



2018 MORA Creating Connections Conference



September 12, 2018





Founded in 1988, Now Part of AISI



**American
Iron and Steel
Institute**



Steel
Market Development
Institute



Steel® Recycling Institute



AISI Producer Members

United States

[AK Steel Corporation](#)

[ArcelorMittal USA](#)

[California Steel Industries, Inc.](#)

[Cleveland-Cliffs Inc.](#)

[DTE Energy Resources](#)

[EVRAZ North America](#)

[Harsco Metals & Minerals](#)

[Nucor Corporation](#)

[SSAB Americas](#)

[Tenaris Bay City](#)

[TimkenSteel](#)

[United States Steel Corporation](#)

Canada

[Algoma](#)

[ArcelorMittal Dofasco](#)

[Ivaco Rolling Mills 2004 L.P.](#)

[Stelco](#)

Mexico

[Altos Hornos de Mexico S.A.](#)

[ArcelorMittal Mexico](#)

[Deacero S.A.P.I de C.V.](#)

[Tenaris Tamsa](#)

[Ternium Mexico](#)

Plus over 120 associate members from the industry



Meet SMDI



Steel Market Development Institute

Investor Companies



Partner Alliances



Auto/Steel
Partnership



Steel Framing Alliance™
Steel. The Better Builder.



CFSEI
COLD-FORMED STEEL
ENGINEERS INSTITUTE





- **Ultra light Steel Auto Body**



- **Steel Bridges**



- **Steel Utility Poles**



- **Residential Steel Framing**





Meet SMDI Sustainability Group



Steel
Market Development
Institute

Mark A. Thimons

Vice President, Sustainability, SMDI

Kishore Mahbubani
Sustainability Analyst

David Keeling
Director, Recycling

Brandie Sebastian
Director, Life Cycle Assessment

After all, Recycling is the “gateway drug” to sustainability!



Celebrating 30 years of SRI



The Steel Recycling Institute is an industry association with the mission of promoting and sustaining steel recycling. It is the primary information and technical resource for entities interested in steel recycling and the use of steel in sustainable construction.

The SRI also serves as the clearinghouse for life cycle assessment data for the North American Steel Industry. The SRI documents the environmental performance of steel products through life cycle assessment (LCA) studies and environmental product declarations (EPDs).

-Since 1990, the industry has reduced energy intensity by 31 percent and CO2 emissions by 36 percent per ton of steel shipped. Through recycling, the steel industry saves the energy needed to power 20 million homes for one year.





President



Vice Chair



Secretary



Wisconsin Council on Recycling
Chair



Board Member



Advisory Board Member



Advisory Board Member



Why recycle Steel?

Economics - saves money - substitution cost

Environment - conserves resources

Energy: 5450 BTU saved per lb. Of steel

Saves per ton of steel

Coal - 1,400 lbs

Iron ore - 2,500 lbs

Limestone - 120 lbs

Saves landfill space

1 cubic yard whole steel cans = 150 lbs

1 cubic yard flattened steel cans = 850 lbs



A Partnership in Steel Making

Two Production Methods:

BOF or Integrated Mill

About 40% of overall U.S. production

Uses coke to convert Iron ore to Pig iron

Typically 65-75% molten iron

and **25-35% scrap**

EAF or Mini Mill

About 60% of U.S. production

Uses primarily scrap and

direct-reduced iron (DRI)

