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Scrap Tire Markets in the United States: An Update

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RMA Scrap Tire Activities

- RMA is the association that represents the 8 US based tire manufacturers
- Scrap tire activities began in 1990
- Scrap Tire Management Council = RMA
- RMA works with governments, scrap tire users, NGO's, general public to accomplish mission



RMA Tire Company Members





The Scrap Tire Industry

- Began in 1985 w/first state tire program
- Industry began as a 'mama/papa' industry
- From 1979 – 1992 TDF was the only market for scrap tires
- In 1992 scrap tires first used as TDA
- In 1992 scrap tires first used as ground rubber

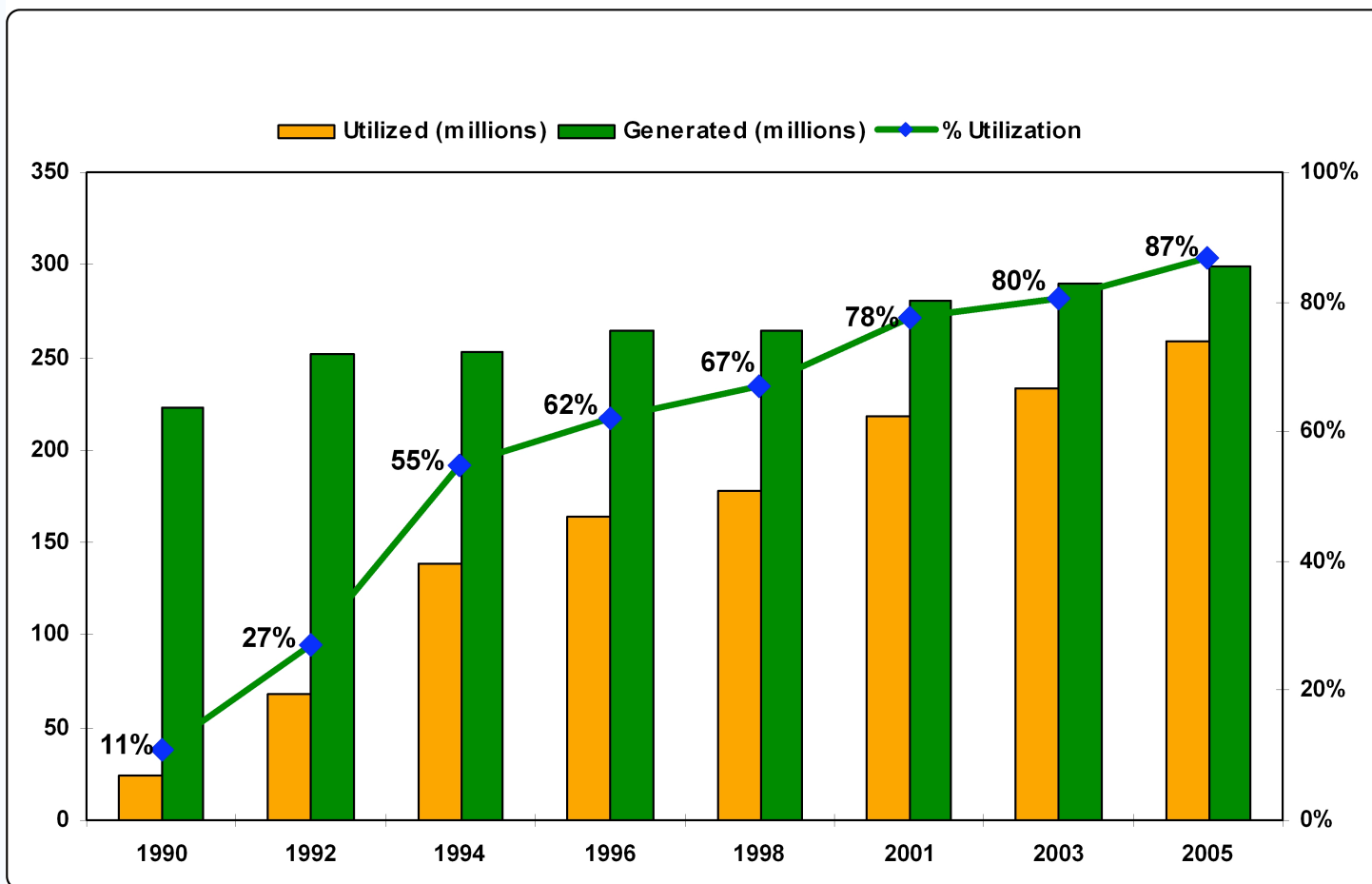


The Scrap Tire Industry

- Percentage of tires to markets has increased annually
- TDF remains the largest market & serves as the base market for the industry
- Markets for ground rubber have developed slowly
- Markets for TDA expanded until 2003; impacted by demand for TDF & GR



