

NRC Markets Quarterly Webinar, Part 2: Latest Developments

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June 28, 2018



Quick Background on ISRI

Roles of the U.S. & China in the Global Recycling Market

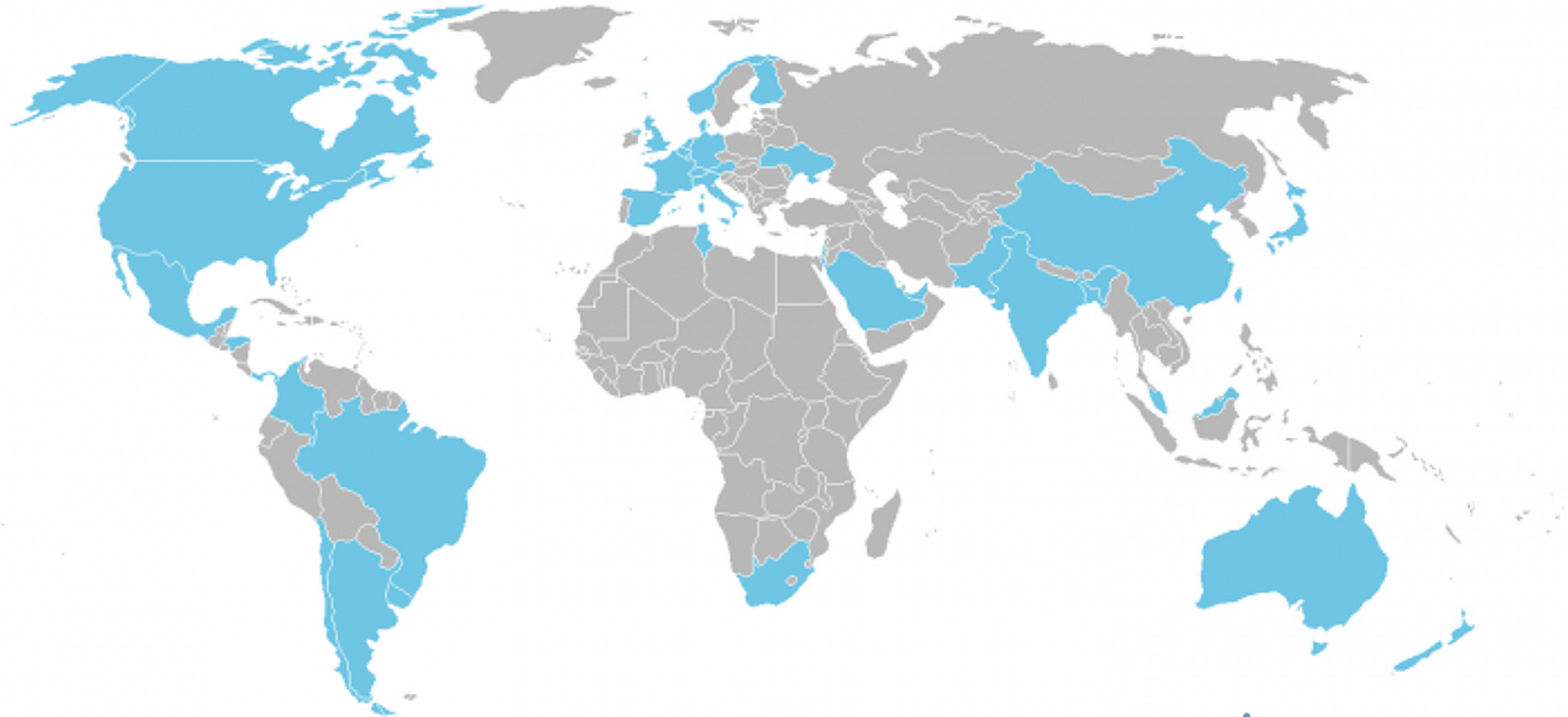
Market Shifts Resulting from Chinese Import Restrictions

Supply Chain in the U.S. for Scrap & Other Factors
Affecting Health of Recycling

Latest Chinese Actions & Compounding Challenges

Short & Long Term Responses to Strengthen Recycling

Voice of the Recycling Industry™



Our mission is to promote
safe, economically
sustainable &
environmentally
responsible recycling
through networking,
advocacy & education.