Typically 0-25% iron and **75-100% scrap**



**No matter what the process used,
we need old steel to make new steel!**



Steel Plants of North America





Additional Steel Capacity announced in the last year

Aero Junction, HRC Mill in Mingo Junction, OH

Charter Steel SBQ mill in Cleveland, OH

Commercial Metals Rebar Mill in Durant, OK

Expansion of Steel Dynamics Rebar Mill in Roanoke, VA

NLMK restart of HDG line in Sharon, PA

New Nucor Steel Rebar mills in Sedalia, MO and Frostproof, FL,

Expansion of Nucor Steel Merchant Bar Mill in Kankakee, IL

Republic Steel in Lorraine, OH

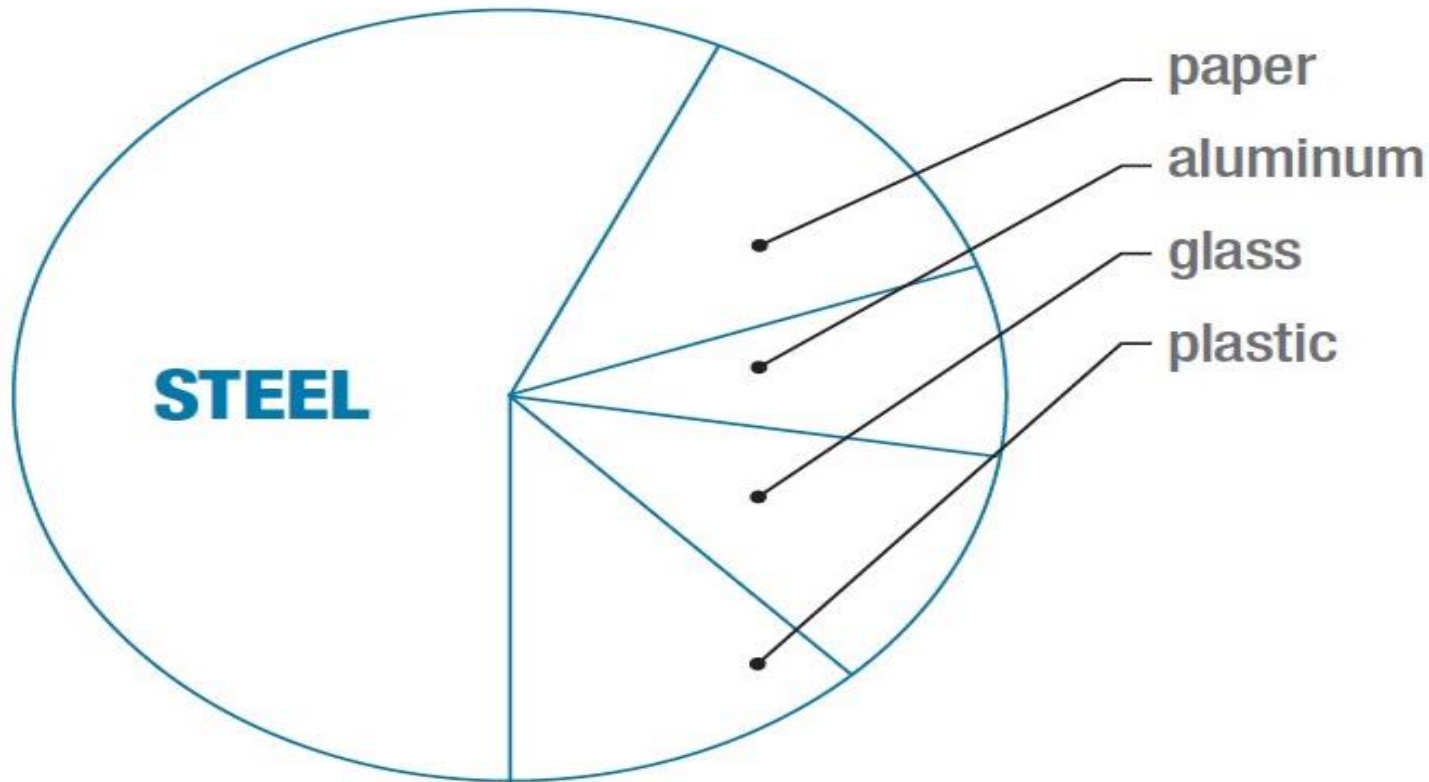
Possible Expansion of Big River Steel in Osceola, AR

Bilstein Cold Rolled Steel starting up a greenfield cold-rolled sheet facility in Bowling Green, KY

Restart of Blast Furnace at US Steel plant in Granite City, IL



Steel Recycling vs Other Materials







World Steel Market (2017)

- World Production = 1,691,200,000 metric tons
- Chinese Production = 831,700,000 metric tons
- US Production = 81,600,000 metric tons

China- 831 million metric tonnes
Japan- 104.7 million metric tonnes
India- 101.4 million metric tonnes
USA- 81 million metric tonnes

Top exporters

China #1
Japan #2
South Korea #3
US #16

Top importer

US-35.7 Million Metric Tonnes

USA! USA! USA!

Steel scrap exports virtually unaffected by Green Fence or National Sword but Blue Sky has affected all exports.

