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Metal recycling – a continuous evolution

by MAURA KELLER

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In the last few years, the metals recycling market has undergone significant growth as the demand for both recycled ferrous and nonferrous metals continues to rise.

Isaac Dietrich, is the founder and chief financial officer of the metal recycling company, Greenwave Technology Solutions, a leading operator of metal recycling facilities that collect, classify and process raw scrap metal, both ferrous and nonferrous, for recycling.

“At Greenwave, we continue to see robust demand for our ferrous and nonferrous products. We recently invested \$15 million installing a second automotive shredder along with a downstream processing system, which is expected to double our current ferrous metal processing capacity and significantly increase our recovery yields of nonferrous metals,” Dietrich said. They are also investing in the infrastructure needed to meet the significant demand from customers for mill-ready shred and other products.

Dietrich pointed out that while ferrous prices have come down considerably from 2022 levels, they are continuing to process near record volumes of scrap metal.

Fastmarkets, a cross-commodity price reporting agency, recently reported that “a resurgence in deep-sea ferrous scrap exports in August and the gradual abatement of the summer doldrums, along with tight supply, are giving rise to growing bullish sentiment for the subsequent U.S. ferrous trade.”

And just over half of those surveyed by Fastmarkets – 52.83 percent – expect prices to rise month on month in the upcoming trade, with a majority – 35.85 percent – attributing this potential increase to lower scrap supply. “Among respondents, 30.19 percent believed that scrap would trade sideways in September,” Fastmarkets noted.

According to George Lucas, chief executive officer, Accurate Converter, which focuses on the precious metal market with concentrations on platinum, palladium, rhodium and iridium, currently the precious metals market is in flux between recent historical highs and current short term lows.

Lucas pointed out that since the largest users of palladium and rhodium are global auto manufacturers, the uncertainty around new technologies like hybrids, full EV and hydrogen fuel cell has the purchasing of these commodities on a short leash.

“Most auto manufacturers are coming to the realization that the lofty, and in most cases unrealistic, goals set by politicians to adapt to the new ‘green economy’ are not attainable either from the



Scrap metal recyclers continue to invest in equipment to expand processing capacities.

standpoint of raw materials needed to make batteries and other components or from the infrastructure perspective,” Lucas said. “If 30 to 40 percent of vehicles in the U.S. were quickly converted to EV, the electrical grid would collapse. We, in the recycling industry, see prices of platinum, palladium, and rhodium stabilizing short term, but steadily increasing gradually and in a controlled manner. Copper, steel and aluminum should also see more stabilization going forward.”

Facing Challenges

As metal prices have come down from historical highs, many of the companies and businesses that generate spent auto catalysts, for example, have tended to hold on to their material hoping prices rebound. As Lucas explained, since the value of a used catalytic converter is directly affected by the precious metals contained in each one, a drop in price – as his team at Accurate Converts has seen over the last six months – has significant effects on prices.

“An average converter at the end of 2022 and beginning of 2023 was in the \$200 to \$300 range – the average is now \$100 or less. For a business, like an automotive salvage yard that processes scrap cars from end-of-life or accidents, the converter is a large portion of what they recoup from that vehicle,” Lucas said.

“Long term, we’re focused on meeting the growing demands of our clients for certain products utilized in the electric vehicle and infrastructure supply chains,” Dietrich said. “I think too many people in our industry are focused on the short-term outlook for steel or other metal prices. While important, we believe it’s vital to step back and analyze where our industry will be in the next 3, 5 and 10 years – which products will be utilized in electric vehicles, ‘green steel,’ and in certain supply chains.

Between the Inflation Reduction Act, CHIPS Act, and U.S. Infrastructure and Jobs Act, Dietrich expects to see a demand surge for domestic steel in the coming quarters.

“With the significant supply/demand imbalance expected to continue for the foreseeable future, Greenwave has recently invested more than \$15 million in capex to double our ferrous metal processing capacity, Dietrich said.

The Global Steel Climate Council (GSCC) recently released its Steel Climate Standard, which is used to measure and report steel carbon emissions. It stated that recycling is a means to enable the decarbonization of steel production. The standard could be used by steel producers to further establish sustainable supply chains.

In response to the GSCC Steel Climate Standard, ISRI president Robin Wiener stated, “The GSCC Steel Climate Standard is the right approach to leveling the playing field among steel producers, while also recognizing the key role that recycled steel plays to meet decarbonization goals in the decades ahead. The use of recycled products is key to decarbonizing steel production and manufacturing supply chains around the globe. The recycled materials industry provides high-quality, low-carbon steel to the global supply chain.”

Looking ahead, according to Transparency Market Research, the global scrap metal recycling market is estimated to grow at a CAGR of 6.1 percent from 2023 to 2031, and sales of recycled scrap metal are slated to total \$78.1 billion by the end of 2031. Advancements in technology are to thank for the increase in recycled metals as a proliferation of technology takes hold of the scrap metal industry including artificial intelligence (AI), machine learning and the Internet

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Meridian Waste breaks ground on materials recovery facility

Meridian Waste North Carolina, LLC, an integrated, non-hazardous solid waste services company, hosted a ground-breaking in September for its Shotwell Environmental Park's state-of-the-art materials recovery facility, a first of its kind in the greater Triangle marketplace. The materials recovery facility (MRF) is permitted by both Wake County and the NC Department of Environmental Quality (DEQ) to sort and remove for resale or reuse economically viable materials from construction and demolition (C&D) debris. The benefits of the MRF are numerous, including saving valuable

airspace in the existing C&D landfill, preserving natural resources by utilizing materials that would otherwise be disposed of within the landfill, providing the building community greater options for LEED-building certification, and helping the County and the State achieve sustainability goals.

The construction of the site is expected to take less than one year with operations beginning in mid-2024. The recycling facility is being built to allow for expansion of equipment and staff as recycling demand increases.



Shotwell Environmental Park guests at the groundbreaking for the new C&D debris MRF. Pictured from left to right: Roger Hendrick, Hendrick Construction; Bianca Howard, Wake County Solid Waste; Cooper Sharp, Shotwell Environmental Park; Emily Lucas, Wake County Deputy County Manager; Don Mial, Wake County Commissioner District 1; Dave Lavender, Meridian Waste Acquisitions; Patrick Messinger, Meridian Waste North Carolina, and Rufus Edmisten, former North Carolina Attorney General and Secretary of State.

Metal Recycling ■Continued from Page A1

of Things (IoT) as part of the scrap metal recycling process. As Transparency Market Research pointed out, these technologies are expected to increase efficiency, accuracy, and cost-effectiveness, thereby enhancing overall recycling operations.

Streamlined efficiencies aside, the ferrous and nonferrous scrap industries continue to face their own set of challenges, including the war in Ukraine, which continues to affect pricing, and a complicated international scenario with the demand for scrap metal continually in flux.

"There are many challenges we face today, but the largest by far in our industry has been the combating of converter theft across the country. Many of the larger criminal elements have been eliminated and with the price drops and values of converters versus last year, theft overall is down," Lucas said. "We, along with

many companies in the industry have banded together to create steps to deter and eliminate theft going forward. From detailed compliance processes that vet potential customers, significant record keeping of each and every transaction and working closely with law enforcement, we've put a huge dent in the criminal element and will continue to do so."

Lucas added that the outlook for palladium and rhodium, for example, will directly be affected by the speed at which new technology takes hold since those two metals rely almost exclusively on automotive catalyst uses. "Platinum, on the other hand, is being used in much of the new technology like hydrogen fuel cells," Lucas said. "As hydrogen becomes more main stream and technology is updated both for the production of hydrogen and the use of it in fuel cell technology, platinum could be the one metal to stand out going forward."

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U.S. EPA invests \$100 million in recycling infrastructure projects

The U.S. Environmental Protection Agency (EPA) announced more than \$100 million to expand recycling infrastructure and waste management systems across the country, representing EPA's largest recycling investment in 30 years.

EPA has selected 25 communities to receive grants totaling more than \$73 million under the newly created Solid Waste Infrastructure for Recycling funding opportunity. In addition, the agency is making available approximately \$32 million for states and territories to improve solid waste management planning, data collection and implementation of plans.

The grants support the implementation of EPA's National Recycling Strategy to build an economy devoted to keeping materials, products, and services in circulation for as long as possible – what's known as a "circular economy."

EPA's Solid Waste Infrastructure for Recycling Grant Program is also advancing the Justice40 Initiative, which aims to ensure that 40 percent of the overall benefits of certain federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution. Approximately \$56 million out of the \$73 million – or 76 percent – of the total funding for communities will go toward projects that benefit disadvantaged communities.

Solid Waste Infrastructure for Recycling Grants for Communities

The recycling grants for communities will support improvements to waste management systems across the country and will range from \$500,000 to \$4 million per grant. Selected projects include purchasing new fleets of



Twenty-five communities have been selected by the EPA to receive grants under the new Solid Waste Infrastructure for Recycling funding opportunity. Photo courtesy of EPA

recycling collection vehicles and bins to provide curbside recycling services for communities currently lacking access; upgrades to material recovery facilities to reduce contamination; enhancements to composting and organics programs and infrastructure; and construction of various types of facilities that improve recycling, composting, and reuse infrastructure for materials such as plastics and food waste.

