# Steel Market Outlook







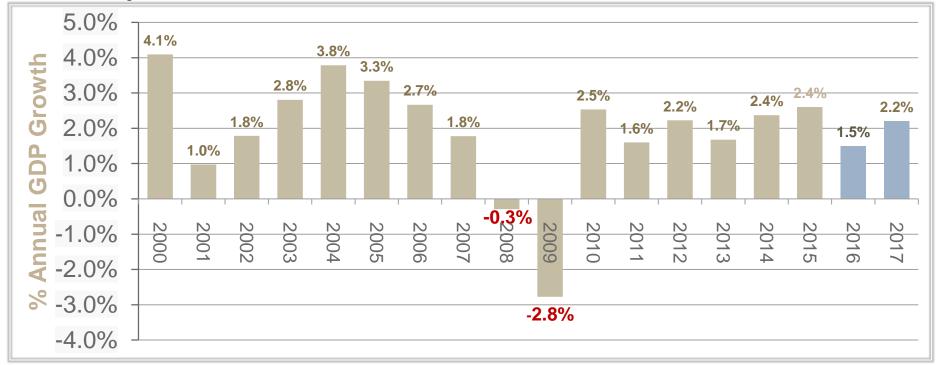
### **Outline**

- Economic indicators
- Key steel consuming markets
- Steel consumption trends
- Global steel outlook and raw materials
- CO2 regulations and the steel industry
- Questions

# U.S. Gross Domestic Product (GDP)



Real GDP Growth vs. Prior Years 2000-2015, Forecast 2016-2017 Source: U.S. Department of Commerce; IHS November 2016



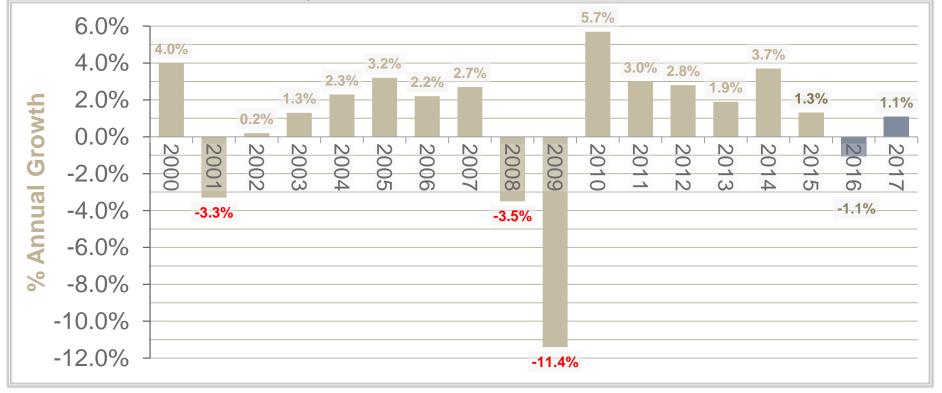
- Real GDP growth has fallen below 2% in each of the last three quarters, measuring 0.9% in Q415, 0.8% in 1Q16 and 1.2% in 2Q16 (advance estimate). Growth in PCE climbed to 4.2% in 2Q16 from 1.6% in 1Q16, while nonresidential fixed investment growth was negative for the 3<sup>rd</sup> consecutive quarter as investment fell in nonresidential structures (-7.9%) and equipment (-3.5%).
- 2017 full year GDP growth is forecast at 2.2% with growth driven largely by the same sectors as in 2016, though nonresidential fixed investment and industrial production are expected to make larger contributions, improving upon their 2016 softness.

# Industrial Production Index (IP)

Percent Change in Index vs. Prior Years 2000-2015, Forecast 2016-2017

Source: U.S. Federal Reserve Board; base year for index 2012: November IHS forecasts.