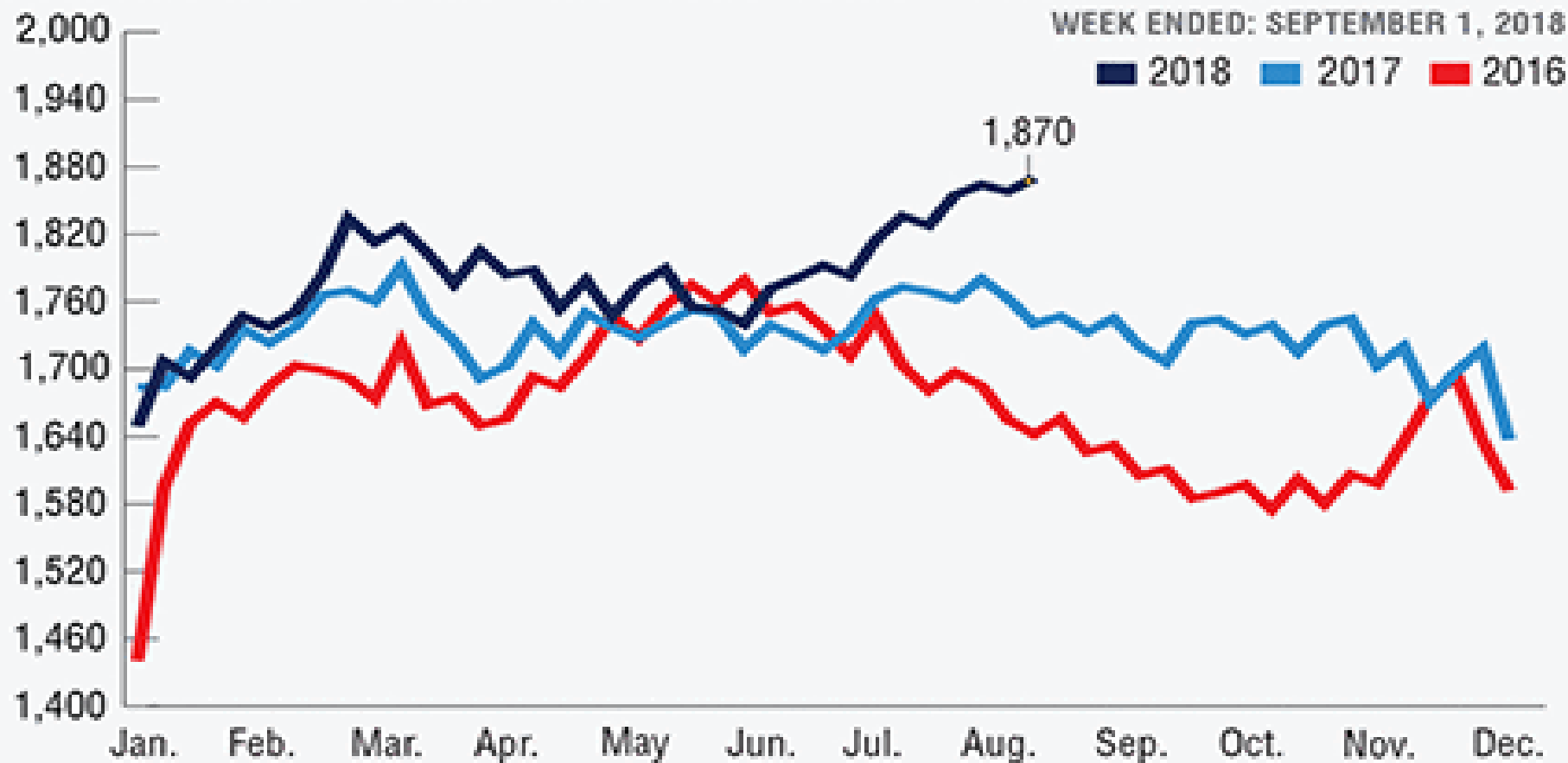
Concerned about underutilized Chinese Import licenses due to risk of rejection and associated costs

Good News, Steel can scrap is typically not exported and US mills have capacity to consume every pound!