Solid Waste Infrastructure for Recycling Grants for States and Territories

The recycling grants for states and territories will provide funding to all 56 states, territories and the District

of Columbia via grants ranging from \$360,000 to \$750,000; with the highest grant amounts supporting those states and territories that need it the most. These grants represent important steps toward achieving the EPA's National Recycling Goal and Food Loss and Waste Reduction Goal. Funded activities include improving post-consumer materials management programs through developing or updating solid waste management plans and strengthening data collection efforts.

Additional Background

In the coming months, EPA will announce the selected recipients of the recycling grants for Tribes and intertribal

consortia, as well as the recipients of EPA's new Recycling Education and Outreach grant program.

The Bipartisan Infrastructure Law provides \$275 million total from fiscal year 2022 to fiscal year 2026 for grants authorized under the Save Our Seas 2.0 Act – the largest investment in recycling in 30 years. The recycling grants are supplemented with additional funding provided through EPA's annual appropriations. EPA has selected these entities to receive funding for recycling infrastructure projects and anticipates making all the awards announced once all legal and administrative requirements are satisfied.

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Beverage container redemption rates for 2022 are static compared to 2023

Beverage container redemption rates for 2022 in seven of the nine U.S. bottle bill states either dropped or remained within +/- one percent compared to 2021, according to data released by the Container Recycling Institute (CRI). Oregon and Maine are the only states that saw a noticeable increase in 2022.

Of the 10 deposit states, all but Iowa have currently available data.

Deposit State:

•Michigan, California, New York, Massachusetts, Connecticut – no change or +/-1 percent

- Vermont – decrease of 6 percent
- Hawaii – decrease of 4 percent
- Oregon – increase of 5 percent
- Maine – increase of 3 percent

CRI president Susan Collins said, “Stagnant or dropping redemption rates point to the need for program modernizations – such as higher container deposit amounts, coverage of more beverage types, and additional convenient options for consumers to return bottles and cans. Several bottle bill states still do not include deposits on noncarbonated drinks, including bottled water – sales of which have skyrocketed since the deposit return systems were implemented in the 1970s and ‘80s.”

She also noted that program modernizations passed in California and Connecticut should lead to increases in the volume of bottles and cans redeemed as the new provisions take effect. However, changes in the actual redemption rates – number of containers redeemed as a percentage of number on deposit sold – can lag given the time needed for more consumers to learn about these changes and adjust their behavior to return newly eligible bottles and cans for the deposit refund.

California:

- SB 1013: Adding deposits to wine and distilled spirits (\$.05 for containers less than 24 oz. and \$.10 for those 24 oz. or larger) effective January 1, 2024. A CRI analysis indicates this will result in the recycling of more than half a billion additional bottles and cans annually, or more than 300,000 tons of material that had previously been destined for the landfill.
- AB 179 (budget bill): Providing nearly \$400 million in new spending for the bottle bill program, including (among other items) startup funds for recycling and processing centers, and extra funding for bag drops, mobile recycling and reverse vending machines (RVMs).

In addition, the California State Senate has passed a bill (SB 353) to add 100 percent fruit juices and vegetable juices to beverages on deposit. If it is held over until 2024 (the second year of the state’s current two-year legislative cycle), it still must go through several steps in the legislative approval process. According to CRI’s analysis, passage of this bill would place a deposit on an estimated 188 million new containers, in addition to the 18.4 billion existing containers covered.



Connecticut:

- (SB 1037 for all items) Added deposits to noncarbonated beverages, hard cider and malt-based hard cider effective January 1, 2023, for a 13 percent increase in overall beverage unit coverage.
- Provided a handling fee increase for retailers and redemption centers, which generated enough revenue to encourage the opening of new centers, plus funding for retailers to install RVMs. The RVM mandate at certain chain stores resulted in more than 300 new redemption locations in the state.
- Increasing the deposit amount on eligible containers from \$.05 to \$.10 effective January 1, 2024. In 1980, when Connecticut’s bottle bill took effect, a nickel was worth what about \$.20 is today. A nickel is clearly no longer an adequate incentive for container returns. When Oregon increased its deposit from \$.05 to \$.10 cents, the redemption rate climbed 22 percent in just 3 years.

Significant bottle bill reforms also are occurring in Maine. The 2023 passage of LD 134 increased the handling fee for redemption centers to keep them financially viable. Another new law, LD 1909, will streamline the container sorting process for redemption centers; establish a “commingling cooperative” of beverage manufacturers to coordinate the pickup of and payment for redeemed bottles and cans; and redirect unredeemed deposits from beverage companies to a fund used for program improvements.

In addition, in two other bottle bill states – Vermont and Massachusetts – passage of deposit return program modernization legislation remains a possibility.

In Vermont – where the redemption rate dropped 6 percent from 2021 to 2022 – both the State House of Representatives and State Senate passed legislation (H.158) earlier this year that would expand deposit coverage to most beverage types (at \$.05), as well as wine at 15 cents. It also would require more redemption centers to serve consumers. Although Gov. Phil Scott vetoed the bill,

the General Assembly has the opportunity to override the veto when it reconvenes in January.

Massachusetts continues to sit last among bottle bill states with an extremely low redemption rate of 38 percent, with one reason being that only 40 percent of beverage types currently are on deposit. A bill (H.3690) introduced for the 2023-2024 legislative cycle would expand the bottle bill to include more types of beverage containers and increase the deposit from \$.05 to \$.10. CRI estimates that these upgrades would result in the recycling of more than 3 billion additional bottles and cans annually over and above what is now recycled.

Collins noted it’s important to remember that Massachusetts’ current disappointing redemption rate is still higher than the U.S. nominal recycling rate of 24 percent for beverage containers not on deposit, adding that even outdated deposit return systems perform better than non-deposit ones.

U.S. Comparisons to International Deposit Return Systems

Outside of the U.S., the adoption of beverage container deposit return systems (DRS) continues to grow at a skyrocketing pace, as more and more governments recognize these programs’ value in dramatically increasing recycling rates, thus helping to address the global plastic pollution and climate crises.

At the end of 2022, approximately 444 million people in 44 jurisdictions across the globe were covered by a DRS. With the expected implementation of already-announced laws, and the potential approval of a packaging regulation covering the entire EU, that number could increase to just over 1 billion by decade’s end.

Collins said that most non-U.S. jurisdictions operate programs with higher deposit amounts and more beverage container coverage than U.S. states, adding that these governments do not wait for redemption rates to drop below 60 percent before upgrading their programs. In the U.S., of the bottle bill states with available data, four have rates at or below the 60 percent threshold.

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WASTE

Meridian Waste expands North Carolina collections and disposal footprint

Meridian Waste North Carolina, LLC, an integrated, non-hazardous solid waste services company, announced the acquisition of two related companies located in Liberty, North Carolina with Coble's Sandrock, Inc. a permitted construction and demolition debris (C&D) landfill along with the assets of Coble's Container Service, LLC, a roll off collection company. Meridian Waste has negotiated a new landfill franchise agreement with Alamance County offering environmental and financial benefits for the County while expanding the geographic acceptance area of the landfill to twenty-six North Carolina counties. The closing was effective September 1.

The addition of the newly renamed Tri-Corners Landfill (previously Coble's Sandrock landfill) to Meridian Waste's North Carolina operations portfolio

increases disposal capacity in the greater Piedmont Triad region to help manage the growing population and construction growth throughout the cities and counties in the region, specifically the fast-growing Triad Counties of Alamance, Davie, and Franklin, and the cities of Winston-Salem, Greensboro, and High Point.

"The inclusion of Tri-Corners Landfill and our newest hauling customers within Meridian Waste operations extends further growth north from the Raleigh marketplace following the development expansion in North Carolina," said Patrick Messenger, Meridian Waste's area president, North Carolina. "Our collection and disposal operations are vital to the successful and responsible management of the building industry, and we welcome our newest customers and partners to Meridian Waste."



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METALS

Sims Metal acquires Baltimore Scrap Corp

Sims Metal has agreed to acquire the assets of U.S.-based metal recycler, Baltimore Scrap Corp (BSC) and its affiliated entities. The acquisition is anticipated to close in October 2023 subject to the satisfaction, or waiver, of customary closing conditions, including required regulatory approvals.

"The BSC acquisition is another example of our capital recycling strategy. We anticipate the acquisition to be substantially funded through the redeployment of proceeds from non-core asset sales and other assets that are not likely to achieve their required rate of return."

BSC is one of the largest metal recyclers in the American Northeast with 17 facilities across 5 states – Maryland, Virginia, Pennsylvania, New York, and New Jersey – with sales volumes of approximately 600,000 tonnes per annum. BSC's operations include four shredders and extensive rail, barge and port infrastructure, and the business is well-positioned with attractive proximity to both growing domestic demand markets and export.

Total consideration for the acquisition is \$177 million, plus working capital and other adjustments to be determined at closing.

Steel imports down 15.2 percent

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the U.S. imported a total of 2,370,000 net tons (NT) of steel in July 2023, including 1,832,000 net tons (NT) of finished steel (down 15.2 percent and 8.1 percent, respectively, vs. June 2023). Total and finished steel imports are down 10.7 percent and 15.5 percent, respectively, year-to-date vs. 2022. Over the 12-month period August 2022 to July 2023, total and finished steel imports are down 13.7 percent and 14.0 percent, respectively, vs. the prior 12-month period.