- IP declined by 1.0% in 2Q16, following a 1.8% drop in 1Q16. Mining (which includes crude oil and natural gas production) declined significantly (-15.9%) during the period. Manufacturing output (NAICS basis) fell 0.8%.
- The 2016 forecast for IP is negative as the mining sector will decline further, offsetting marginal gains posted in manufacturing. Weak global conditions and prior appreciation of the U.S. dollar will limit exports.
- IP is seen returning to growth in 2017 at 1.1% as headwinds slowly dissipate for the manufacturing and upstream energy sectors.

# **Steel Consuming Markets**

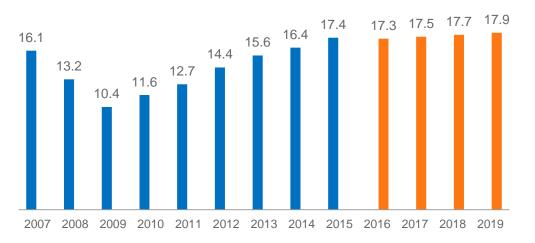




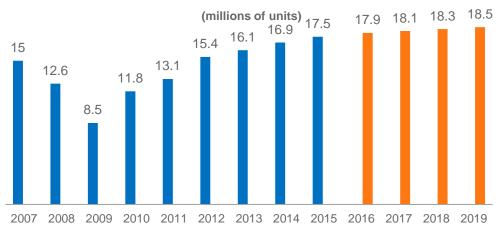
### **Automotive**



#### US Auto Sales (millions of units)



#### **North America Auto Production**



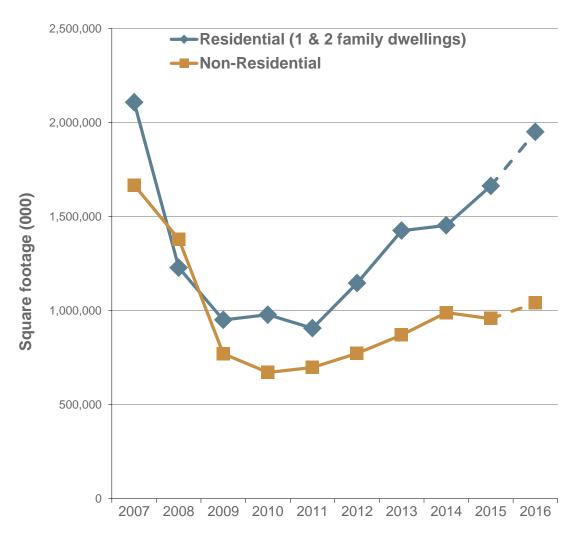
- Pent-up demand from the recession is exhausted on the retail side of the market. Replacement is now the biggest driver of retail sales.
- The average age of vehicles on the road is now over 11.5 years. The fleet is old and needs to be replaced. This will maintain sales at a high level for the next several years.
- There is still some pent up demand left on the fleet side of the market. Fleet sales are now increasing as a percent of total sales.
- As the housing market improves demand for pickup trucks is improving.
- Low gasoline prices are also increasing demand for trucks.
- Trucks achieved record market share in 2015 at 57%. Through 2016 trucks are running at 61% market share.
- Although the rate of increase will slow as long as demographics & economics remain positive sales will continue to increase, unless there is a change in lifestyle and behavior. There is no peak in sales until we go into a recession.

5

## **Building construction**

#### Some growth in private construction





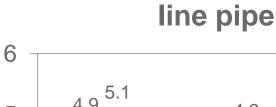
\* Non-building structures (e.g. infrastructure) not included

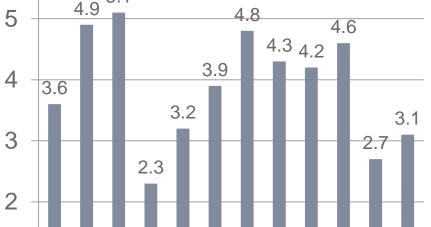
- Economic conditions continue to support steady improvement in 2016, but not robust recovery.
- The residential construction recovery that began in 2012 should continue its momentum in 2016 & 2017 prompted by improving labor markets, demographics, affordability, and mortgage availability. Homeownership rates remain historically low; however, growth in multifamily construction is expected to slow in 2016.
- The non-residential construction sector weakened in 2015, however market fundamentals suggest return to modest growth across both commercial and institutional sectors in 2016 & 2017.
- Growth in the residential sector should continue to provide a catalyst for growth in several nonresidential segments in 2016 & 2017.

