

PNC'S METALS INDUSTRY UPDATE

Issue 44

IN THIS ISSUE

Government Funding for the Energy Transition in Metals Is Ramping Up	1
Metals Pricing	4
Pricing for Public Notes and Bonds	5
Syndicated Bank Loan Market	7

Welcome to Issue 44 of PNC's *Metals Industry Update*. For the past several years, it has been next to impossible to have any kind of industry discussion without the topic of sustainability and carbon emissions entering the conversation. To add to that dynamic, we are seeing governments actively participating in the funding of projects designed to reduce carbon emissions.

Our cover story shines a light on some of the actions taken by the Canadian and United States governments to fund metals industry projects. To date, potential fundings will exceed \$3.4 billion with more to come. The rest of our Issue will include our recurring sections on metals pricing, public notes and bonds, and the syndicated bank loan market. Metals prices are doing their part to help tame inflation. The bond market remains quite healthy with three new metals issues coming to market in the quarter. Finally, the Institutional Term Loan B market followed the bond markets lead with over \$3.8 billion in transaction volume.

We hope you continue to extract value from our *Update*. We aspire to provide useful information in a compact format. As always, please feel free to reach out directly with any questions or comments.

FOR MORE INFORMATION

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GOVERNMENT FUNDING FOR THE ENERGY TRANSITION IN METALS IS RAMPING UP

We believe that, over the past decade, carbon emissions reduction has become a lens that is used to evaluate the strategic decision-making of every metals company. What has more recently changed is the willingness of governments to participate in the funding of projects to help accelerate the reduction of carbon emissions. In North America, Canada has a head start.

On November 29, 2021, Algoma announced that the Canada Infrastructure Bank (CIB) would provide up to CDN \$220 million in financing toward the CDN \$700 million project to convert from blast furnace steelmaking to electric arc furnace (EAF) steelmaking. The same press release suggests the CIB seeks to finance up to CDN \$5 billion in green infrastructure projects. On February 15, 2022, ArcelorMittal announced that government support had been secured for a CDN \$1.8 billion investment to convert the Dofasco blast furnace steelmaking to a combined DRI plant and a new EAF capable of producing 2.4 million tons of steel.

GOVERNMENT FUNDING FOR THE ENERGY TRANSITION IN METALS IS RAMPING UP *(Continued)*

The project will be supported by a CDN \$400 million investment from the Canadian government and a CDN \$500 million investment from the government of Ontario. Both projects are estimating annual reductions in greenhouse gas emissions of 3 million tons (6 million tons in total).

With that said, it appears the United States government is ready to play catch-up. On March 25, 2024, the Department of Energy announced awards of up to \$6 billion for 33 projects across 20 states designed to decarbonize energy-intensive industries. The funding will come from the Infrastructure Investment and Jobs Act passed in November 2021 and the Inflation Reduction Act passed in August 2022. Together these projects are expected to reduce carbon emissions by more than 14 million tons per year.

Of the total \$6 billion in awards, \$1.5 billion is targeted toward iron and steel and \$900 million toward copper and aluminum. This report will provide a short summary of each project in these two segments.

IRON & STEEL

Project Name: Hydrogen-Fueled Zero Emissions Steel Making

Award: Up to \$500,000,000

Company: SSAB

Project Summary: SSAB will build a commercial-scale DRI plant in Perry County, Mississippi. The DRI plant will use the HYBRIT technology with 100% hydrogen as the fuel source.

This project will also expand the SSAB Montpelier, Iowa, mill to use the same DRI in that mill's steelmaking facility.

Project Name: Hydrogen-Ready DRI and Electric Melt

Award: Up to \$500,000,000

Company: Cleveland-Cliffs Steel Corporation

Project Summary: Cleveland-Cliffs plans to install in its mill in Middletown, Ohio, a hydrogen-ready flex-fuel DRI plant and two electric melting furnaces. This project will replace the existing Middletown blast furnace.