Finished steel import market share was an estimated 21 percent in July and is estimated at 22 percent over the first 7 months of 2023.

Key steel products with a significant import increase in July compared to June are tin plate (up 26 percent), mechanical tubing (up 21 percent), heavy structural

shapes (17 percent) and oil country goods (up 14 percent). Products with a significant increase in imports over the 12-month period August 2022 to July 2023 compared to the previous 12-month period include line pipe (up 28 percent), oil country goods (up 24 percent) and cut lengths plates (up 10 percent).

In July, the largest suppliers were Canada (531,000 NT, down 16 percent vs. June), Brazil (384,000 NT, down 8 percent), Mexico (291,000 NT, down 30 percent), South Korea (158,000 NT, down 58 percent) and Japan (122,000 NT, up 50 percent). Over the 12-month period August 2022 to July 2023, the largest suppliers were Canada (6,909,000 NT, down 1 percent compared to the previous 12-months), Mexico (4,503,000 NT, down 21 percent), Brazil (3,222,000 NT, up 3 percent), South Korea (2,530,000 NT, down 12 percent) and Japan (1,227,000 NT, down 1 percent).

U.S. Imports of Steel Mill Products by Country of Origin (thousands of net tons)

COUNTRY	JULY 2023 PRELIM	JUNE 2023 FINAL	% VAR. JULY VS. JUNE	YTD 2023 (7 MON.)	YTD 2022 (7 MON.)	% VAR. 2023 VS. 2022	AUG. 2022 TO JULY 2023	AUG. 2021 TO JULY 2022	% VAR.
Canada	531	628	-15.5%	4,172	4,122	1.2%	6,909	7,010	-1.4%
Mexico	291	417	-30.3%	2,615	3,414	-23.4%	4,503	5,692	-20.9%
Brazil	384	420	-8.4%	2,462	1,808	36.2%	3,222	3,144	2.5%
South Korea	158	378	-58.2%	1,474	1,760	-16.3%	2,530	2,886	-12.3%
Japan	122	82	49.6%	729	762	-4.4%	1,227	1,234	-0.6%
Germany	104	54	93.4%	635	648	-2.0%	1,113	1,197	-7.0%
Taiwan	36	30	22.7%	393	672	-41.5%	759	1,124	-32.5%
China	29	113	-74.8%	416	372	11.8%	695	622	11.7%
Vietnam	51	43	19.5%	305	660	-53.8%	582	1,262	-53.9%
Italy	65	17	282.1%	325	218	48.6%	558	310	80.2%
Turkey	14	43	-66.1%	217	660	-67.1%	557	1,191	-53.2%
Netherlands	50	34	49.8%	279	326	-14.6%	547	624	-12.4%
Romania	39	38	2.0%	263	265	-0.7%	481	402	19.7%
India	13	58	-76.8%	236	451	-47.6%	470	705	-33.3%
Algeria	30	104	-71.4%	355	414	-14.1%	451	623	-27.7%
All Other	452	338	33.8%	2,503	2,916	-14.2%	4,154	5,282	-21.4%
Total	2,370	2,794	-15.2%	17,377	19,468	-10.7%	28,758	33,307	-13.7%
memo EU-27	433	244	77.4%	2,517	2,451	2.7%	4,476	4,093	9.3%



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METALS

Spectro Alloys plans \$71 million recycling expansion at Minnesota facility

Spectro Alloys announced a \$71 million expansion to add new aluminum recycling equipment to its Rosemount, Minnesota campus. The investment will allow the aluminum recycler to expand its capabilities to sort and melt post-consumer scrap aluminum and cast it into various sheet and billet alloys. This expansion is in response to the need for improved recycling rates in Minnesota, and a growing market for recycled aluminum sheet and extrusion driven by consumer demand for sustainable products, green building standards, a stable domestic supply chain and cost savings associated with recycled material. Spectro Alloys will break ground on the project in 2024 and be operational in 2025.

To produce recycled billet and sheet ingot, Spectro Alloys is expanding its

Rosemount campus to approximately 42 acres and will build a new 90,000 sq.ft. building along Highway 55. The first phase of the project will result in up to 120 million pounds per year of additional recycling capacity and create up to 50 new full time jobs. Spectro Alloys is celebrating its 50th anniversary this year.

Aluminum billet is used as raw material for extruders, who turn it into products like railings, window and door trim, and structural components for cars, boats, airplanes, trailers, docks, and more. Spectro will also recycle used beverage containers and other end of life aluminum products to produce sheet ingot – high purity slabs of aluminum weighing up to 60,000 pounds each – a feedstock for rolling mills.

In Minnesota, only 45 percent of

aluminum beverage containers are currently being recycled, according to the Minnesota Pollution Control Agency. Spectro's investment will promote more recycling by unlocking greater value through reuse while providing large, direct, environmental benefits. Spectro's recycling process uses 95 percent less energy and releases 95 percent less CO2 than new aluminum production. With this expansion, aluminum recycling at Spectro Alloys will save enough energy to power every home in Minneapolis and St. Paul combined.

The facility will include industry-leading automation and state-of-the-art equipment for sorting, melting, casting and homogenizing aluminum scrap, and the best available technology for pollution control.

Sennebogen opens new steel plant in Hungary

With the official opening of the new steel plant of Termelés-Logistic-Centrum GmbH in Litér (Hungary), material handling equipment and cranes manufacturer, Sennebogen, is continuing its growth strategy while expanding its capacity for steel assemblies and welded constructions.

This 315,000 sq. ft. manufacturing facility and modern office complex was built on a 32 acre site about half an hour's drive from the first Sennebogen steel plant in Balatonfüred.

Walter Sennebogen, representing Sennebogen, outlined their strategy, "Termelés-Logistic-Centrum GmbH is our most important supplier of steel assemblies. With this greenfield investment in Hungary, we are not only expanding our capacities to meet the growing demand, but also building reserves for the future."

Designed for handling large and heavy components up to approximately 98 ft. long and weighing in at 50,000 lbs., this production facility will produce 40,000,000 lb. of steel structures per year in its current configuration. Its warehousing, work preparation, and intralogistics are optimized and geared towards the particularly large components and will deliver increased capacity. Significant investment was also made in modern machine tools and machining centers for mechanical processing as well as flame and laser cutting.

Sennebogen's investment and greenfield approach in this growth strategy, while securing Sennebogen's supply chain, created 80 new skill jobs for construction mechanics



In attendance at the ribbon cutting ceremony were shareholder Walter Sennebogen and the managing director of the site, Michael Seiferling, together with the Hungarian Minister for Foreign Affairs and Trade, Péter Szijjártó and MP, Károly Konrád.

and welding technology specialists.

According to Sennebogen, the sustainability aspect also played a key role in the design of the new location: "The plant is equipped with a photovoltaic system with an output of 2.4 megawatts so that it will

be energy self-sufficient with the electrical power generated from its PV system. The office building is also heated with energy-efficient underfloor heating and the production hall with low-temperature heating via concrete core activation."

July steel shipments down 1.4 percent

The American Iron and Steel Institute (AISI) reported that for the month of July 2023, U.S. steel mills shipped 7,550,446 net tons, a 1.6 percent decrease from the 7,676,083 net tons shipped in July 2022. Shipments were down 1.4 percent from the 7,655,692 net tons shipped in the previous month, June 2023. Shipments year-to-date in 2023 are

51,866,292 net tons, down 3.3 percent vs. 2022 shipments of 53,649,221 net tons for 7 months.

A comparison of shipments year-to-date in 2023 to the first 7 months of 2022 shows the following changes: hot rolled sheet, up 4 percent, cold rolled sheet, down 1 percent and corrosion resistant sheet, down 2 percent.



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SPECIFICATIONS

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Height	8'1"

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Height	13'3"

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Pressure	2,400 psi
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Shaft	4" Rod

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METALS

July 2023 crude steel production increases

World crude steel production for the 63 countries reporting to the World Steel Association (worldsteel) was 158.5 million tonnes (Mt) in July 2023, a 6.6 percent increase compared to July 2022.

Crude steel production by region

Africa produced 1.4 Mt in July 2023, up 26.1 percent on July 2022. Asia and Oceania produced 119.9 Mt, up 9.1 percent. The EU (27) produced 10.3 Mt, down 7.1 percent. Europe, Other produced 3.6 Mt, up 5.1 percent. The Middle East produced 3.1 Mt, down 3.9 percent. North America produced 9.4 Mt, down 1.2 percent. Russia & other CIS + Ukraine produced 7.4 Mt, up 9.3 percent.

South America produced 3.4 Mt, down 8.4 percent.

Top 10 steel-producing countries

China produced 90.8 Mt in July 2023, up 11.5 percent on July 2022. India produced 11.5 Mt, up 14.3 percent. Japan produced 7.4 Mt, up 0.9 percent. The United States produced 6.9 Mt, up 0.5 percent. Russia is estimated to have produced 6.3 Mt, up 5.8 percent. South Korea produced 5.7 Mt, down 9.0 percent. Germany produced 3.0 Mt, down 0.5 percent. Turkey produced 2.9 Mt, up 6.4 percent. Brazil produced 2.7 Mt, down 4.7 percent. Iran produced 2.0 Mt, down 1.5 percent.