1,300+
Members

41
Countries

4,000+
Locations



Ferrous & non-ferrous metals



Paper



Plastics



Tire &
Rubber



Textiles



Electronics

U.S. Recycling Industry: A Snapshot



130,000,000+ Tons processed annually

Iron/Steel	67.0	Copper	1.8	Plastics	3.5
Paper	47.2	Lead	1.2	Electronics	5.0
Aluminum	5.0	Zinc	0.12	Tire (#)	122
In millions of tons (or other unit shown)					

\$117B Economic activity

\$13.2B federal, state & local tax revenue

Part of the Larger Global Industry Feeding a Global Manufacturing Supply Chain

800 million metric tons Total Global Consumption of Scrap Commodities

180 million metric tons Total Global trade in Scrap

The U.S. - and China - are key players in the global scrap market

37 million metric tons Total scrap exports from U.S. to 155 countries

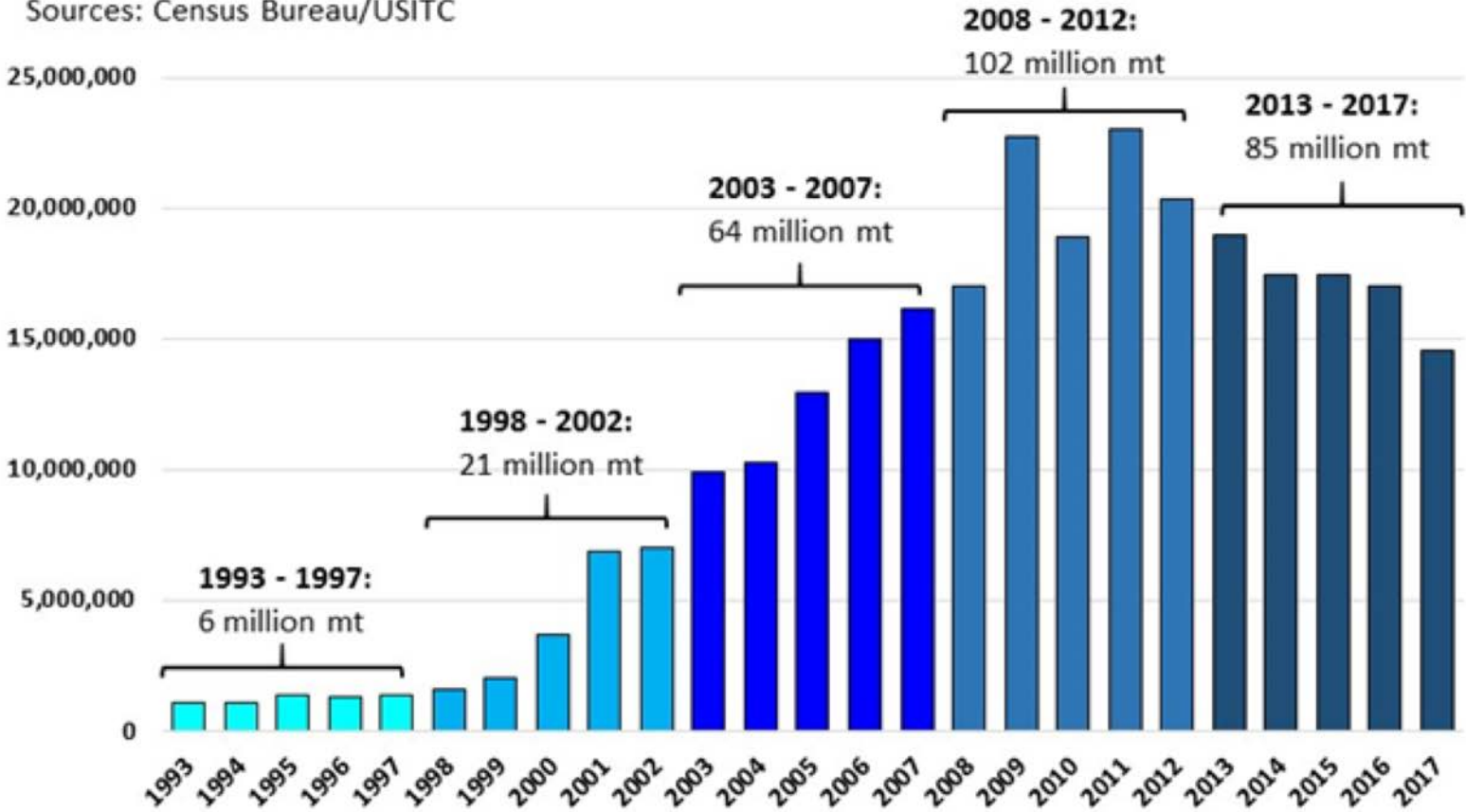
43 million metric tons Total imports into China from the World