Project Name: Induction Melting Upgrade

Award: Up to \$75,000,000

Company: AMERICAN Cast Iron Pipe Company

Project Summary: This project will replace the existing cupola furnace with four induction furnaces, eliminating the need for coke and reducing the CO₂ emissions.

Project Name: Iron Electric Induction Conversion

Award: Up to \$75,500,000

Company: United States Pipe and Foundry Company

Project Summary: The project aims to replace a coke-fired furnace with electric induction furnaces.

Project Name: Low-Emissions, Cold-Agglomerated Iron Ore Briquette Production

Award: Up to \$282,900,000

Company: Vale USA

Project Summary: This is a greenfield project to be built on the Gulf Coast. It will use a first-of-its-kind process to produce iron ore briquettes with a cold process, reducing the need for industrial heat.

Project Name: Steel Slab Electrified Induction Reheat Furnace Upgrade

Award: Up to \$75,000,000

Company: Cleveland-Cliffs Steel Corporation

Project Summary: This project will install an induction slab reheat furnace at Cliff's Butler, Pennsylvania, mill to produce high-silicon grain-oriented electrical steel (GOES). This is the U.S.'s only facility that produces this critical material for transformers and the electricity sector.

GOVERNMENT FUNDING FOR THE ENERGY TRANSITION IN METALS IS RAMPING UP *(Continued)*

ALUMINUM AND METALS

Project Name: Advanced Copper Recycling Facility

Award: Up to \$270,000,000

Company: Wieland North America Recycling

Project Summary: This project will create an advanced copper-recycling facility in Shelbyville, Kentucky, capable of recycling a diverse mix of copper scrap and other metals, turning it into high-purity copper suitable to support multiple applications, including electric vehicles and semiconductors.

Project Name: Green Aluminum Smelter

Award: Up to \$500,000,000

Company: Century Aluminum Company

Project Summary: This greenfield project will be built in the Ohio River / Mississippi River Basins. This new primary aluminum smelter will combine a state-of-the-art, energy-efficient design and use of the carbon-free energy.

Project Name: Low Carbon SmartMelt Furnace Conversion

Award: Up to \$75,000,000

Company: Constellium

Project Summary: This project in Ravenswood, West Virginia, proposes to deploy a first-of-a-kind zero-carbon aluminum casting plant. The SmartMelt furnaces can operate using a range of fuels, including clean hydrogen.

Project Name: Nexcast – Next Generation Aluminum Mini Mill

Award: Up to \$22,300,000

Company: Golden Aluminum

Project Summary: This project in Fort Lupton, Colorado, will use the Nexcast process, which casts molten aluminum into sheet without the need for ingots. This process reduces natural gas consumption, improves process efficiency and recycles 15% more mixed-grade aluminum scrap.

Project Name: Zero Waste Advanced Aluminum Recycling

Award: Up to \$67,300,000

Company: Real Alloy Recycling

Project Summary: This project in Wabash, Indiana, plans to construct the first zero-waste salt slag recycling facility in the U.S. This will enable normally landfilled salt slag components to be recycled back into the aluminum recycling process or used in other industries such as cement.

OUR OBSERVATIONS AND TAKEAWAYS

- 1 These awards remain subject to negotiation of all the terms and conditions. The timing of the Biden administration release prior to negotiating the final terms does feel politically motivated.
- 2 The Nippon Steel / U. S. Steel agreement has become a lightning rod for the acquisition of U.S. companies by foreign entities. Interestingly, 67% of the dollars awarded in Iron & Steel and Aluminum & Metals segments ultimately benefit ownership interests outside of the U.S.
- 3 The Infrastructure Investment and Jobs Act and the Inflation Reduction Act encourage providing awards to businesses with workforces represented by labor unions — 51% of the dollars awarded in these two segments are to companies with union workforces.
- 4 This \$6 billion represents just the first round of awards available through the Infrastructure Investment and Jobs Act and the Inflation Reduction Act to support green projects. Companies with strategies to invest in technology to reduce their greenhouse gas emissions should consider consulting their legal and financial advisors and planning to meet with the Department of Energy.
- 5 If you wish to see more details on the awards for other industry segments, you can Google Biden-Harris Administration DOE Awards.