Top steel-producing countries				
	July 2023 (Mt)	% change July 23/22	Jan-July 2023 (Mt)	% change Jan-July 23/22
Africa	1.4	26.1	9.0	7.0
Asia and Oceania	119.9	9.1	828.4	1.7
EU (27)	10.3	-7.1	76.7	-10.3
Europe, Other	3.6	5.1	23.8	-11.7
Middle East	3.1	-3.9	26.2	2.3
North America	9.4	-1.2	64.1	-3.5
Russia & other CIS + Ukraine	7.4	9.3	51.2	-0.8
South America	3.4	-8.4	23.7	-7.4
Total 63 countries	158.5	6.6	1,103.2	-0.1

Finished import market share estimated at 21 percent

Based on the Commerce Department's most recent Steel Import Monitoring and Analysis (SIMA) data, the American Iron and Steel Institute (AISI) reported that steel import permit applications for the month of August totaled 2,214,000 net tons (NT). This was a 3.2 percent decrease from the 2,286,000 permit tons recorded in July and a 6.6 percent decrease from the July final imports total of 2,371,000. Import permit tonnage for finished steel in August was 1,802,000, down 1.7 percent from the final imports total of 1,832,000 in July. For the first eight months of 2023 (including August SIMA permits and July final imports), total and finished steel imports were 19,592,000 NT and 15,090,000 NT, down 10.9 percent and 15.3 percent, respectively, from the same period in 2022. The estimated finished steel import market share in August was 21 percent and is 22 percent year-to-date (YTD).

Steel imports with large increases in August permits vs. July final imports

include sheets and strip all other metallic coatings (up 50 percent), standard pipe (up 39 percent), wire rods (up 32 percent), cut lengths plates (up 28 percent) and hot rolled sheets (up 17 percent). Products with significant year-to-date (YTD) increases vs. the same period in 2022 include cut lengths plates (up 24 percent), standard rails (up 20 percent), oil country goods (up 17 percent), line pipe (up 17 percent) and electrical sheet and strip (up 12 percent).

In August, the largest steel import permit applications were for Canada (535,000 NT, up 1 percent from July final), Mexico (356,000 NT, up 23 percent), South Korea (234,000 NT, up 48 percent), Brazil (211,000 NT, down 45 percent) and Vietnam (84,000 NT, up 65 percent). Through the first eight months of 2023, the largest suppliers were Canada (4,707,000 NT, no change), Mexico (2,971,000 NT, down 24 percent) and Brazil (2,673,000 NT, up 35 percent).

Novelis enters agreement to supply aluminum beverage can sheet

Novelis Inc. has signed a new anchor customer contract with aluminum can maker Ball Corporation in North America. Under the contract, Novelis will supply aluminum sheet to Ball can making plants in North America.

With this contract and other commitments, Novelis has secured all of the beverage can capacity from its new plant in Bay Minette, Alabama, underscoring the strong demand for the company's high-recycled-content beverage can sheet. The new plant, expected to begin commissioning in 2025, will be the first fully integrated aluminum manufacturing plant built in the U.S. in nearly 40 years and will have an initial capacity of 600,000 tons of finished goods primarily for the North American beverage can and automotive markets.

"Securing contracts for beverage can production capacity at Bay Minette two years before the plant is expected to be completed demonstrates our customers' confidence in our ability to plan, construct and operate our new plant in Alabama," said Steve Fisher, president and chief executive officer of Novelis.

The agreement between Novelis and Ball advances both companies' sustainability commitments by including closed-loop recycling and joint efforts to improve beverage can recycling. Through closed-loop recycling programs, Novelis directly takes back the manufacturing scrap generated during the can-making process and recycles it into new can sheet, which is then made into new beverage cans. In addition to this continuous loop, Novelis recycles more than 82 billion used beverage cans per year into new aluminum for beverage packaging. These efforts result in lower-carbon products, as recycling aluminum requires only 5 percent of the energy used to make primary aluminum, resulting in 95 percent less carbon emissions.

Novelis expects global demand for aluminum beverage can sheet to grow at a 3 percent compounded annual growth rate from 2022 to 2031. The demand growth is driven by consumer preference for more sustainable products and size variety, as well as more beverage types being packaged in cans.

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PLASTICS

New equipment increases foam polystyrene recycling in Albuquerque



“We are looking to not only lead in recycling polystyrene foam materials in New Mexico, but also serve as educators on recycling these materials,” said Tom Spadafora of ABQ Foam Recycling/The Foam Recycler. “Repurposing foam materials and keeping it out of landfills is our top priority.”

Residents and businesses in the metro Albuquerque area will see the service promoted via local municipality partnerships, social media, local publications, neighborhood associations, and other local and regional engagements.

“ABQ Foam Recycling/The Foam Recycler is extending polystyrene foam recycling to a significant residential population and commercial sector in the metro Albuquerque area,” said Natha Dempsey, president of the Foodservice Packaging Institute. “Supporting programs that provide access to additional foam recycling and divert the material from landfills and into new products is at the heart of the Foam Recycling Coalition.”

The grant is made possible through contributions to FRC, which focuses exclusively on increased recycling of post-consumer foam polystyrene. Its members include Americas Styrenics; Chick-fil-A; CKF Inc.; Dart Container Corp.; Dyne-A-Pak; Genpak; INEOS Styrolution America LLC; Lifoam Industries, LLC; Pactiv Evergreen; and Republic Plastics.

ABQ Foam Recycling/The Foam Recycler, a polystyrene foam recycling service in central New Mexico, received a \$38,800 grant from the Foodservice Packaging Institute’s Foam Recycling Coalition (FRC) to fund the purchase and installation of a foam densifier.

Densifiers are used to compact #6 foam products, such as cups, plates, clamshells, egg cartons and block packaging foam, into foam blocks or ingots. The facility sells the foam ingots to end markets in California, New Jersey and Canada to be manufactured into picture frames, light switch covers, crown molding and electronic cases.

ABQ Foam Recycling/The Foam Recycler services a population of almost one million people in metro Albuquerque through a drop-off location, community events and commercial pick-up service.

ELECTRONICS

PRC celebrates first year of Pittsburgh e-waste recycling

Since Pennsylvania Resources Council (PRC) launched a partnership with the City of Pittsburgh in May 2022, more than 2,800 city residents have dropped off materials through the city’s hard-to-recycle program.

Working in collaboration with PRC, Pittsburgh’s Department of Public Works (DPW) provides residents with convenient, affordable options for responsibly disposing of electronics and household chemicals at the Environmental Services facility in the Strip District.

Each month the facility receives an average of 15,000 pounds of electronics to be recycled, and the program has moved more than 189,000 pounds since 2022.

“These collections provide a way for folks to easily and responsibly dispose of electronic and chemical materials,” said DPW director Chris Hornstein. “Appropriate recycling of these items provides many benefits. It prevents hazardous waste from entering our rivers and ground soil, and it also helps keep our dedicated workforce safe by eliminating exposure to hazards during our routine pick-ups at the curb. DPW is pleased to offer this resource to Pittsburghers, as a way for all of us to help keep the city clean and safe.”

Electronics recycling collections are held on Tuesdays and Thursdays



throughout the year, while combined household chemical/e-waste collections are held every other month on a Saturday at the Environmental Services facility. Neighborhood e-waste collection events are also scheduled throughout the year to provide citizens with an additional opportunity to dispose of electronics.

PRC Deputy Director Sarah Alessio Shea explains that all electronic scrap collected is forwarded to eLoop LLC, an e-Stewards-certified processor that responsibly manages electronic waste. “The public can feel confident that their material and data is being safely, ethically, and responsibly recycled when dealing with PRC and eLoop.”

Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
FERROUS						
#1 Bushelings	per gross ton	\$390.00	\$395.00	\$393.00	\$395.00	\$410.00
#1 Bundles	per gross ton	480.00	482.00	485.00	387.00	402.00
Structural	per gross ton	359.00	361.00	365.00	359.00	395.00
#1 & #1 Mixed Steel	per gross ton	312.00	310.00	315.00	312.00	348.00
Crushed Auto Bodies	per gross ton	210.00	212.00	210.00	217.00	251.00
Shredded Auto Scrap	per gross ton	391.00	392.00	390.00	395.00	400.00
NON FERROUS						
#1 Copper Bare Bright	per pound	3.78	3.69	3.56	3.55	3.65
#2 Copper Wire & Tubing	per pound	3.51	3.50	3.37	3.35	3.45
Aluminum Cans	per pound	.73	.73	.74	.72	.73
Al/Cu Radiators	per pound	1.72	1.75	1.78	1.79	1.83
Aluminum Radiators	per pound	.55	.57	.59	.59	.60
Heater Cores	per pound	1.49	1.53	1.54	1.55	1.54
Stainless Steel	per pound	.64	.65	.62	.63	.64

All prices are expressed in USD. Printed as a reader service only.