25 Year Snapshot of U.S.-China Scrap Trade Relationship

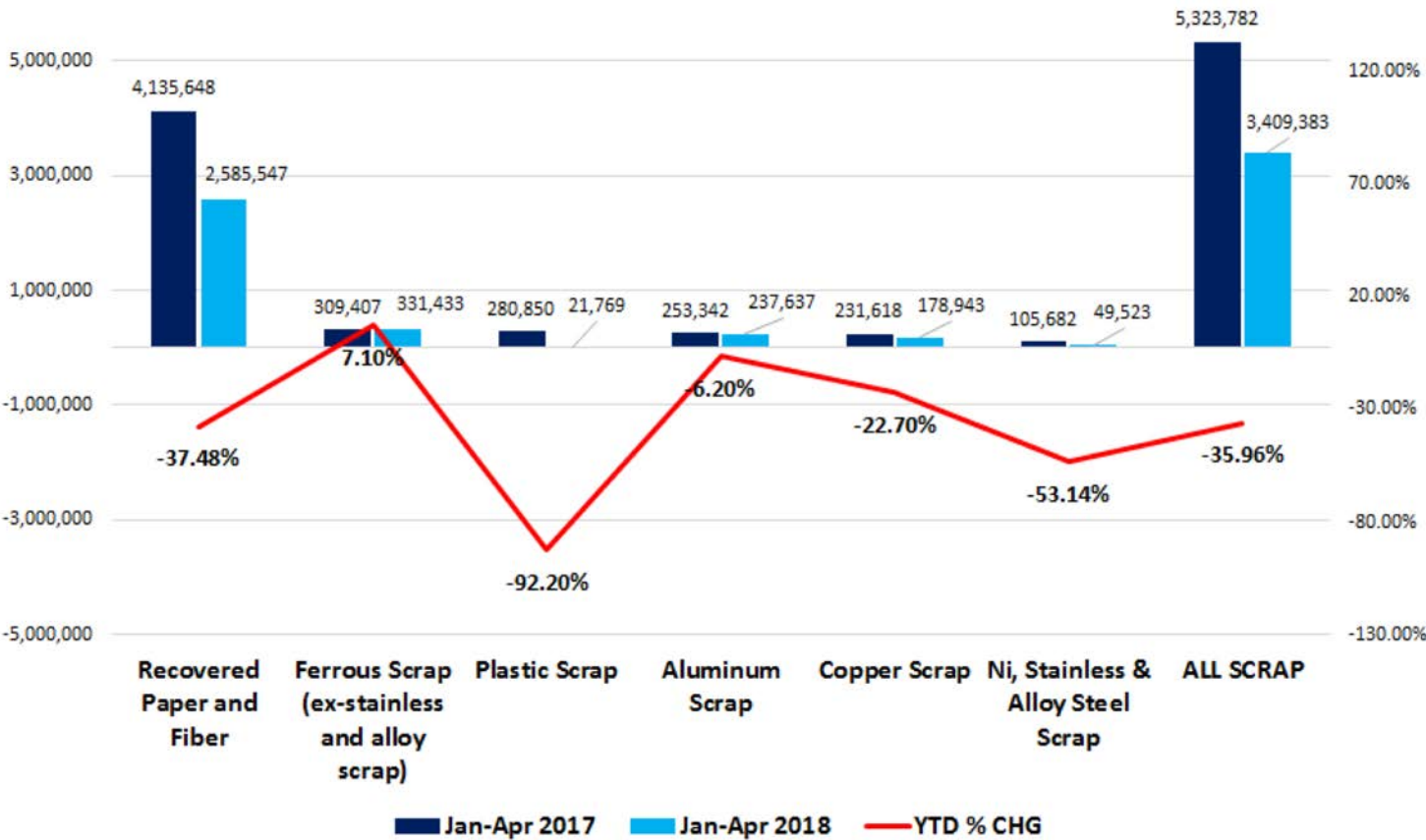
**U.S. Exports of All Scrap Commodities to China (incl. Hong Kong)
1993-2017 (metric tons)**