WEEKLY TONNAGE OF RAW STEEL PRODUCTION

(thousands of net tons)

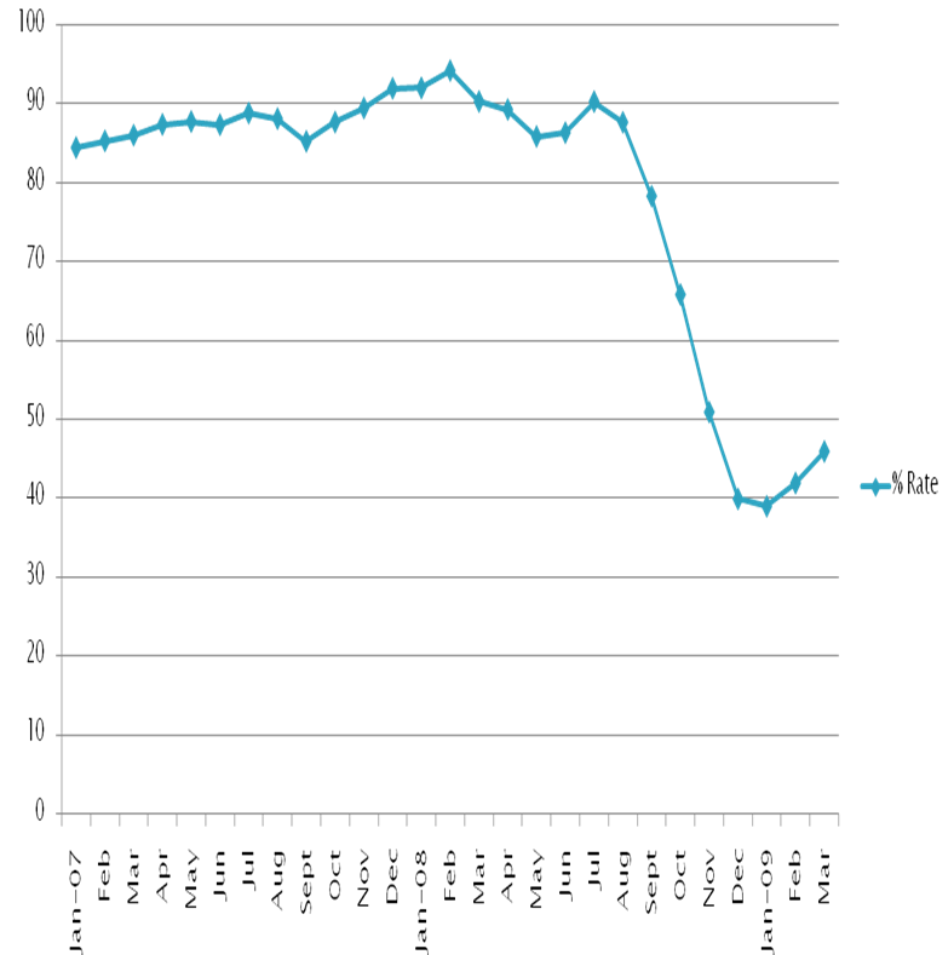


Source: Compiled by AMM using data from American Iron and Steel Institute.



Capacity Utilization Effect on Supply vs Demand

% Rate



Then:

August 2008

Prime Scrap \$900.00 / GT

Capacity Utilization = 87.66%

September 2008

Prime Scrap \$500.00 / GT

Capacity Utilization = 65.86%

December 2008

Prime Scrap \$125.00 /GT

Capacity Utilization = 39.99%

Now:

Week of September 1, 2018

Capacity Utilization = 79.8%



Overall Steel Recycling Rate:
 Automobile Steel Recycling Rate:
 Appliance Steel Recycling Rate:
 Container Steel Recycling Rate:
 Construction Structural Rate:
 Construction Reinforcement:

76% (64.5 million tons recycled)
 87% (14.3 million tons recycled)
 88% (2.7 million tons recycled)
 71% (1.3 million tons recycled)
 98% (*based on C/D survey)
 71% (*based on C/D survey)



Steel cans in the marketplace



Steel food cans make up 90% of the steel can marketplace



Steel Aerosol cans are 7% of the steel can marketplace

Over 70% of Americans have access to programs which include empty aerosol cans.



Steel paint cans are 3% of steel cans in the marketplace



No matter, the vehicle you drive...