DISCLAIMER: American Recycler (AR) collects pricing and other information from experienced buyers, sellers and facilitators of scrap metal transactions throughout the industry. All figures are believed to be reliable and represent approximate pricing based on information obtained by AR (if applicable) prior to publication. Factors such as grades, quality, volumes and other considerations will invariably affect actual transaction prices. Figures shown may not be consistent with pricing for commodities associated with a futures market. While the objective is to provide credible information, there is always a chance for human error or unforeseen circumstances leading to error or omission. As such, AR is not responsible for the accuracy or completeness of the information provided, or for outcomes arising from use of this information. American Recycler disclaims any liability to any person or entity for loss or damage resulting from errors or omissions, including those resulting from negligence of AR, its employees, agents or other representatives.

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AUTOMOTIVE

Work Harder, Not Smarter

Contributed by: PAUL D'ADAMO

One of the first things I tell potential customers is that I am more frugal than they are with their time and labor. I often get sneers at this statement, but it is true. Countless recyclers will call, and they ask for a list of cores, usually alternators, starters, and a/c compressors. UGH!! Those products are certainly a staple of the auto core world, but first, are you asking for a list? How 1970s. As a focused, organized businessperson, the last thing you want to do is look up parts by lists.

Rapid Look Up by VIN

We want fast look-up by VIN or other electronic means, with results quickly presented in an organized fashion and ready to assemble in a work order. The second part of the statement is extremely limiting. I love alternators, starters, and a/c converters. Still, their core pricing hasn't changed much, and by focusing on those three-part types, you miss all the other part types like ECMs, electronic steering rack & pinions, instrument clusters, temperature controllers, ABS units, etc. Set a minimum price, and don't get bogged down on lower-price parts. Cherry pick how you spend your precious time and labor and don't be afraid to core out vehicles while dismantling.

Scrap and Converters Are More Volatile

Why wouldn't you want to maximize this revenue stream by cashing out your

auto cores? They provide steady monthly revenue without the high volatility of scrap and converters. Have I mentioned my obsession with old and overstocked parts? I have been to yards that have parts piled up in the aisles because they refuse to part with old stock. This disorganization creates more MIAs of sellable parts, causing more people and time to chew up the clock looking through the old parts. I reviewed a few yards inventory recently where there were zero dollar parts in their system – lots and lots of them. I practically had a heart attack in my chair. Reviewing old inventory allows you to see out-of-date and zero parts prices.

Managing Old and Overstock Parts Creates Lean Inventory

Most of us don't have acres of building space and racks to store every part pulled since the 1960s. Most core companies give you access to data, allowing you to clear out old and overstocked parts from inventory, clearing the way for newer inventory. If you have a good inventory person, they should be charged with entering the latest inventory from recently purchased vehicles and managing your loose parts inventory on the shelves. Our systems provide excellent reference data like "DOH – days on hand" and "QOH – quantity on hand." Use this data to make good decisions and not get buried through "paralysis by analysis."

EcoproBM, SK ON, Ford investing in Québec; building cathode plant

SK On, EcoProBM and Ford are investing \$1.2 billion to build a cathode manufacturing facility that will provide materials that ultimately supply batteries for Ford's future electric vehicles.

Once production begins in the first half of 2026, the site will have the capacity to produce up to 45,000 tonnes of CAM per year.

This new facility – Ford's first investment in Québec – is part of the automaker's plan to localize key battery raw material processing in regions where it produces EVs.

"Ford has been serving customers in Canada for 119 years, and we're excited to invest in this new facility to create a vertically integrated, closed-loop battery manufacturing supply chain in North America designed to help make electric vehicles more accessible for millions of people over time," said Bev Goodman, president and chief executive officer, Ford of Canada."

EcoPro CAM Canada LP will manufacture cathode active materials and, more precisely, high quality Nickel Cobalt Manganese (NCM) for rechargeable batteries that are targeting greater performance levels and improved EV range compared to existing products, thanks in part to EcoPro's core shell gradient (CSG) technology.

Construction has begun on the 280,000 square-meter (or more than 3 million square-feet) site and will include

a 6 floor building that will house approximately 345 new jobs for Canada – from engineers and sales and service professionals to co-op positions for students from local universities and colleges in Québec. EcoPro CAM Canada LP also will pursue research and development activities aiming at increasing battery safety and performance as well as increasing productivity and minimizing the environmental footprint of its manufacturing process.

For SK On, the facility is part of its efforts to secure a supply of key battery materials in North America. The South Korean battery maker has been developing its battery supply chain in the region where demand for EVs is growing fast.

SK On's annual production capacity in North America is expected to reach more than 180 GWh after 2025, which is enough to power about 1.7 million EVs a year.

Through the joint venture, the Québec facility will become a key landmark for EcoProBM's pioneering of the North American market. EcoProBM will invest to mass produce and supply 45,000 tonnes of cathode materials, supporting production of up to 225,000 electric vehicles annually.

In 2021, EcoProBM established a cathode material ecosystem in Pohang, Korea – handling everything from recycling waste batteries to producing lithium, precursors and cathode materials.

BUSINESS BRIEFS

CW Mill Equipment celebrates 50 years

■ CW Mill Equipment Co., Inc. is a diversified manufacturing, sales and service company, that is celebrating 50 years in 2023. Each product that CW has developed, manufactured and offered for 50 years has been in large part customer-driven and is the basis for all that CW Mill Equipment does. That approach is backed with experienced staff, advanced manufacturing equipment, and will continue to provide products for years to come. CW Mill, located in Sabetha, Kansas, was incorporated in October of 1973 by founder Clyde Wenger.

CW Mill's products include large HogZilla® brand industrial grinding machines, high performance hammer mill cutting and grinding tools for rigid and swing hammer style grinding machines, and automotive installation kits for crankshaft-driven aftermarket accessories.

Casella Waste Systems completes acquisition of Consolidated Waste Services

■ Casella Waste Systems, Inc., a regional solid waste, recycling and resource management services company, has completed the acquisition of the collection, transfer, and recycling assets of Consolidated Waste Services, LLC and its affiliates (dba Twin Bridges) on September 1, 2023. The purchase price of the acquisition was approximately \$219 million and was funded through proceeds from the company's equity offering completed on June 16, 2023.

The acquisition includes two hauling operations, one transfer station, and one material recovery facility in the greater Albany, New York market, and is expected to generate total annualized revenues of approximately \$70 million.

Yanmar CE North America adds director of human resources

■ Yanmar Compact Equipment North America hired Linda Haensel to the organization's newly created director of human resources role. Haensel is responsible for human resources training and development, the enhancement of organizational culture, and employee recruitment and retention as the company prepares for significant expected growth.

Haensel draws from her more than 20 years of human resources experience with large manufacturing companies to oversee employee relations strategy, drive organizational effectiveness, and champion talent acquisition and retention. She brings seasoned knowledge of best practices and an ability to look at processes and improve them.

The addition of Haensel to the team ties into Yanmar Compact Equipment North America's other growth efforts, including a 32,000 square-foot expansion to its Grand Rapids, Minnesota facility due for completion in Spring 2024. The company anticipates the addition of hundreds of jobs over the next five years.

Eco Green Equipment names Bruce Bart as new general manager

■ Eco Green Equipment (EGE), a provider of recycling equipment has appointed Bruce Bart as their new general manager. With over 30 years of experience in the plastic and rubber industries, Bart brings a wealth of expertise and a proven track record of success to his new role.

Throughout his career, Bart has demonstrated his proficiency in all aspects of the plastic and rubber industries, including plant set-up and expansion, equipment design, product development, and process management. He has successfully built and overseen multiple large-scale manufacturing facilities, showcasing his ability to navigate complex challenges and deliver exceptional results.

Bart's leadership was instrumental in the establishment of a state-of-the-art facility spanning 165,000 square feet, equipped with cutting-edge machinery. He supervised all operations, including in-house tool fabrication, robotic welding, roll forming, tube bending, powder coating, and distribution/logistics. Additionally, he spearheaded the consolidation of three separate manufacturing facilities into a single 120,000 square foot facility, streamlining operations and driving efficiency.

Having worked with numerous machine manufacturing companies, both in the U.S. and internationally, Bart possesses a unique understanding of the industry. His expertise enables him to determine the optimal equipment and configuration, ensuring clients achieve cost-effective and efficient output of their products.

Bart joined Eco Green Equipment in January 2017 as the North American Sales Manager, where he played a key role in expanding equipment sales across the U.S. and Canada.

Patrick Nicol named director of technology

■ MSS, a division of CP Group and a provider of optical sorting and AI solutions to the recycling and waste management industry, has appointed Patrick Nicol as director of technology. With this strategic hiring, MSS is poised to embark on an exciting journey of AI-driven innovations and advancements.

Nicol's journey in recycling began at a young age when he witnessed his small-town pioneering recycling efforts. This exposure ignited his passion for waste management and the realization that valuable materials were being discarded without a second thought. With a background in engineering, he saw an opportunity to be part of something bigger and immediately seized the chance to work in the recycling business.

Nicol is enthusiastic about implementing the AI platform and improving the maintenance-friendliness of their state-of-the-art optical sorters. He is passionate about selective sorting, vision, and extraction and is committed to listening to customers to turn their visions into reality.