U.S. Scrap Tire Management Trends, 1990 - 2005



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The Scrap Tire Industry

- Industry has consolidated into large, regionally based companies
- Scrap tire industry is driven by “demand/pull’ forces
- Collection/processing of tires is important, but not most critical aspect of the industry
- Markets are the most critical factor



The Scrap Tire Industry

- State programs/policies have major impact
- Numerous companies have failed
- Large investments do not guarantee success
- Markets are regional and vary by region
- Need for a 3-to-5 year plan



US Scrap Tire Market Overview

- From 2005 to 2007 demand for TDP increased by 5%
- Nearly 87% of annually generated tires went to end-use markets
- TDF remains largest single market
- Demand for ground rubber increased
- TDA usage decreased significantly



US Scrap Tire Market Trends 2005 - 2007

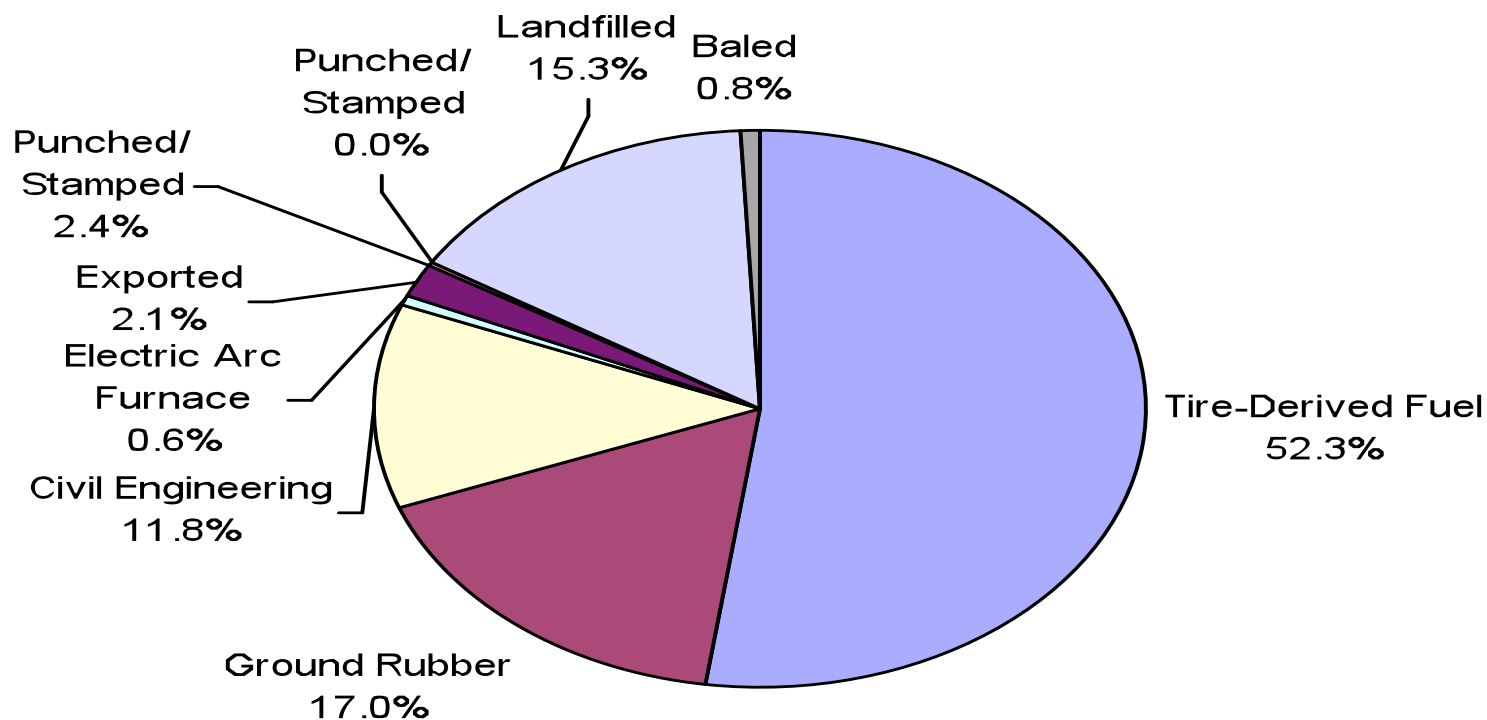
- TDF market expanded 20%
- GR market expanded 46%
- CE market contracted 13%
- Loss of punched/stamped products
- Other markets are not significant