It is the **steel** in that vehicle that keeps you safe and secure



APPLIANCE RECYCLING

A typical appliance is produced using about 65 percent steel which is the primary reason nearly 90 percent of discarded appliances are recycled each year.

The steel content drives the recycling of appliances!

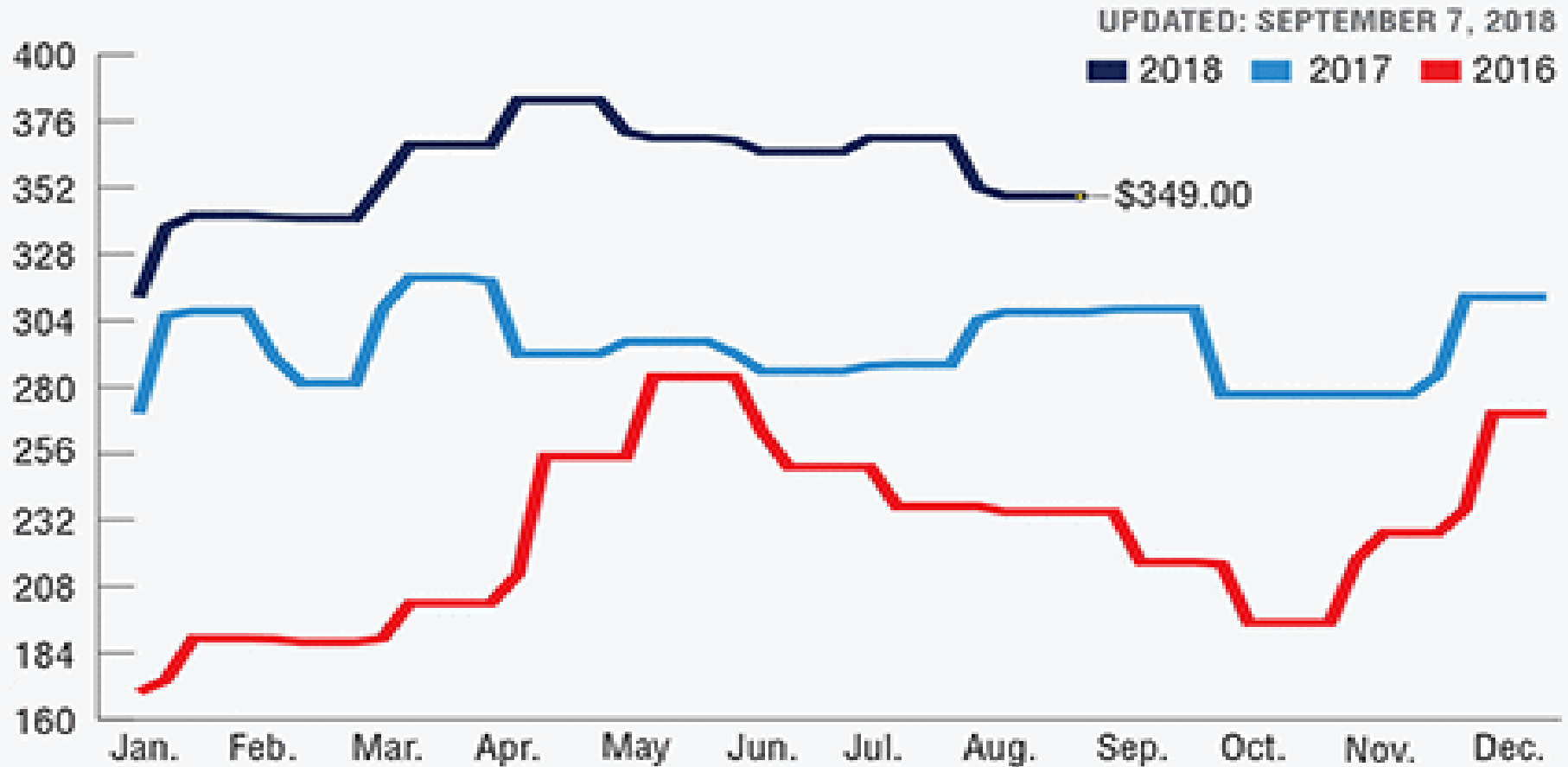




American Metal Market

AMM WEEKLY SHREDDED SCRAP PRICE COMPOSITE

(price per gross ton)



Based on markets in Alabama, Pittsburgh, Chicago, and Philadelphia.