Sources: Census Bureau/USITC



YTD U.S. Scrap Exports to Mainland China, Jan-Apr 2018 vs. Jan-Apr 2017
(Metric tons and % CHG)

Sources: U.S. Census Bureau/U.S. International Trade Commission



60-70% of recyclables come from commercial & industrial sources.

Generally “source separated” therefore ...

- no cross contamination





Although only 30-40% of supply, residential recycling is the biggest challenge.

Why?

- Confusion as to what can be put in the bin
- Wishcycling
- Multiple residential collection systems: dual stream, single stream & one-bin
- Residential recycling infrastructure put in place over last 20 yrs designed to produce grades demanded by China (largest customer)



Quality is key

- Recycling is demand driven -- the product of the recycling process must meet grade requirements of the manufacturer or recycling will not occur regardless of the “volume success” at collection
- ISRI’s Scrap Specifications play a key role

The health of the recycling industry is also closely related to the health of the **Global Economy**, and thus sensitive to ...

- U.S. personal consumption spending and scrap generation
- Industrial production and manufacturing output
- Volatility in commodity prices
- Transportation and energy costs
 - backhauling contributed to the attractiveness of China as a market
- Policy developments
- Artificial manipulation of the market triggered by tariffs & other protectionist measures

SCRAP SPECIFICATIONS CIRCULAR



GUIDELINES FOR NONFERROUS SCRAP • FERROUS SCRAP • GLASS CULLET
PAPER STOCK • PLASTIC SCRAP • ELECTRONICS SCRAP • TIRE SCRAP

EFFECTIVE 4/16/2018

 **ISRI** Institute of
Scrap Recycling
Industries, Inc.
Voice of the Recycling Industry™

What is Driving the Changes Coming out of China?

- China is facing a Severe Environmental Crisis
 - “Beautiful China”
 - “Blue Skies”
- We cannot underestimate the role of Chinese protectionism (i.e., the desire of Chinese leadership to eliminate their dependence on imported resources)
 - Significant investment occurring by Chinese Govt in their domestic recycling infrastructure with an emphasis on urban collection systems
 - Driven by Government policy

July 2017 – March 2018

- WTO Notifications: G/TBT/N/CHN/1211 (“the ban”) and G/TBT/N/CHN/1211 (identification standard)
- Revised GB Standards Proposed (0.3% “carried waste” standard)
- *“Implementation Plan to Enhance Solid Waste Import Management System by Prohibiting the Entry of Foreign Waste”*
- Jan 1: Ban on 24 categories of materials, including post-consumer plastics and mixed-paper
- March 1: Carried Waste Standard went into effect (0.5% for all commodities except non-ferrous – 1%)

Since:

- April 19th: Announcement of additional bans
 - By end-2018: post-industrial plastics, compressed auto pieces, small electric motors, insulated wires, steel slag, vessels
 - By end-2019: stainless steel scrap, nonferrous scrap excluding Al & Cu, wood pallets
- May 3rd: Suspension of CCICNA for one month
 - No inspections for U.S. or Mexican shipments
 - Rationale: manner by which CCICNA was issuing certificates (centralization of control with Chinese Customs, but a warning of vulnerability)

CCICNA resumed operations in North America on June 4th

- Significant backlog
- May 28: China Customs issued new pre-inspection requirements: logistical & cost nightmare

Clarity (?): Manufacture-ready, mill-ready, melt-ready scrap can move into China

- May 18th: Announcement that China will accept imports of recycled PET in flake form
 - ➔ “any material that does not need to be restored and processed for its original purpose shall not be managed as solid waste.”
 - ➔ Pellet can be imported because not covered by solid waste import regime ... but nowhere in writing, just “understood”

What's In & What's Out? is the single most
important question for recyclers today vis a vis the
Chinese market

June 16th: Statement of Chinese intention to eliminate “solid waste” imports by 2020

What's In & What's Out of “solid waste” definition? is the single most important question for recyclers today vis a vis the Chinese market



June 26, 2018

China Reaffirms Intent to Try to Eliminate Scrap Imports by 2020

Xinhua reported this week on a wide-ranging policy statement by the Central Committee of China's Communist Party that was released on June 16 and that outlines the Chinese government's overall strategy for reducing pollution across the country. The statement, unofficially translated as "Good Pollution Prevention and Control Strategy," discusses the path towards President Xi's envisioned "Ecological Civilization" of a nation free of pollution. The "Five in One" policy talks about understanding the causes for China's environmental crisis, the vision for a "harmonious coexistence of man and nature," strengthening the party's leadership and government's resources to battle the crisis, pollution reduction targets and how to promote a greener lifestyle among the people.

For scrap trade, the statement notes the following (as unofficially translated): *"China has completely banned the entry of foreign garbage, cracked down on smuggling, drastically reduced the number and types of solid waste imports, and strives to achieve zero imports of solid waste by the end of 2020."*

ISRI believes this to be a reaffirmation of policy statements made in 2017 rather than a new policy or a new ban, although we are in the process of confirming that. The nuances of the Chinese language, coupled with a wider understanding of China's overall environmental policies and motivations, give us clues that China's market continues to close to scrap imports because of an intent to fulfill their own resource needs through domestic generation. The statement comes amid the completion of the government's reorganization and outlines the mission of the new Ministry of Ecology and Environment.

There is no doubt that China's import restrictions continue to create many challenges for the recycling industry, especially given the short transition time. But this statement confirms that the restrictions are here to stay. ISRI is continuing to aggressively monitor all that is happening in China so as to provide the latest information to members and will provide updates as soon as additional information is available.

Please contact [Adina Renee Adler](#) if you have any questions.

Compounding Challenges: US-China Trade War

- Tariffs being imposed on key imports from each country, introducing further uncertainty & volatility into the scrap markets
- US imposed tariffs announced earlier this month
 - ISRI able to get several products related to recycling machinery that were on the proposed list removed in the final document
 - But, 25% Tariff Placed on Shredder Castings Imported from China
- Chinese retaliatory actions
 - Effective April 2nd -- 25% tariff on US Al scrap exports imposed by China in retaliation for the tariffs imposed by the US on steel and aluminum as part of the US Government's 232 investigation
 - 2017: US recyclers supplied 50% of China's total imports of Al scrap
 - Translates to a \$300 million price burden in a trade relationship that represents nearly 25% of the entire world's trade in Al
- Increased tension makes dialogue very difficult





