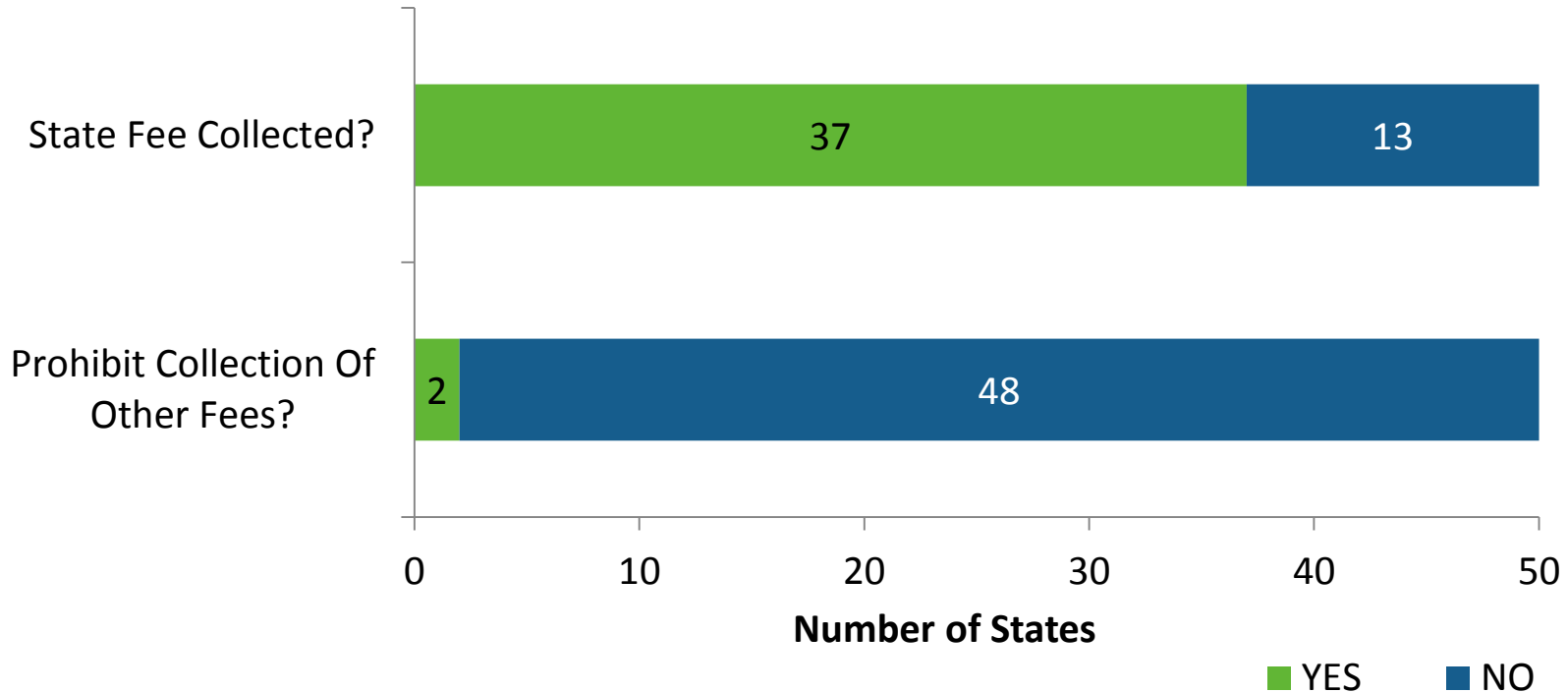
In 1990, about a billion scrap tires were in stockpiles in the U.S.

By 2017, over 94% of those tires have been cleaned up! Only 60 million more stockpiled tires still to go.