Source: AMM



Structural recycling rate steady for last 10 years!

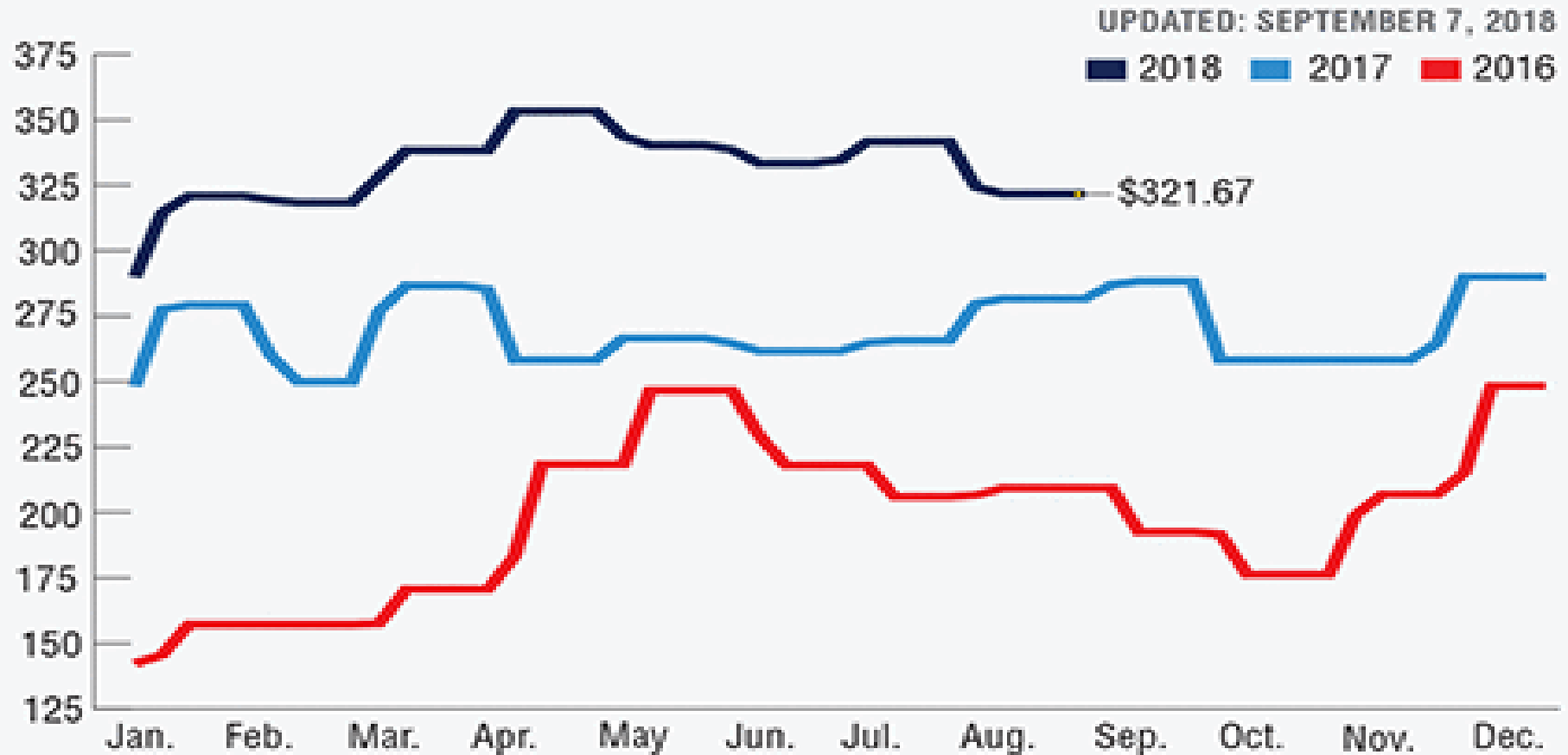




American Metal Market

AMM WEEKLY NO. 1 HEAVY MELT PRICE COMPOSITE

(in dollars per gross ton)



Based on markets in Pittsburgh, Chicago and Philadelphia.