# **USA Energy Market Steel Demand**

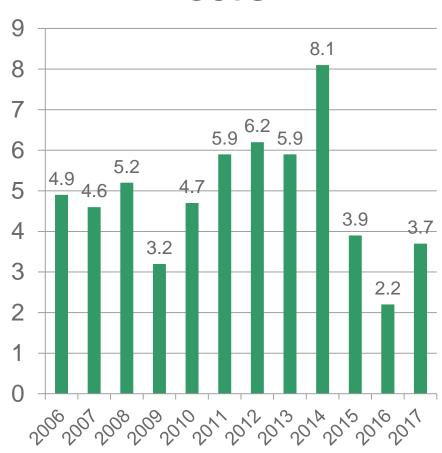


(millions of tons)





### **OCTG**



Preston optimistic case has OCTG demand at 4.5m tons for 2017

Source: Preston Pipe and Tube Report, November 2016

Totals: 2014 - 12.3

2015 - 8.5

2016 - 4.9

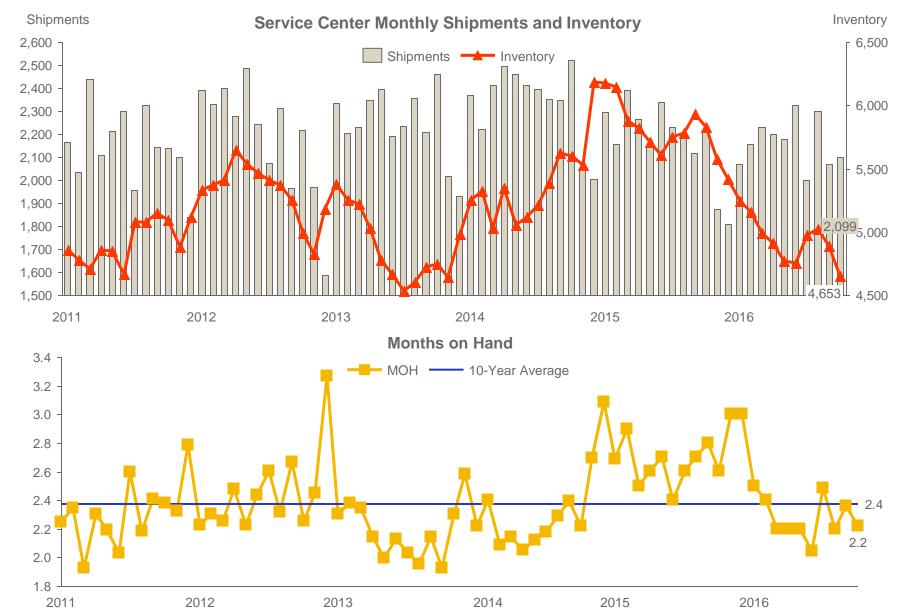
2017 - 6.8

### U.S. Service Center Data: Carbon Flat Roll

Shipments, Inventory, and Months-on-Hand

Source: MSCI November 2016

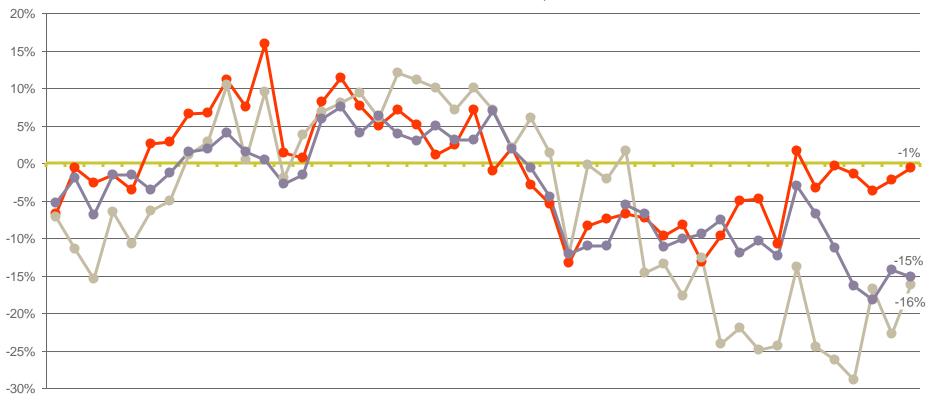




### Average Daily Shipment Rate: Y/Y % Change







01 02 03 04 05 06 07 08 09 10 11 12 01 02 03 04 05 06 07 08 09 10 11 12 01 02 03 04 05 06 07 08 09 10 11 12 01 02 03 04 05 06 07 08 09 10 12 016

Shipments	Flat Roll	Plate	Pipe & Tube
Jan-Oct 2015	20,124	3,218	2,008
Jan-Oct 2016	19,530	2,494	1,781
Diff: Tons	-594	-724	-226
Diff: %	-3%	-22%	-11%

### Steel markets direction in 2017



Auto	
Residential Construction	1
Non-residential Construction	1
Machinery	
Appliance	1
Infrastructure	
Energy	1
Steel Inventories	1

- There is no expectation that we will see robust growth any time soon.
   Steel markets are still slowly recovering from the recession.
- Auto growth is in Mexico in 2017.
  USA market is flat.
- Non-res construction will add about 1 million tons of demand in 2016.
- Energy activity will continue to be soft but recovers off the bottom in 2017.
- Steel inventories will add some demand in 2016 but will end low in 2016 and will be rebuilt in 2017.

Source: AMUSA analysis



# USA apparent steel consumption

	Short tons (in millions)	% change
2013	106	1%
2014	118	12%*
2015	106	-11%
2016	105	-1%
2017	108	3%

<sup>\*</sup>About 3 million tons of the 2014 increase was an inventory overbuild due to a late year surge in imports.