BUSINESS BRIEFS

Kristi Werner named chief executive officer for United Recyclers Group

■ United Recyclers Group (URG) announced that Kristi Werner, an 18-year veteran of the automotive recycling industry, has been named chief executive officer for the organization. Werner, who joined URG in 2011, was promoted to the role after serving as the chief technology officer.

URG, headquartered in Georgetown, Texas, leads the industry in providing products and services tailored to the operational needs of automotive recyclers.

Werner is credited with helping recyclers take back control of their data so they may be able to integrate with new platforms not previously available to them. Before URG, she began her career at Actual Systems Pinnacle in 2005 as a software trainer. From there, she was promoted to a project manager position within the company, and then rounded out her tenure on the sales team. She joined United Recyclers Group (URG) in 2011 and became their CTO in 2021.

Previous chief executive officer Donald Porter, who led the organization since 2012 after a long career at State Farm, will take on a new role as an internal industry/business consultant for URG.

Steel Dynamics declares cash dividend

■ Steel dynamics, Inc. announced that the company's board of directors has declared a third quarter cash dividend of \$0.425 per common share. The dividend is payable to shareholders of record at the close of business on September 30, 2023 and is payable on or about October 16, 2023.

AISI hires Dustin Young as director of business development for the Construction Program

■ The American Iron and Steel Institute (AISI) welcomed Dustin Young as the director of business development for the construction program. Young is responsible for managing the optimization of the AISI construction programs by providing strategic leadership to direct multiple construction committees and implement program business plans. He succeeds Dan Snyder, who was recently promoted to AISI vice president, construction program. Before joining AISI, Young was the manager of technical and research activities for the Association for Materials Protection and Performance (AMPP).



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EVs – Opportunities and challenges

by MAURA KELLER

mkeller@americanrecycler.com

2035 – It’s a date that has been bandied about by automotive manufacturers as the goal date to end production of internal combustion vehicles (ICEs) and turn their manufacturing attention to full production of EVs. But is this goal something that is achievable, considering the numerous challenges emerging within the EV marketplace – including infrastructure challenges for EV battery charging, limited rare earth materials needed for EV batteries, and the concerns of cash-strapped consumers – and what does this mean to the automotive recycling space?

Dr. Nadim Maluf, Qnovo’s chief executive officer and former Stanford consulting professor, works with all car manufacturers and legacy car makers who are making the transition to electric vehicles. According to Maluf, Qnovo is seeing an acceleration in EV adoption. In many countries around the globe, it is crossing the critical five percent threshold that signals wider adoption. It does not mean that there aren’t challenges. Affordability, range anxiety, charging availability and reliability remain important for adoption.

“Supply chain and raw materials are not yet a limitation to growth – perhaps in 2028 or 2030, but not today,” Maluf said. “All expectations are that there will be an oversupply of battery manufacturing in the next couple of years.”

According to Maluf, most forecasts indicate that by 2040 to 2050, all vehicles sold will be EVs. “Between now and then, there is a ramp up curve. Sometimes it slows down and at other times it accelerates,” Maluf said. “While more governments have established policies to forbid the sale of ICEs by 2035, ICEs will continue to be a feature on the road. They won’t disappear just yet, but the ICE market is on a slow decline that will take a generation to entirely end. I think the sector is too hung up on 2035 as a date, as opposed to ‘the EV train has left the station.’ Does it really matter whether the date is 2035, or 2036 or 2037? Rather, it is a race. OEMs that figure out scaling sooner and become profitable sooner will



By 2035 automotive manufacturers will turn their manufacturing attention to full production of EVs.

be the winners – Tesla is a good example. Those OEMs that can’t figure it out as the clock ticks will not be around in the coming decade.”

According to Benoit Leblanc, deputy chief executive officer of TRIGO Group, a global provider of operational quality management and consulting solutions, mainly for the automotive, mobility, aerospace and heavy transportation industries, said experts predict that EVs and battery demand will grow by more than 25 percent per year over the next 5 years and potentially longer. The growth is driven by both demand and car production, both strongly pushed by most governments in various ways.

“From a carbon emission point of view, EVs are a no brainer. McKinsey now estimates the total life cycle of an EV emits 50 to 80 percent less carbon than an ICE vehicle, depending on how green the electricity is produced locally,” Leblanc said. “So the question is not if the EV marketplace will significantly grow – we are certain it will – but how fast.”

Leblanc said this should mainly depend on two things: how the charging infrastructure will ramp up and how

manufacturers will overcome the upcoming raw material limitations, especially lithium, which could put future battery production at risk.

“Today, especially in Europe and North America, the gap in charging infrastructure still feeds people’s ‘range anxiety,’ which slows down the demand shift towards EV, especially in lower density areas where fast charging points are scarce,” Leblanc said. “I believe that an intensified government push is needed in the short term to turbo-charge infrastructure building. It will then create an attractive environment for a dynamic private charging point ecosystem to emerge and be sustained over the longer term. Such a leap has not happened yet but my colleagues at TRIGO and I are confident it will.”

Leblanc further pointed out that according to a 2022 report from the Boston Consulting Group, today’s lithium supply is 40 percent short of what demand should be in 3 years. Mining and refining capacity building will be the main bottleneck, with huge investments needed.

“This may create temporary supply constraints. Main car OEMs are working to mitigate such risks by integrating some

of the battery production,” Leblanc said. **Potential Impact on ICE Marketplace & Auto Recycling**

Kevin Fitzpatrick, senior vice president of North America Operations for Opus IVS, an automotive tech-focused collision repair solutions company, said that EVs account for approximately 14 percent of total U.S. vehicle sales, the problem however, is that manufacturers were driving for much more.

“As an example, Ford has approximately 117 days’ worth of stock on dealer lots. This is a huge expense to carry for their dealers. Output from manufacturers has outpaced sales,” Fitzpatrick said. “In my opinion the ICE marketplace will not truly be upset by EVs for a number of years, considering small truck and SUV sales in the U.S. and a lack of a viable alternative in an EV vehicle with any real range and capacity. The secondary vehicle market for EVs also is terrible – they notoriously lack resale value.”

Fitzpatrick further explained that the 2035 goal was set by the present administration and a number of vehicle manufacturers jumped on board.

See EVs, Page B6

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FuelCell Energy and Toyota complete Tri-gen system

FuelCell Energy, Inc. and Toyota Motor North America, Inc. have completed the first-of-its-kind “Tri-gen system” at Toyota’s Port of Long Beach operations. The Tri-gen system, owned and operated by FuelCell Energy, produces renewable electricity, renewable hydrogen, and water from directed biogas. FuelCell Energy has contracted with Toyota to supply the products of Tri-gen under a 20 year purchase agreement.

Tri-gen is an example of FuelCell Energy’s ability to scale hydrogen-powered fuel cell technology, an increasingly important energy solution in the global effort to reduce carbon emissions. Tri-gen will enable Toyota Logistic Services (TLS) Long Beach to be the company’s first port vehicle processing facility in the world powered by onsite-generated, 100 percent renewable energy and represents the types of innovative and bold investments the company is making as part of its environmental sustainability strategy.

“By utilizing only renewable hydrogen and electricity production, TLS Long Beach will blaze a trail for our company,” said Chris Reynolds, chief administrative officer, Toyota. “Working with FuelCell Energy, we now have a world-class facility that will help Toyota achieve its carbon reduction efforts. The great news is, this real-world example can be duplicated in many parts of the globe.”

FuelCell Energy’s fuel cell technology will support Toyota’s operations at the port through an electrochemical process that converts directed renewable biogas into electricity, hydrogen, and usable water with an efficient, combustion-free process that emits virtually no air pollutants.



FuelCell Energy and Toyota Tri Gen FuelCell Energy Toyota production system at Port of Long Beach, California.

- Tri-gen produces 2.3 megawatts of renewable electricity, part of which will be off-taken by TLS Long Beach to support its operations at the port, which processes approximately 200,000 new Toyota and Lexus vehicles annually.
- The FuelCell Energy Tri-gen system can produce up to 1,200 kg/day of hydrogen. This will provide for TLS Long Beach’s fueling needs for its incoming light-duty fuel cell electric vehicle (FCEV) Mirai, while supplying hydrogen to the nearby heavy-duty

hydrogen refueling station to support TLS logistics and drayage operations. Hydrogen production can be ramped up and down based on needs/requirements.

- 1,400 gallons of water will be co-produced per day from Tri-gen’s hydrogen production process and will be used by TLS Long Beach for car wash operations for vehicles that come into port prior to customer delivery. This will help decrease the use of constrained local water supplies by approximately half a million gallons per year.

“Renewable hydrogen is an important fuel for the future of the Port of Long Beach and the shipping industry,” said Port of Long Beach chief executive officer, Mario Cordero. “The renewable hydrogen generated by the ‘Tri-gen’ system that Toyota commissioned, and similar projects, are part of our multi-strategy approach to help fuel the transition of equipment like locomotives, harbor craft, cargo-handling equipment and trucks to zero emissions.”

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EMR and Northvolt establish electric vehicle battery recycling facility in northern Germany

Electric vehicle battery manufacturer Northvolt, and leading metal recycler EMR have built and commenced operations at a battery recycling facility in Hamburg. The brand new site will recycle the huge number of electric vehicle (EV) batteries that will reach their end of life in the years ahead and provide much-needed capacity to support the recycling of batteries in Europe.