Source: AMM



The Strength and Sustainability of Today's Steel

Willis Tower, Chicago, IL



Then (1972)

- Sears Tower
- 76,000 tons of steel
- 20% recycled content (est)

Now (2013)

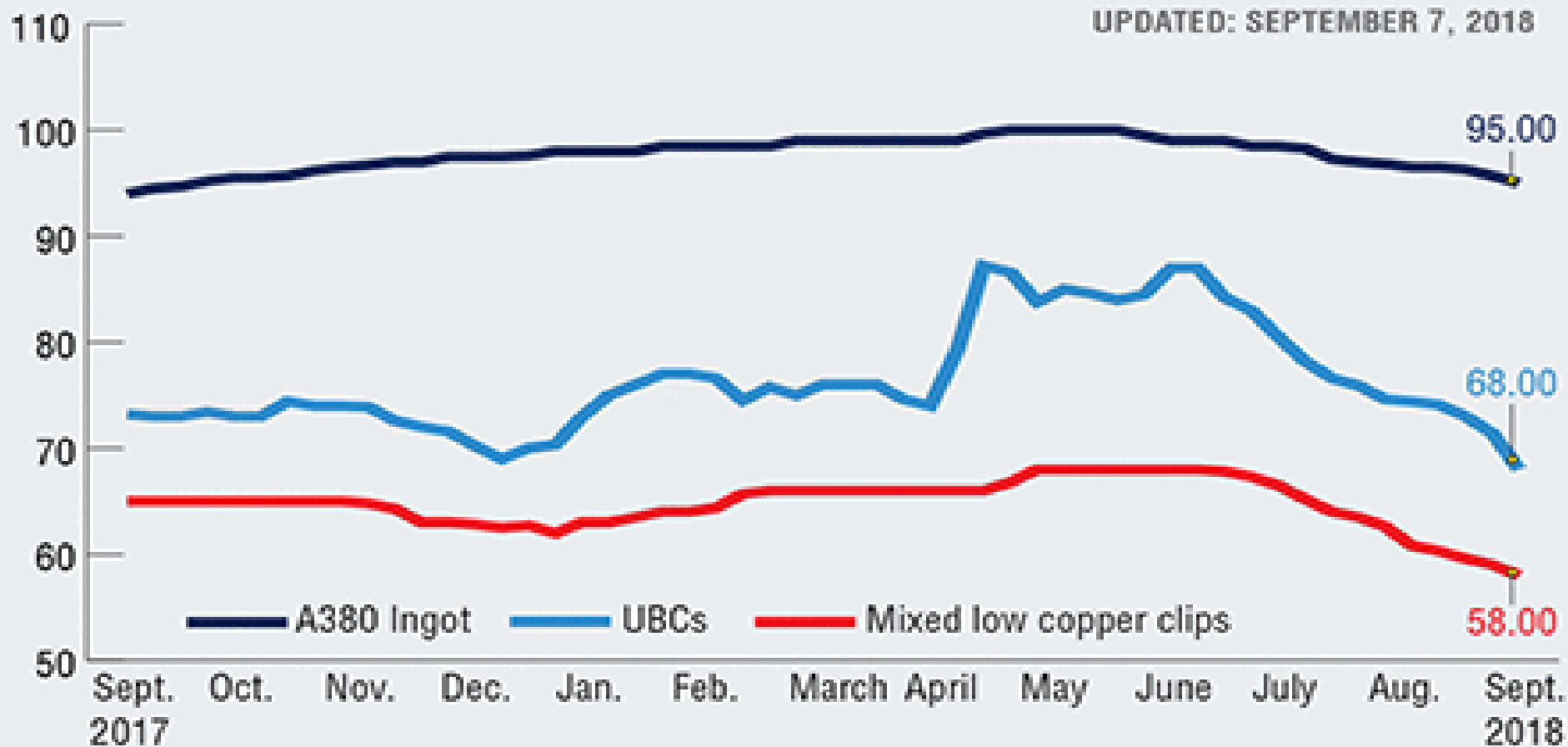
- Willis Tower (second tallest in hemisphere)
- 60,000 tons of steel (strength)
- 90% recycled content (for structural steel)
- 43,000 automobiles
- 7,000 tons of steel cans from curbside-drop off
- 10,000 tons of industrial scrap
- 876,000 fewer man-hours
- 58% smaller carbon footprint
- 74% less embodied energy



AMM A380 INGOT/SCRAP ALUMINUM PRICES

(cents per pound)