Market	2005	2007	% change
Tire-Derived Fuel	2144.6	2486.4	15.9%
<i>Cement Kilns</i>	<i>802.0</i>	<i>664.0</i>	<i>-17.2%</i>
<i>Pulp & Paper</i>	<i>539.3</i>	<i>1075.5</i>	<i>99.4%</i>
<i>Electric Utilities</i>	<i>373.3</i>	<i>341.5</i>	<i>-8.5%</i>
<i>Industrial Boilers</i>	<i>290.4</i>	<i>201.5</i>	<i>-30.6%</i>
<i>Dedicated TTE</i>	<i>138.3</i>	<i>203.5</i>	<i>47.1%</i>
<i>Lime Kilns</i>	<i>not avail.</i>	<i>0.4</i>	<i>n/a</i>
Ground Rubber	552.5	807.5	46.2%
Civil Engineering	640.0	560.0	-12.5%
Electric Arc Furnace	18.9	27.1	43.8%
Exported	112.0	102.1	-8.8%
Agricultural	47.6	5.5	-88.4%
Punched/ Stamped	100.5	1.9	-98.2%
Total to Market	3616.1	3990.5	10.4%
Landfilled	590.8	730.1	23.6%
Baled	42.2	38.1	-9.8%
Generated	4410.7	4612.4	4.6%
% to Market/Utilized	82.0%	86.5%	5.5%
% Managed (incl. Baled and Landfill)	96.3%	103.2%	6.8%



U.S. Scrap Tire Disposition, 2007





Tire-Derived Fuel

- Shift in demand to PPMs
- Cement kilns using fewer tires
- Value of TDF has increased dramatically
- Quality of fuel chip has improved
- Demand for TDF expected to increase



Ground Rubber Markets

- Rubber modified asphalt
- Infill material in artificial athletic fields
- Cover material under playgrounds
- Molded/Extruded products
- Mulch
- Bound rubber products



Rubber Modified Asphalt

- Little market growth over last 4 years
- Major markets limited to 5 states
- Not usable on all types of roads
- Need to work with public sector & contractors
- Technology still not well understood
- Best of quiet road surfacing: some potential for increased use



Ground Rubber in Sport Surfacing

- Fastest growing market niche for GR
- 2009 market demand appears strong
- High end market requires strong economy
- Questions on health impacts linger
- Outlook for 2010 in question



Ground Rubber in Playgrounds

- Strong market: safest material to fall onto
- Concerns raised about volatile emissions; “latex”; leachate; ADA requirements and ingesting rubber chips being addressed
- Facing strong competition from traditional cover materials
- 2009/2010 demand likely to decrease



Molded & Extruded Products

- Increased/increasing use in molded & extruded products
- Large potential market but many technical issues have to be addressed
- Focus of several state & industry programs
 - CA & NY
 - RMA & Clemson University



Mulch

- Demand has been increasing over last 4 years
- Replaced wood chips, which are being used for fuel value in PPMs
- Has become well accepted in marketplace
- Continued demand a function of the economy



Bound Rubber Products

- Slightly improved demand over last few years
- High end products; requires strong economy
- Demand likely to continue to expand unless economy continues to worsen



Ground Rubber

- Several new, large-scale players coming on-line that can make ultra-fine material
- Production capacity/efficiency does not guarantee markets
- Markets are price/quality sensitive
- Prices are not elastic and cutting price for entry into a market only hurts the industry



Ground Rubber

- Applications for GR exist: time lag between introduction of product & acceptance by public
- Economy-of-scale becomes critical in GR production
- Developing multiple GR markets has its advantages, but increases initial costs



Tire-Derived Aggregate

- Defined as the use of tires shreds in lieu of conventional construction materials
- Lost market share to TDF & GR
- TDF & GR have better return on investment than TDA
- Demand appears to now be stable
- Demand could improve over time



TDA

- Another large-scale end use for tires
- Key to market development is to work with public sector engineers & policy makers
- Education of engineering students also important
- Several states now focusing on this market



Other Technologies

- Devulcanization
 - Breaking the carbon:sulfur bonds
 - Failed 8 years ago; success is questionable
- Pyrolysis/Microwave
 - Yields oil-like material & carbon char
 - Has always failed to be viable
 - Likely to continue to be drain on investments



Fundamentals for Success

- Adequate supply (1.5 – 3 million/yr)
- Markets equal to your supply
- Efficient collection & handling of tires
- Proper equipment & maintenance
- Understanding your costs
- Continued improvements/efficiencies
- Diversified/expanding markets



US Exports of TDPs

- Not well tracked by states
- China
 - 2006—2008 container shipments of TDF from West Coast
 - 2009 shipments have slowed due to economic conditions
- Pacific Rim
 - Same market conditions 2006 -- 2009



Expected Trends: 2009-2010

- TDF markets to further expand
- TDA market will be stable
- Coarse rubber markets to expand
- Ground rubber markets to slowly increase
- States might increase tire fee and use part of the funds for non-tire projects



Conclusions

- Scrap tire industry will continue to mature
- Markets will remain based on local conditions
- Investments must be focused on market oriented activities
- Pressure/competition on markets will continue
- Opportunities/risks remain



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Download the Full RMA Scrap Tire Market Report at:
http://www.rma.org/scrap_tires/