# Weekly US raw steel production Capacity utilization



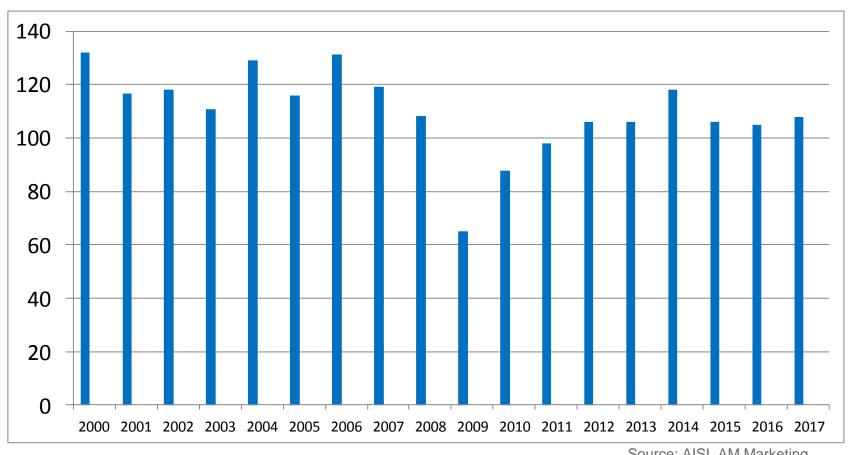


Source: American Iron & Steel Institute

# **USA Apparent Steel Consumption**

million of short tons





Drop in ASC in select recessions 1953 - 22%

1957 - 22%

1973 - 23%

1981 - 27%

2009 - 41%

Source: AISI, AM Marketing

# **USA** imports and shipments





Q1 - 34% Q2 - 30%

Q3 - 27%

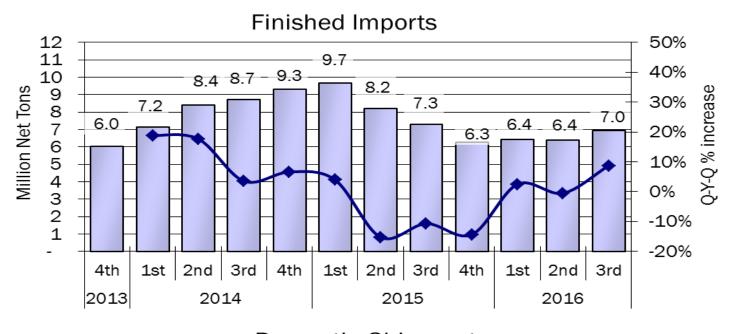
Q4 - 26%

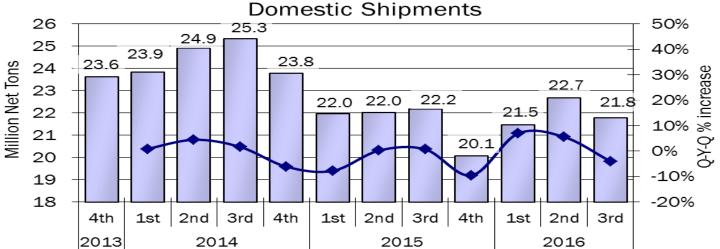
#### 2016

Q1 - 25%

Q2 - 23%

Q3 - 26%





### **Trade Cases**



Flat Roll Anti-Dumping Duty Case Timelines								
Product	CTD (CORE)	CR	HR	CTL Plate				
AD Targeted Countries	China, India, Italy, S.Korea, Taiwan	Brazil, China, India, Japan, S.Korea, UK	Australia, Brazil, Japan, S.Korea, Netherlands, Turkey, UK	Austria, Belgium, Brazil, China, France, Germany, Italy, Japan, S.Korea, South Africa, Taiwan and Turkey				
Start DOC Initiation ITC Prelim DOC Prelim	6/3/2015 6/23/2015 7/24/2015 11/2/2015	7/28/2015 8/17/2015 9/10/2015 3/1/2016	8/11/2015 8/31/2015 9/25/2015 3/14/2016	4/8/2016 4/28/2016 5/23/2016 11/7/2016 <sub>(1)</sub>				
DOC Final ITC Final Issuance of Order	5/24/2016 6/24/2016 7/1/2016	16 7/21/2016 8 16 9/2/2016 9/		Late Mar'17 Mid May '17 Mid May '17				