METALS PRICING

During the first quarter of 2024, metals prices did their best to help reduce the rate of inflation. Of the 22 prices we follow, 14 decreased, 4 remained flat, and only 4 increased. The increases were the LME commodities of copper, nickel and aluminum, and the Midwest transaction price for aluminum. Of those metals prices that declined, HRC lead the way down \$350 per ton, or 32%. The two scrap products we follow, HMS and Shred, were down 14% and 11%, respectively. The other carbon long products we follow declined at low single-digit rates.

Our Observations

- CRC and GALV spreads finished the quarter at unusually high levels of \$290 and \$420, respectively.
- Aluminum pricing feels like it is firming and ready to move higher. This will certainly be supported by recently announced prohibitions on Russian-origin aluminum by the U.S. and the UK.
- Specialty plate prices continue to resist the influence of carbon sheet.
- Steelmaking raw materials declined during the quarter, allowing producers' metal spreads to decline at a lower rate than overall selling prices.

See the complete list of monthly metal price during the quarter below.

Carbon Flat-Rolled Steel \$/NT January–March 2024			
Product	January	February	March
Hot-Rolled	1,070	870	720
Cold-Rolled	1,260	1,150	1,110
Galvanized	1,340	1,230	1,140

Discrete Plate \$/NT January–March 2024			
Product	January	February	March
A36	1,320	1,260	1,170
A514	2,345	2,345	2,345
AR400	2,365	2,365	2,365

Wide Flange Beam \$/cwt. January–March 2024			
Size	January	February	March
24"x12¾"	68.00	68.00	67.00
18"x6"	64.75	64.75	63.75

MBQ \$/cwt. January–March 2024			
Shape	January	February	March
1" 1018 round	57.70	57.70	56.70

Rebar \$/cwt. – Grade 60 January–March 2024			
Size	January	February	March
16 mm - #5	43.50	42.50	41.50

SBQ \$/cwt. – 1" round January–March 2024			
Grade	January	February	March
HR 4140 Q&T	107.40	106.50	105.70

Pipe & Tube \$/NT January–March 2024			
Product	January	February	March
OCTG J55	1,350	1,350	1,350
Linepipe, ERW	1,200	1,200	1,200

Aluminum \$/lb January–March 2024			
Alloy	January	February	March
3003	2.03	2.03	2.02
LME	0.99	0.99	1.01
MWTP	1.18	1.17	1.19

Stainless \$/lb – Cold-Rolled Coil January–March 2024			
Grade	January	February	March
304	1.66	1.63	1.62

Copper \$/lb January–March 2024			
	January	February	March
Comex Avg.	3.81	3.80	3.98

Nickel \$/lb January–March 2024			
	January	February	March
LME Avg.	7.30	7.39	7.90

Ferrous Scrap \$/GT Midwest January–March 2024			
Grade	January	February	March
No. 1 HMS	380	370	325
Shredded	465	460	410

Iron Ore \$/LT U.S. January–March 2024			
Grade	January	February	March
Furnace Pellets	105	110	100

Met Coal \$/MT U.S. East Coast January–March 2024			
Grade	January	February	March
Low-vol	222	213	193