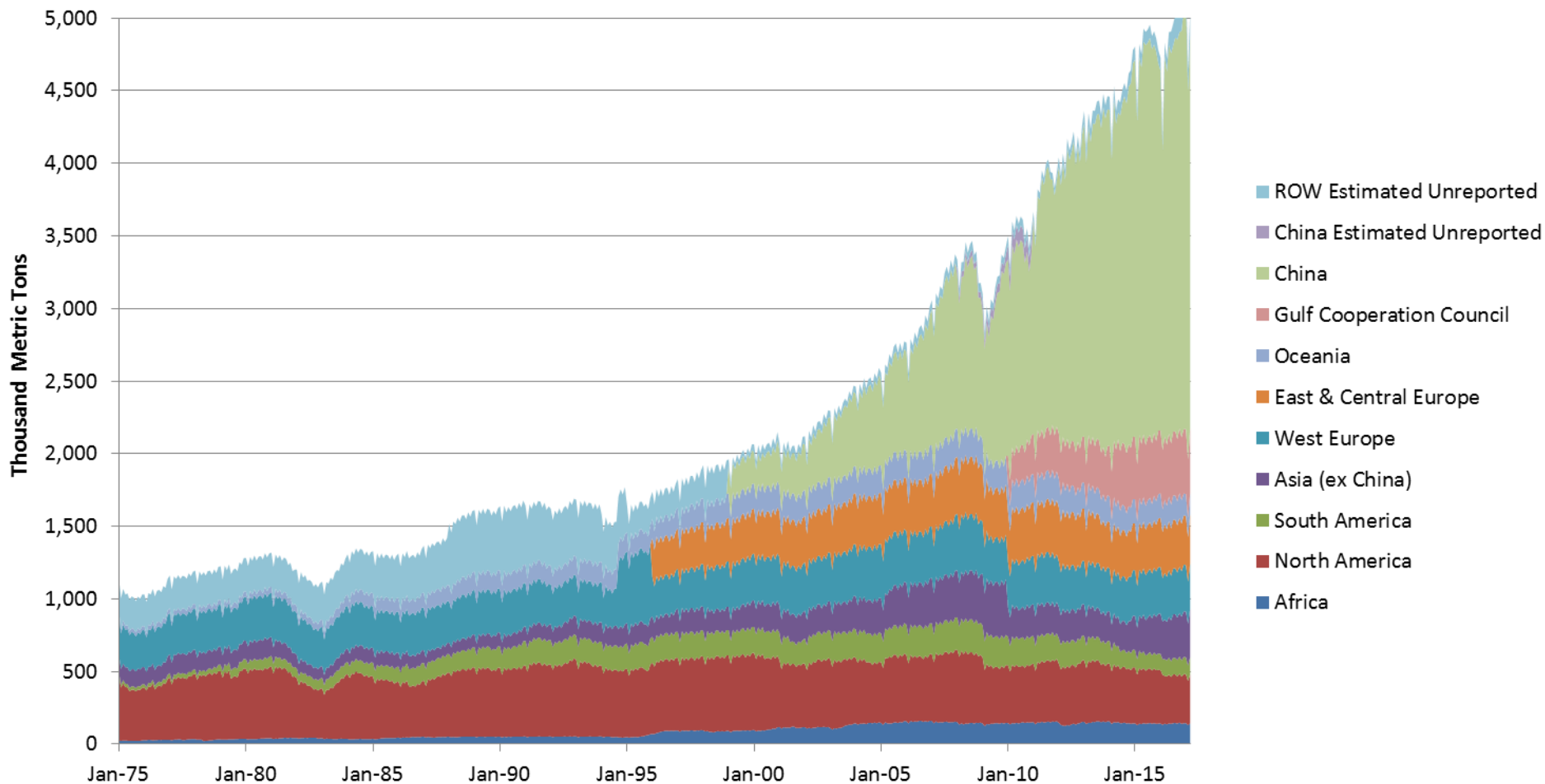
UPDATED: SEPTEMBER 7, 2018



Source: AMM



World Primary Aluminum Production





Ferrous Scrap Dealers

Years of steel recycling experience

Convenient locations

Container and transportation capabilities

Complete processing equipment

Strong relationships with end markets

Look for additional consolidation/vertical integration



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