	Flat Roll Countervailing Duty Case Timelines							
Product	CTD (CORE)	CR	HR	CTL Plate				
CVD Targeted Countries	China, India, Italy, S.Korea,	Brazil, China, India	Brazil, S.Korea	China and S.Korea				
Start DOC Initiation ITC Prelim DOC Prelim DOC Final	6/3/2015 6/23/2015 7/24/2015 11/2/2015 5/24/2016	7/28/2015 8/17/2015 9/10/2015 12/15/2015 7/21/2016	8/11/2015 8/31/2015 9/25/2015 1/8/2016 8/4/2016	4/8/2016 4/28/2016 5/23/2016 9/7/2016 Late Mar '17				
ITC Final Issuance of Order	5/24/2016 6/24/2016 7/1/2016	9/2/2016 9/2/2016 9/5/2016	9/12/2016 9/12/2016 9/19/2016	Mid May '17 Mid May '17 Mid May '17				

Future steps Est. date The (1) Prelim results for Brazil, S. Africa and Turkey were released on 9/16/2016, as those countries did not respond to the questionnaires. The final decision for those countries from DoC will be on 11/29/16

Note: The Commerce Department initiated the investigation on China's circumvention of the AD/CVD orders on CR and CORE imports thru Vietnam on 11/7/2016

ITC has denied one of U.S. Steel's claims in a Section 337 case aimed at stopping all Chinese Carbon and Ally steel entering the U.S.