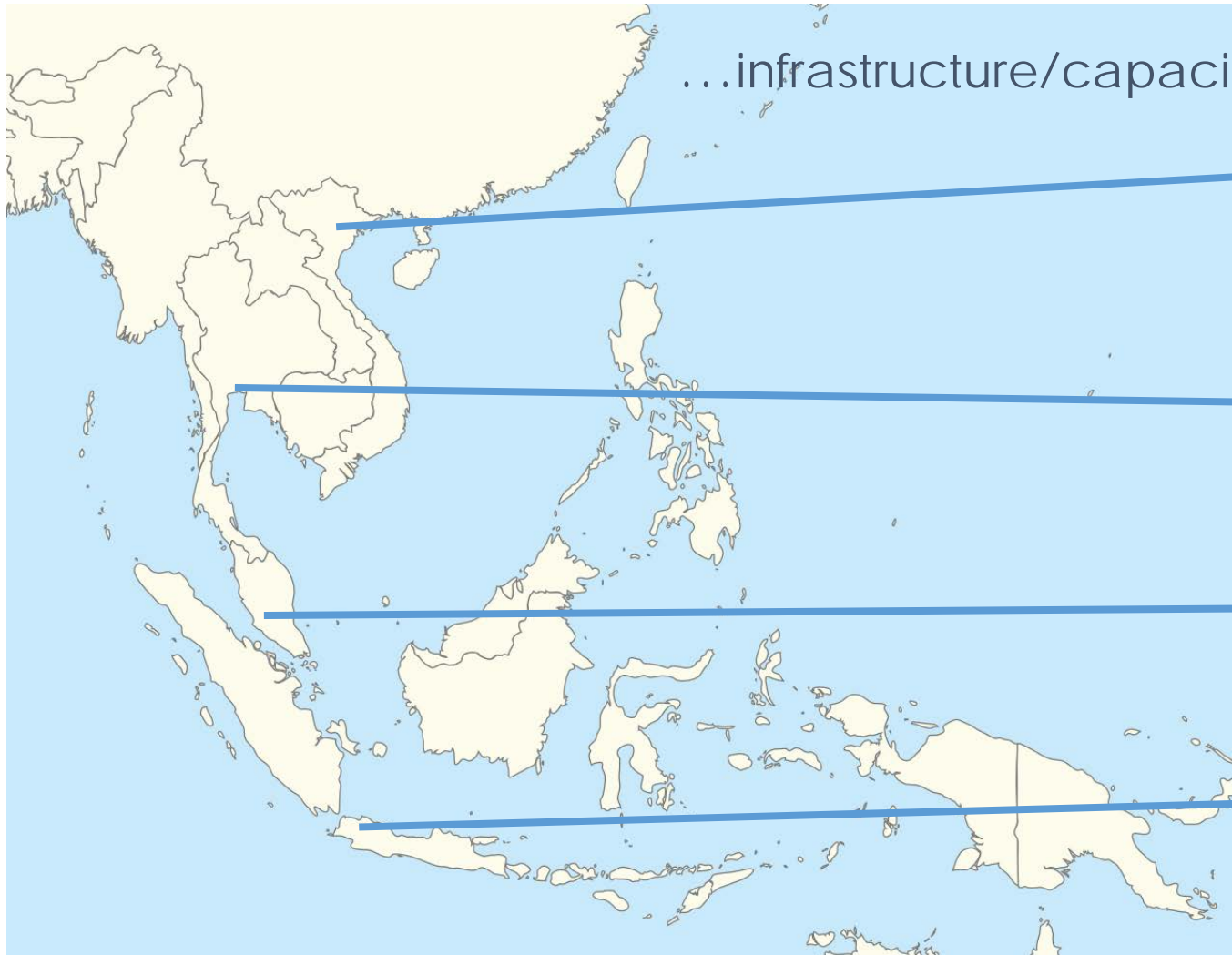
Trade diversion keeps materials moving...