PRICING FOR PUBLIC NOTES AND BONDS

METALS BOND UPDATE: ATTRACTIVE SPREADS DRIVE BUSY PRIMARY MARKET DESPITE STICKY INFLATION DATA

Fueled by growing anticipation for near-term rate cuts following what many believed to be the Fed's official "pivot" at the December FOMC meeting, the bond market was off to the races in January. Investment Grade supply beat January 2017's \$172.9 billion new issuance record, hitting \$194.6 billion during the month, while High Yield volume of \$31.1 billion was the largest monthly tally since November 2021. However, higher-than-anticipated inflation reports throughout the quarter gave way to an increasingly hawkish outlook from Fed officials, leading investors to temper 2024 rate cut expectations from six to start the year to less than two in early April. While strong U.S. GDP growth, labor data and corporate earnings generally drove a risk-on sentiment throughout the quarter, the 10-year U.S. Treasury yield increased 27 basis points from 3.93% in early January to 4.20% by the end of March, before jumping another 30 basis points to 4.49% by April 10. The average yield of the Investment Grade index increased 31 basis points (from 5.15% to 5.46%), while the average yield of the High Yield index increased 18 basis points (from 7.69% to 7.87%).

Investment Grade issuers combined to price \$539.6 billion in 1Q24, the largest first quarter on record and 33% greater than 1Q23 (\$405.1 billion). The average Investment Grade new-issue concession and order book subscription level finished at 3 basis points and 3.75x. During the quarter, A-rated and BBB-rated credit spreads tightened 12 basis points and 16 basis points, respectively. Looking specifically at the PNC IG Metals Bond Index, yields widened 0.51% and spreads tightened 7 basis points in 1Q24. There was no primary market activity from IG metals issuers.

High-yield volume of \$84.2 billion in 1Q24 was up 117% compared to the \$38.8 billion that priced in 1Q23. During the quarter, BB-rated spreads tightened 18 basis points and B-rated spreads tightened 36 basis points on average. Compared to the previous quarter, the average spread of companies in the PNC HY Metals Bond Index tightened 42 basis points, while yields widened by 0.31%. Notably, three HY metals issuers priced transactions in March — Cleveland Cliffs priced \$825 million 8NC3 7.000% Unsecured Notes, Alcoa Nederland Holding BV priced \$750 million 7NC3 7.125% Green Unsecured Notes, and Algoma Steel Inc priced \$350 million 5NC2 9.125% Secured Notes.

METALS BOND INDEX

As of Date	PNC IG Metals Bond Index			PNC HY Metals Bond Index		
	4/10/2024	1/12/2024	Change	4/10/2024	1/12/2024	Change
Effective Maturity (Years)	8.19	8.70	-0.52	5.52	5.47	0.05
Composite Rating	BBB+	BBB+	-	BB-	BB-	-
Weighted Average Coupon	4.28%	4.15%	0.12%	5.84%	5.66%	0.18%
Yield to Worst	5.57%	5.06%	0.51%	7.02%	6.63%	0.31%
Option Adjusted Spread to Treasuries (bps)	85.3	93.9	-8.6	216.2	245.5	-29.3

Note: PNC IG Metals Bond Index excludes bonds of size < \$250 million.

Source: Bloomberg

SYNDICATED BANK LOAN MARKET

The first quarter got off to a solid start with 10 deals totaling \$7.3 billion. New money was less than 10% of the total: \$510 million in acquisition financing to support Monomoy Capital Partners' acquisition of Waupaca Foundry and \$60 million for Perryman, which exercised the accordion in its existing facility. This quarter's volume includes five Institutional Term Loan Bs as conditions in this market improved for metals issuers, including \$360 million for Waupaca, \$1.4 billion for Arconic (reduced pricing by 75 basis points), \$900 million for Zekelman, \$980 million for AZZ (reduced pricing by 50 basis points) and \$446 million for TMS International (reduced pricing by 50 basis points). Finally, Alcoa amended \$1.45 billion in existing credit agreements to provide for added flexibility to implement portfolio actions planned for 2024.

The following provides details for some of the more notable transactions during the quarter.