# **Trade Cases**



Dumping Margins and Subsidy Rates								
Countries	CTD (CORE)		CR		HR		CTL Plate	
	Final AD Assessments	Final Subsidy Rates	Final AD Assessments	Final Subsidy Rates	Final AD Assessments	Final Subsidy Rates	AD margins alleged(1)	DOC Prelim Subsidy Rates
Austria	NA	NA	NA	NA	NA	NA	41.97%	NA
Australia	NA	NA	NA	NA	29.37%	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	2.41-8.98%	NA
Brazil	NA	NA	14.35-35.43%	11.09-11.31%	33.14-34.28%	11.09-11.30%	74.52%(P)	NA
China	209.97%	39.05-241.07%	265.79%	256.44%	NA	NA	68.27%	210.5%
France	NA	NA	NA	NA	NA	NA	4.26-12.97%	NA
Germany	NA	NA	NA	NA	NA	NA	0.00-6.56%	NA
India	3.05-4.44%	8.0-29.46%	7.60%	10.00%	NA	NA	NA	NA
Italy	12.63-92.12%	De minimis- 38.15%	NA	NA	NA	NA	6.00-130.63%	NA
Japan	NA	NA	71.35%	NA	4.99-7.51%	NA	14.96-48.64%	NA
Netherlands	NA	NA	NA	NA	3.73%	NA	NA	NA
South Korea	8.75-47.8%	De minimis- 1.19%	6.32-34.33%	3.91-58.36%	3.89-9.49%	3.89-57.04%	6.82%	De minimis
South Africa	NA	NA	NA	NA	NA	NA	87.72-94.14%(P)	NA
Taiwan	10.34%	De minimis	NA	NA	NA	NA	3.51-28.00%	NA
Turkey	NA	NA	NA	NA	4.15-6.77%	0.34-6.01%	42.02-50.00%(P)	NA
UK	NA	NA	5.40-25.56%	NA	33.06%	NA	NA	NA

### Global Market Outlook & Raw Materials

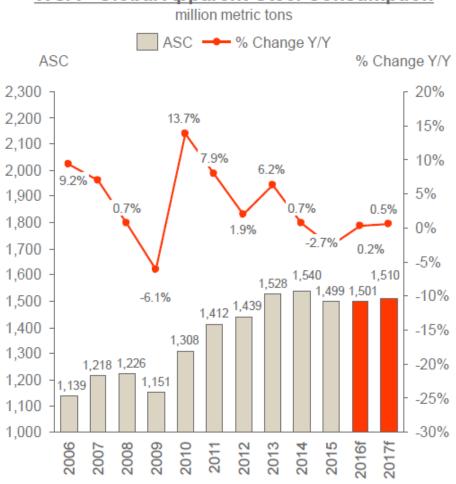




### Global Steel Outlook

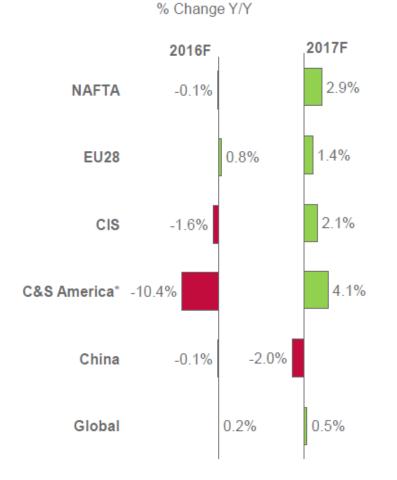






Source: World Steel Association – Short Range Outlook (Oct 2016)