Recovered Paper

COUNTRY	FAS Value / Metric Tonnage		% CHG 2016-2017
	2016	2017	
India	\$292,660,728	\$378,265,202	29%
	1,561,837	1,930,720	24%
Indonesia	\$58,871,160	\$76,848,556	31%
	381,358	440,585	16%
Vietnam	\$18,858,932	\$57,738,701	206%
	120,673	397,162	229%
Thailand	\$39,591,315	\$42,010,097	6%
	293,769	283,019	-4%

Plastics

COUNTRY	FAS Value / Metric Tonnage		% CHG 2016-2017
	2016	2017	
India	\$49,643,864	\$58,361,023	18%
	91,913	123,165	34%
Vietnam	\$19,998,550	\$45,701,105	129%
	66,747	137,044	105%
Malaysia	\$8,034,411	\$31,093,741	287%
	38,790	119,098	207%
Thailand	\$1,434,617	\$10,732,390	648%
	6,541	32,680	400%



...infrastructure/capacity shortfalls & risk of copycat restrictions

Vietnam

Capacity constraints at one port leads to moratorium on plastics (6/25-10/15) and enforcement of import licenses on paper at that port

Thailand

Potential ban on scraps; discrepancy in trade classification for insulated wire for tariff purposes

Malaysia

Paperwork requirements and temporary stop to import permit issuance

Indonesia

Strict import licenses and 100% Pre-shipment inspections

Some investment in processing capacity being made within the U.S. by recyclers

- Includes Chinese who want to process in the U.S. & ship mill-ready grades to China

Some Single stream MRFs slowing down sorting; adding optical sorters &/or additional people on the sorting lines

Exploration of New Markets

Material Stockpiling

Elimination of materials from municipal recycling programs; temporary suspensions

Relaxation of mandatory recycling goals (AB 3178 in CA)

Need to Address Quality of Recyclables Entering the Stream

- Zero Tolerance Guidelines for Recovered Fiber in ISRISpecs Announced
 - “**Zero Tolerance:**” any material that contains any amount of Medical, Organic, Food Waste, Hazardous, Poisonous, Radioactive or Toxic waste and other harmful substances or liquids
 - “**Prohibitive Materials**” clarified to include any materials which by their presence in a packing of paper stock, in excess of the amount allowed, will make the pack unusable as the grade specified; or any materials that may be damaging to equipment.
- “*Guidelines for Inbound Curbside Recyclables for Material Recovery Facilities (MRFs)*” [www.isri.org/specs]
- ISRI working with APR on sorting protocol to evaluate how 2D & 3D designed to items behave on a conveyor to help MRFs better capture inbound materials.
- Municipalities & recyclers need to work together, understanding the quality needs of the buyer, using the ISRISpecs as a guide but also factoring in local market factors
- Increased public education & awareness to improve household efforts to separate trash from recyclables, including clear guidance on what can be recycled, how to clean food containers, the importance of keeping paper dry and the need to avoid wishcycling.

Efforts Needed at Creating Greater Demand to Drive Recycling

- ISRI's Design for Recycling™ program
- Partnership with DOE on REMADE™ Institute
 - Multi-year, \$50 million effort formed to drive advanced manufacturing within the U.S., focused on sustainability & recyclability
 - Established in 2017
- Collaboration w/ Plastics Industry Association (begun in 2017) at creating markets for TPO plastic auto bumper covers
- APR's Recycling Demand Champions Program – focused on mixed plastics

Need to Rethink Packaging and Product Design (Design for Recycling™)

- Requires a common definition of what is recyclable (vs what can be technically recycled but lacks markets or the economics are not viable)
- Engagement with recyclers and manufacturers
- REMADE

Unified Global Standards Needed

- ISRISpecs used for more than 80 yrs; Govt of India adopted, but China did not
- EN-643: EU-wide quality standard for recovered paper
- Others?

Communities must decide where they are going to pay for increased costs of sorting to achieve a quality recyclables:

- At collection through shifts away from one-bin and single stream, or
- In contracts with MRFs/recyclers to compensate for higher processing costs?

Most importantly, all of us – municipalities, recyclers, brand owners, industrial consumers and others – need to work together, to identify solutions to the ever changing stream of consumer products entering recycling, while also ensuring we meet the needs of the industrial consumer, at the end of the chain, to ensure a quality commodity product.

The Conversation Continues...

Please join us Aug. 22nd & 23rd in Nashville ...



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