The new facility will play a crucial role in dismantling these complex batteries before material is sent on for further processing or re-enters the circular supply chain.

The facility, operated and furnished by EMR, features equipment enabling the discharge and dismantling of approximately 10,000 tonnes of electric vehicle battery packs per year. This will provide

crucial recycling capacity as millions of drivers switch to electric vehicles. The layout and process flow of the facility was undertaken by Northvolt, integrating battery discharging and dismantling solutions designed and delivered by the company.

The discharge and dismantling of the battery packs is the first step in the battery recycling process. With more than 70 years of experience in the metal recycling industry, EMR will use its expertise to safeguard the high-quality copper and aluminum used to build modern EV battery frames. The process will ensure this material can, once again, be used to manufacture sustainable technologies, such as the next generation of electrical vehicles.

Following this, the remaining battery

modules recovered from packs at the plant will be delivered to Northvolt's facilities for further recycling. There, the modules will be crushed to enable the recovery of plastics, aluminum and copper. The remaining material, known as black mass, will be processed at Revolt Ett recycling plant in northern Sweden using Northvolt hydromet technology to recover battery-grade materials including more lithium, nickel, manganese, and cobalt.

These materials will be fed to Northvolt's adjacent cathode active material production facilities, which in turn support on-site battery manufacturing. When fully built, Revolt Ett will enable the processing of 125,000 tonnes of black mass per year – sufficient to cover approximately half of Northvolt Ett's raw

material needs for cathode production.

At every stage, the material that EMR and Northvolt recycle creates an entirely new pathway to sourcing minerals required for battery manufacturing – one that is economically and environmentally preferable to mining.

Now in operation, the Hamburg facility is receiving battery packs and modules from the European electric vehicle market, secured by Northvolt. Alongside end-of-life battery packs of varying designs, the facility is also equipped to receive and process battery packs that are recalled from the market.

With these capabilities, the facility represents a key piece of infrastructure within Northvolt's offer to its automotive customers, as well as to other stakeholders requiring battery recycling solutions.

Ford Pro expands charging solutions revealing new lineup of chargers for commercial customers

Ford Pro, the commercial division within Ford Motor Company, revealed new charging hardware added to its suite of end-to-end solutions to help make it easier for commercial customers to transition their fleets to electric.

The new Series 2 AC Charging Station 80 amp and expanded DC Fast Charger options are designed for commercial vehicle use and packed with new features. Coupled with Ford Pro's charging management software, the company provides a fully integrated solution that simplifies EV charging for both Ford and non-Ford electric vehicles.

"We're committed to helping businesses make the transition to electric easy with a single-minded focus on curated commercial charging solutions," said Ted Cannis, Ford Pro chief executive officer. "With our tailored EV consulting and portfolio of charging hardware and software solutions, we can design, implement and operate solutions for Ford and other brands that will last for many years to come. And we are not afraid to tell customers when electrification is not yet a good fit and support them with other solutions."

Now available for pre-order, the Series 2 AC Charging Station 80 amp comes with features that simplify and help improve the charging experience at the workplace for fleet operators and their drivers including:

- Enhanced security with RFID that limits unwanted charger access. Fleet operators can issue a unique Ford Pro RFID card1 to control access to chargers enabling charging sessions to be limited to specific individuals or vehicles, by specifying day and times for access. The new RFID software also supports Ford and non-Ford vehicles unlocking the ability for fleet operators to track energy reports through Ford Pro's charging management software.



Ford Pro Series 2 Charger 23 FRD FLI 61522 PRO

- Improved detachable cable and connector reduces time and expense of charger repairs avoiding replacement of the entire charging station if a cable or connector is damaged.
- Wide range of connectivity options with cellular pre-configured and optional Wi-Fi and Ethernet connectivity for locations with restricted cellular coverage.
- The new Series 2 AC Charging Station 80 Amp will be ISO-15118 ready and equipped to enable future functionality over the air such as advanced vehicle to charger communications that can identify and log when a specific vehicle connects. Ford Pro designed the new hardware to be ready for the future, so customers are better prepared for new electric vehicles and capabilities to come.
- New LCD screen on the Series 2 charger displays step-by-step instructions

to initiate charging and important information including charge duration, fault alerts, energy usage, and more.

- Temperature sensors to monitor and alert for overheating by derating the charger automatically.
 - Extended operating temperature range of -40C (-40F) to 50C (122F) and operating altitude of up to 3500m to serve the needs of customers in more places.
 - The new Ford Pro charging hardware is backed by a three year warranty on charger parts and labor and continues to provide around-the-clock tech support to help increase uptime and productivity for customers.
- Ford Pro Telematics, chargers, software and service work seamlessly to provide fleet operators and managers with a single solution to monitor their vehicle network 24/7.

Ford Pro is also revealing extended

DC Fast Charger options in 180kW and 240kW giving fleet operators and their drivers more versatility at their workplace with more power and shortened charge times. Aluminum pedestals feature an improved cable retractor and a sleeker look. The new Ford Pro DC Fast Chargers are available for pre-order now at ford.to/Series2ChargerPreorder.

Ford Pro Chargers work with Ford Pro's smart charging software to help ensure vehicles are charged when customers need them. The integrated software and hardware solution helps fleet managers optimize how, when and where EVs are charged along with utility reimbursement reporting, important for home-based drivers.

Using Ford Pro Charging solutions can allow customers to charge more vehicles at a given time. Customers can deploy more EVs without necessarily needing to wait for an infrastructure upgrade. The software also tracks performance and provides fleet managers with insights like kWh consumption, charge speed and distance to empty, and helps optimize total cost of ownership.

Businesses can help lower their total cost of ownership through understanding the various incentives available to them. To help ease confusion, Ford Pro has compiled commercial incentives to make it easy to find available tax credits on EV, charging equipment and charging installation costs at <https://www.fordpro.com/en-us/incentives/>. The company launched a program with professional services firm Ernst & Young LLP (EY US) to help give customers no-cost information to learn about IRA tax credits for which they may qualify. Available incentives include:

- Up to a 30 percent federal tax credit on charging and installation costs
- Up to \$7,500 back on each new qualified EV purchased in 2023
- Hundreds of federal, state, and local EV incentives and rebates

EQUIPMENT SPOTLIGHT

Balers

by **MARY M. THORNTON**

maryt@americanrecycler.com

While vehicles are the most widely recycled commodity in the world, in 2021, there were over 46.7 million metric tons of iron and steel recycled in North America as well. Lead was the most recovered metal then, at 76 percent. Other metals with a recovery rate in excess of 50 percent were titanium, magnesium, aluminum and nickel. Whether recycling autos, ferrous or nonferrous, there are a number of balers available for use in the process.

Maren offers a line of ProPak 2 Ram balers that range from feed openings of 57" wide x 64" long to 57" wide to 100" long with 8" (2R210), 9" (2R265/3R285), 10" (2R350), 11" (2R425), and 12" (2R500) cylinders, operating at 4,200 or 4,500 PSI. "We also offer a nonferrous version of the ProPak60 closed door full eject baler," Mike Blais, regional sales manager, said. All models have a tongue and groove floor, replaceable AR hardened wear liners and feature interlocking plate steel construction, which distributes stress away from the welds, to tabbed locking joints.

Blais continued, "The multi-edge shear blade reduces cost by allowing blade rotation to gain additional, new cutting edges before replacement is required. Two ram models include a baler separation door that facilitates instant material changeover with virtually no cross contamination. Baler door transducer positioning allows for up to a 13" oversized bale to eject without jamming. Horsepower options are 40hp



Maren Engineering

(dual 20s), 60hp (dual 30s), 80hp (dual 40s), 100hp (dual 50s), 120hp (triple 40s), 150hp (triple 50s), 180hp (triple 60s). Our system automatically stage starts to reduce surge on the electrical source. During low production volume times, motors can be de-selected (turned off) to reduce overall power consumption, while maintaining 100 percent bale weights and shearing performance.

"Maren's simple but innovative ProPak hydraulic system allows balers to run faster and more efficiently while being more serviceable and the system is designed to benefit low-volume scrap processors as well as large, high-volume

operations. Our highly efficient piston pumps are rated for 6,100psi while running at only 4,500psi, ensuring less stress and a longer life. With a programmable touchscreen control, settings for an unlimited number of commodities can be added for easy selection and automatic set-up." Founded in 1962, Maren became part of the Komar family of companies this year.

"In the midst of all the moving parts that have dictated scrap market development over the years, OverBuilt has been pro-active in meeting the ever changing needs of those in the scrap and auto salvage business. Our baler logger, introduced in 2008, provides scrap recyclers with fast, efficient performance. With a 20' charge box, a crane providing a 26.5' reach and superior lifting capacity, the machine compresses metal and vehicles into a dense, more stackable form, which allows for faster loading and transporting of the finished product to market," stated Steve Besch, sales manager.