WSA - Global ASC Growth Forecast by Region



<sup>\*</sup> Central and South America

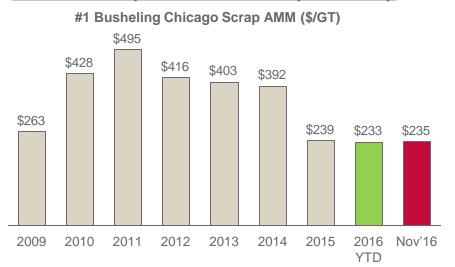
19

# **Steelmaking Raw Material Input Costs**

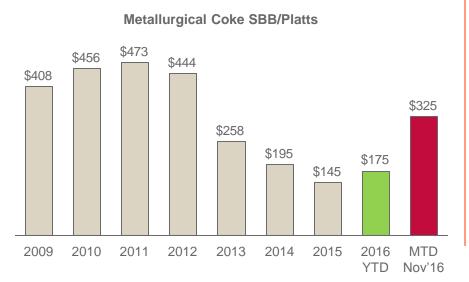


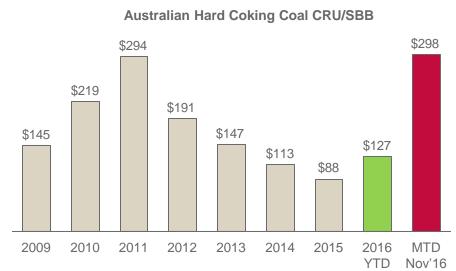
2009-2015 Averages and November 2016

#### All charts in \$ per metric ton except for Scrap









# CO2 regulations

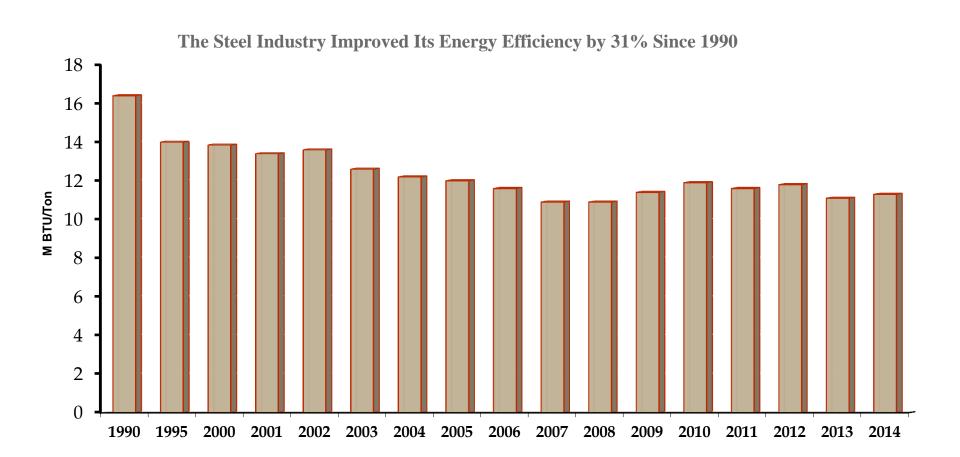




# **Energy Efficiency**



The industry has reduced energy intensity per ton of steel shipped by 31 percent and CO2 emissions by 36 percent per ton of steel produced since 1990.