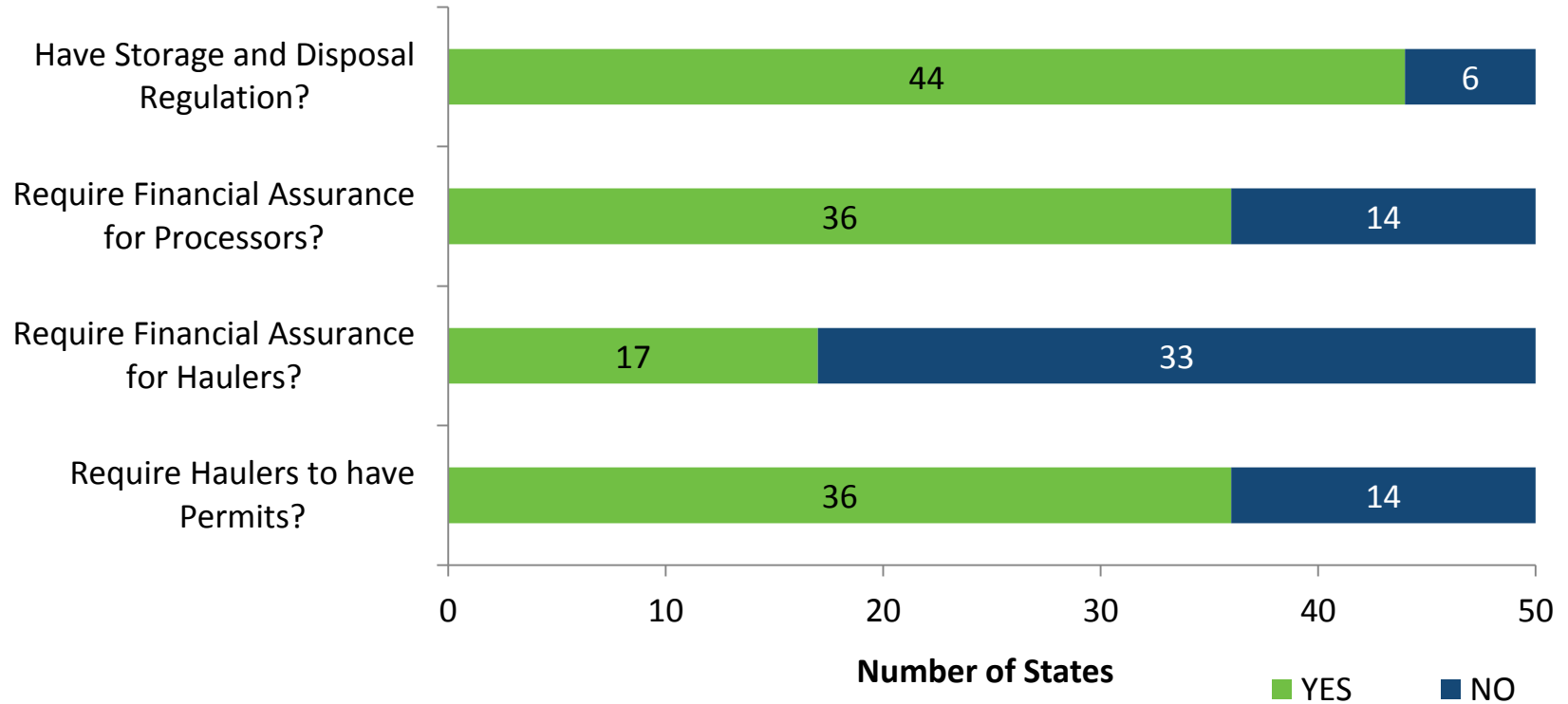
Stockpiled Tires Remaining in the U.S.



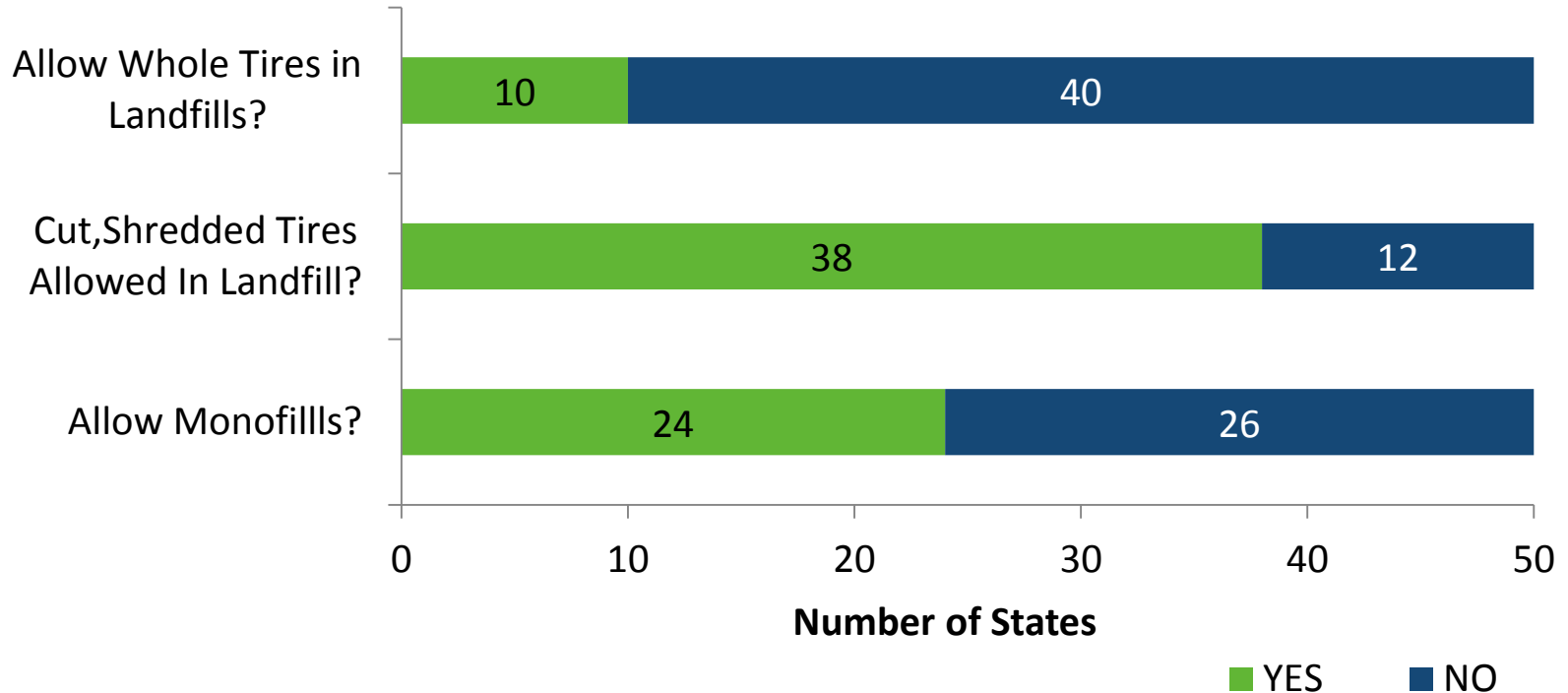
Overview of Current State Programs



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