Presentation Overview

- What Is ISRI

- Tire Recycling – an example of supplying quality material to end markets

- Market creation
What is ISRI?

Over 1,600 member companies that process, broker & consume scrap metals, paper, plastics, glass, textiles, electronics and rubber.
ISRI Education & Training

Webinars give ISRI members up-to-date information on:

• Safety Issues;
• Market Issues;
• Government Affairs.

Visit www.isri.org for more details about the webinars.
Unique Networking Opportunities for Attendees

Trade Show Exposition featuring over 300 Exhibitors

Workshops on Ferrous, Non-Ferrous, Electronics, Paper, Tires, Plastics, Human Resources, and Much More!
ISRI’s Scrap Specifications are world renown and used as the basis for buying and selling scrap throughout the world.

ISRI’s Scrap Specs are available at: www.isri.org/specs

Scrap Specs are available for all commodities.
ISRI released a study to illustrate the significant economic and environmental impact of the U.S. recycling industry.

The jobs study and associated materials can be found here:

http://www.isri.org/policy-regulations/economy
Policy, Advocacy and Outreach

In partnership with JASON Learning, ISRI has launched a recycling education program for students in K – 12.

The program includes lesson plans, hands-on activities, and interactive web-based experiences.

More information can be found here:

ISRI develops and advocates policies on issues of interest to the scrap recycling industry

ISRI communicates with stakeholders, legislators, the public and others to ensure they understand the role recycling plays in the economy and environment.
Policy, Advocacy and Outreach

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An Example of Recycling

Stage one processing

-whole tires are reduced to 75mm chips using a **tire shredder** with a vibrating tire chip classifier, and related conveyors.

-no significant steel or fiber separation occurs at this stage.
Stage one processing

Storage of Raw Material

Primary Shredding

Screening

Storage of Finished Product

Stage Two Processing

THE MEDIUM SPEED GRINDER REDUCES THE TIRE CHIPS TO LESS THAN 15MM WHILE SEPARATING OVER 95% OF THE WIRE. INITIAL FIBER SEPARATION OCCURS IN THE GRIZZLY.

STEEL FREE CHIPS FROM 1 TO 15MM CAN BE PRODUCED WITH ADDITIONAL MAGNETS AND SCREENING.
Stage One Processing

Stage Two Processing

Stage Three Processing

THE GRANULATOR REDUCES 15MM CHIPS TO 6MM OR LESS GRANULES. SUBSTANTIAL FIBER SEPARATION AND ADDITIONAL METAL SEPARATION SYSTEMS FOLLOW THE GRANULATOR.
Stage Four Processing

THE 6MM CRUMB CAN BE REDUCED TO 0.8MM TO 2MM THROUGH **POWDERIZERS**. EACH POWDERIZER WILL PROCESS 1/2 T/HR, SO A PLANT PRODUCING 2 T/HR. WILL REQUIRE FOUR POWDERIZERS. FINAL FIBER AND METAL SEPARATION SYSTEMS FOLLOW THE POWDERIZERS. A DE-STONING UNIT SEPARATES NON-FERROUS METALS, AND ANY REMAINING STONES FROM THE POWDER.
Economics of Tire Processing

Typical Revenue Streams For Tire Processors

TDF may not figure prominently in the recycler’s business model.

4 STAGE PLANT OPERATING 3,600 HOURS PRODUCING 7,200 TONS OF POWDER

Tire Disposal Fee 22%
Steel Recovery 2%
Coarse Granulated Rubber 15%
Fine Powder 61%

Tire disposal fee, steel recovery, coarse granulated rubber, fine powder.
Economics of Tire Processing

Tire recycling is a capital intensive enterprise.

So What Does All This Cost?

• Stage 1 $500k to $700k
  • 75mm Chips are produced at this stage

• Stage 2 $600k to $800k
  • Crumb Rubber <15mm produced at this stage

• Stage 3 $800k to $900k
  • Crumb Rubber <6mm produced at this stage.

• Stage 4 >$900k
  • Crumb Rubber powder (<2mm) produced at this stage.
Support and Development of New & Existing Markets

Market Creation

Ensuring there is significant demand for the existing supply is critical to sustaining existing markets.

The development of new uses for processed rubber will expand existing markets and encourage the creation of new ones.
A good example of ISRI's support for new markets is the encouragement of rubberized asphalt in road construction. ISRI supports this market by discussing the importance of tire recycling and support for markets with legislators, the public and other stakeholders.