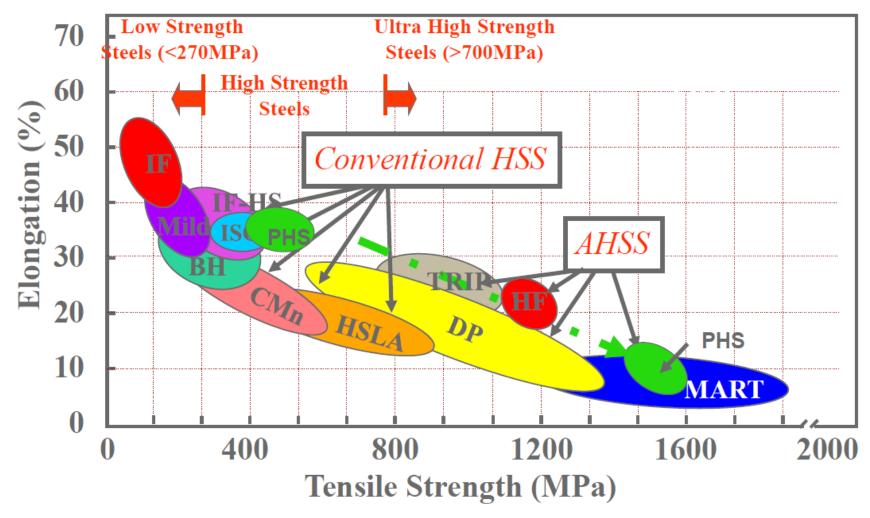


# CAFÉ rules for 2025

- NHTSA CAFÉ rule = 54.5 mpg in 2025
- EPA rule = 163g/m = 54.5 mpg
- NHTSA can only rule out to 2021. Therefore, a mid term review is required in 2017 to get to 2025
- The EPA rule already goes to 2025

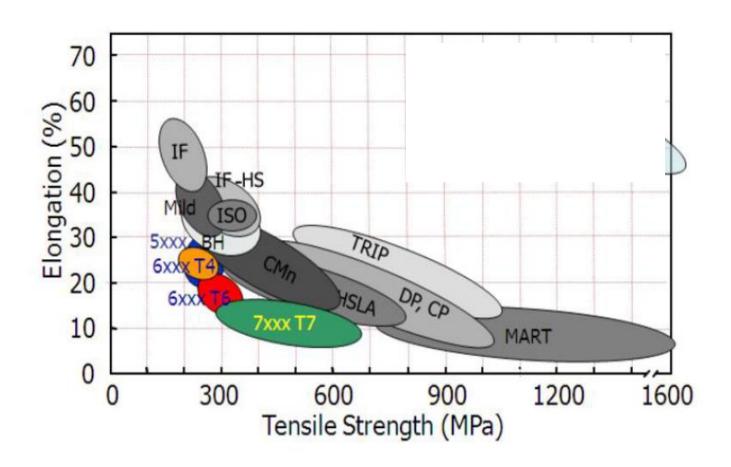
### **Automotive Sheet Steels**







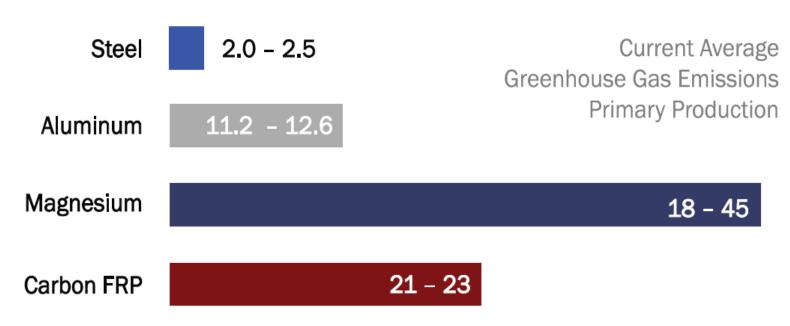
### Properties of Al Alloys Relative to Steel



### CO2 Emissions in Production Phase



### **Greenhouse Gas from Production** (in kg CO<sub>2</sub>e/kg of material)



#### Footnotes:

- · All steel and aluminum grades included in ranges.
- · Difference between AHSS and conventional steels less than 5%.
- Aluminum data global for ingots; European only for process from ingot to final products.



# Questions