(\$ in millions)	Lerman Holding Co. Inc.	AZZ, Inc.	Zekelman Industries, Inc.	Waupaca Foundry, Inc.
Date	March 2024	March 2024	March 2024	January 2024 (Amend. March 2024)
Deal Size (\$ in MM)	\$640.0 / \$50.0	\$980.0	\$900.0	\$150.0 / \$360.0
Facility Type	ABL Revolver / TLA	TLB	TLB	ABL Revolver / TLB
Tenor	5 years / 2 years	7 years	7 years	5 years / 6 years
Purpose	Corporate Purposes	Corporate Purposes	Corporate Purposes	Acquisition
Ratings				
S&P	NR	B+	BB+	NR
Moody's	NR	Ba3	Ba2	NR
Amortization	-	1.0% per annum	1.0% per annum	5.0% per annum
Pricing at close (bps)				
All-in Spread	160.0	325.0 ¹	225.0 ²	200.0 / 600.0
SOFR Margin	150.0	-	-	-
Facility Fee	-	-	-	-
Commitment Fee	-	-	-	25.0
Sustainability Adjustment	-	-	-	-
Pricing Detail (bps)				
	<i>Not disclosed</i>	<i>Flat pricing (see above)</i>	<i>Flat pricing (see above)</i>	<i>Not disclosed</i>
SOFR Adjustment (bps) (1-mo / 3-mo / 6-mo)	10.0 / 10.0 / 10.0	None	<i>Not disclosed</i>	<i>Not disclosed</i>
Rate Floor	-	0.50%	0.00%	0.00% / 1.00%
OID	-	100.0	99.75	99.0
Call Protection	-	101 Soft Call 6 mo.	101 Soft Call 6 mo.	101 Soft Call 6 mo.
Financial Covenants				
Fixed Charge Coverage Ratio				
Interest Coverage Ratio				
Total Leverage Ratio	<i>Not disclosed</i>	<i>Not disclosed</i>	<i>Not disclosed</i>	<i>Not disclosed</i>
Net Leverage Ratio				
Funded Debt Ratio				
Debt to Capital Ratio				
Secured	Yes	Yes	Yes	Yes

¹ Repriced from 375.0 bps

² No repricing change

Sources: S&P Capital IQ, Moody's, Refinitiv Loan Connector

SYNDICATED BANK LOAN MARKET *(Continued)*

<i>(\$ in millions)</i>	Arconic Corporation	Perryman Company	TMS International
Date	February 2024	March 2023 (Amend. February 2024)	January 2024
Deal Size (\$ in MM)	\$1,421.0	\$335.0	\$175.0 / \$446.6
Facility Type	TLB	CF Revolver	ABL Revolver / TLB
Tenor	7 years	5 years	2 years / 7 years
Purpose	Corporate Purposes	Accordian Exercise	Corporate Purposes
Ratings			
S&P	B+ ¹	NR	B+
Moody's	B1 ¹	NR	B2
Amortization	1.0% per annum	-	1.0% per annum
Pricing at close (bps)			
All-in Spread	375.0 ²	150.0	175.0 / 425.0 ³
SOFR Margin	-	-	-
Facility Fee	-	-	-
Commitment Fee	-	-	25.0
Sustainability Adjustment	-	-	-
Pricing Detail (bps)			
	<i>Flat pricing (see above)</i>	<i>Not disclosed</i>	<i>Not disclosed</i>
SOFR Adjustment (bps) (1-mo / 3-mo / 6-mo)	<i>Not disclosed</i>	<i>Not disclosed</i>	<i>Not disclosed</i>
Rate Floor	0.00%	-	0.50%
OID	100.0	-	100.0
Call Protection	101 Soft Call 6 mo.	-	101 Soft Call 6 mo.
Financial Covenants			
Fixed Charge Coverage Ratio			
Interest Coverage Ratio			
Total Leverage Ratio	<i>Not disclosed</i>	<i>Not disclosed</i>	<i>Not disclosed</i>
Net Leverage Ratio			
Funded Debt Ratio			
Debt to Capital Ratio			
Secured	Yes	No	Yes

¹ Issuer Ratings for Arsenal AIC Parent LLC, the Borrower

² Repriced from 450.0 bps

³ Repriced from 475.0 bps with 0.50% floor and OID of 97.0

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