Since 1996, OverBuilt has also shipped over 850 of their car crushers to clients in North and South America and Europe. "As the only true, high speed crusher on the market, its patented oil bypass system can achieve reduced cycle times of up to 43 percent and with the largest crushing chamber opening of 10', operators can amass more tonnage in one stack," Besch concluded. Overbuilt's 50 staff members, including mechanics,



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See BALERS, Page B5

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Continued on Page B5

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Balers

■Continued from Page B4

welders, hydraulic and electrical experts, maintain a complete sales, service and parts department. Those staff members are involved in all parts of the operation – from original design, final assembly and customer service, to promotions.

The RM Johnson portable E-Z Log Baler produces a bale in a fast, neat process. "It is ready to operate, after a fluid level check and a user can move the grapple crane up to 400°, reach out 23' and lift 2,000 lbs. By selecting the metal type and volume of each bundle, a user can produce log bales to fit the requirement of the desired market and the E-Z Log Baler can operate from the control platform. The unit can be moved to the same location as the scrap that must be processed. We offer three other logger models as well," stated Dave Van Vleet, sales manager. He continued, "Even expensive machines are worthless if the final product can't be shredded. Our innovative hydraulic compression sequence solves this problem. Once loose scrap is loaded onto the baling chamber, the E-Z Log, as opposed to



R. M. Johnson Co.

mere compressing, produces a log that will stay together even when dropped. Yet the rolled logs remain loose and low density enough for a 1,500 hp shredder to easily process them."

Van Vleet touted the simple but unique design of the machine, with easily accessible components, which aids trouble-free operation and servicing. "Fewer moving parts and smaller hydraulic cylinders produce a better

bundle at a lower processing cost than other loggers. All of the hydraulic cylinders are manufactured with high-grade, seamless, polished steel at our factory. All E-Z Log Balers use standard parts and components. Operating instructions are provided by our trained specialists and baler options include stationary or portable; diesel, gas or electric engines. Custom designs and specifications are also available," he said.

Pennsylvania awards \$2.9 million in Alternative Fuels Incentive to promote zero or low emission vehicles

The Pennsylvania Department of Environmental Protection (DEP) awarded \$2.9 million in Alternative Fuels Incentive Grant funding to municipalities, schools, and businesses around the state to switch to zero-or low-emission vehicles.

The DEP Alternative Fuels Incentive Grant (AFIG) program supports projects to replace older gasoline or diesel fueled vehicles with cleaner fuel vehicles and install related fueling infrastructure to improve air quality in Pennsylvania.

The 28 funded projects will install 32

electric vehicle chargers for private and public use and put 95 electric vehicles, 24 compressed or renewable natural gas vehicles, and 11 propane vehicles on the road.

Nine of the vehicles will be fully electric long-haul tractor trailers, the first supported by the AFIG program. Several other projects are for transit buses and garbage trucks. These three types of vehicles are the biggest consumers of gasoline, according to the U.S. Department of Energy and per average annual gasoline use by vehicle type.

The projects will be fully paid for with DEP funds. The DEP receives approximately \$5 million in funding each year through the utilities gross receipts tax collected during each fiscal year. Fifteen of the projects will serve environmental justice communities.

The AFIG program supports the transition to alternative fuels including electricity, compressed natural gas, renewable natural gas, liquefied natural gas, propane, hydrogen, hythane, biodiesel, ethanol, methanol, and advanced biofuels.

GM makes vehicle-to-home charging technology available

General Motors will expand vehicle-to-home (V2H) bidirectional charging technology across its retail portfolio of Ultium-based electric vehicles by model year 2026. The first vehicles to receive the technology include the previously announced 2024 Chevrolet Silverado EV RST, followed by the 2024 GMC Sierra EV Denali Edition 1, 2024 Chevrolet Blazer EV, 2024 Chevrolet Equinox EV, 2024 Cadillac LYRIQ and the new Cadillac ESCALADE IQ.

Building on the company's plan to deliver a growing suite of energy management products and services through GM Energy, V2H unlocks additional value for EV drivers, who will be able to transfer energy from their vehicles to a properly equipped home when desired. The technology allows consumers to store and transfer energy to help offset electricity needs during peak demand days and mitigate the impact of power outages, making the transition to an all-electric future even more compelling.

"GM Energy's growing ecosystem of energy management solutions will help

accelerate GM's vision of an all-electric future by further expanding access to even more benefits that EVs can offer," said Wade Sheffer, vice president, GM Energy. "By integrating V2H across our entire Ultium-based portfolio, we are making this groundbreaking technology available to more consumers, with benefits that extend well beyond the vehicle itself, and at broader scale than ever before."

Customers will be able to leverage V2H technology on compatible GM EVs through GM Energy's available Ultium Home offerings, and the GM Energy Cloud, a software platform which will allow users to manage the transfer of energy between applicable and connected GM Energy assets and the home.

This announcement underscores GM's holistic approach to energy management, leveraging the power of Ultium to introduce new technologies and innovative features for residential customers. Developing solutions for Ultium Home that pair with GM's growing portfolio of EVs provides customers with more choices and greater value across vehicle

Ford fast tracks substantial pay increase for 8,000 UAW employees

Nearly 8,000 UAW-represented Ford employees received a substantial raise this past Labor Day.

On average, these employees now earn \$4.33 more per hour, or \$9,000 a year. The increase could top \$10,000 a year with overtime. The pay hikes were negotiated by Ford and the UAW in 2019 to shorten the time it takes workers to reach the average top wage rate of \$32 an hour.

"These pay raises are an example of Ford's commitment to improving the lives of our hourly workforce," said Bryce Currie, Ford vice president, manufacturing. "The negotiating teams nicknamed this deal '23 Jump Street' because in 2023 a significant number of UAW-Ford team members would see a jump in pay."

Normally, growing into the top wage rate takes eight years, but with this agreement, 8,000 employees reached the top wage rates with as little as four years on the job.

The top wage rate differs by the specific type of job an employee does. On average, it is \$32 per hour. With this move, 80 percent of all Ford's UAW-represented

hourly employees are now at the top wage rate. Those at the top wage rate are earning higher wages than 90 percent of all hourly employees in the U.S., according to the Bureau of Labor Statistics.

Permanent hourly manufacturing employees were eligible for the pay increase if they were hired prior to the 2019 contract date and were earning at least \$24.40 per hour as of September 1, 2023.

Ford has exceeded its job and investment commitments for the last three contracts, recently creating or retaining 5,600 jobs beyond 8,500 committed and investing \$1.4 billion beyond \$6 billion committed in the 2019 contract.

The company converted more than 14,100 employees from temporary employment to full-time permanent roles during the past four years – and made all new hourly employees eligible for health care benefits from their first day on the job effective June 13, 2022.

Ford launched a \$1 billion five-year plan to upgrade the workplace experience in its plants, starting in 2022.

EVs

■ Continued from Page B1

“A change in administration will no doubt change the focus. The U.S. and all countries lack the infrastructure to handle this. Think of all the vehicles that park on city streets, are we going to run extension cords down the sidewalk? Californians are already receiving notices asking them not to charge their vehicles because of power demands. Plenty of Americans drive over 100 miles a day, we are not ready. Consider the range issues associated with temperature, an EV on a winter morning in New England can lose 30 percent of its range in cold temperatures,” Fitzpatrick said.

EVs will eventually impact the internal combustion engine (ICE) marketplace in a significant way. But in the short term, both in Europe and North America, the ICE marketplace has not collapsed.

“EVs are still more expensive, and drivers are still anxious about driving range limitations and lack of charging infrastructure,” Leblanc said. “And after stopping the production of ICE vehicles, the supply of spare parts must be ensured in the automotive industry for at least another 15 years. But the progressive shift of a significant proportion of the market away from ICE into EVs has started, and it has passed the point of no return.”

Even though major OEMs still produce and sell ICE vehicles, they also have stopped or significantly reduced R&D investments into ICE technology improvements to shift them towards EV technologies.

“Such EV investments will increase driving range while decreasing production cost. For example, Boston Consulting Group estimates that battery cell production cost will decrease by 40 percent to \$62 per kwh by 2030. Such improvements will facilitate the demand shift to EVs,” Leblanc said.

And while some auto manufacturers have set their sights on 2035 as the goal to stop producing ICE vehicles, and having 100 percent EVs in production, it is difficult to judge if this will come to fruition. Government regulations, such as the European Union ban of ICE from 2035 or the electrification incentives of the Inflation Reduction Act in the U.S., are giving clear directions.

“For manufacturers, shifting away from ICE vehicles is a massive technology and industrial challenge but also an opportunity to renew their models and

sustain their sales for decades. So after a more or less painful adaptation phase, I’m quite confident that OEMs will make it happen,” Leblanc said. “But if physical constraints like the availability of raw material such as lithium or nickel cannot be overcome either by additional mining or by alternative battery technology, then neither a strong government push nor all the efforts of the OEMs will be sufficient to achieve 100 percent EV by 2035. In this case, since people will continue to be mobile, they’ll do it in ICE and hybrid vehicles for a while longer.”

And when it comes to automotive recycling, the team at TRIGO Group believes that recycling is not an option but is an imperative for all battery manufacturers and users for three main reasons.

First, recycling will help to secure the future supply of batteries in a world where battery demand will increase by

25 percent per year while raw material is limited. For example, manufacturers are looking to better recycle scrap and to procure recycled, non-virgin raw material.

Second, it will reduce the carbon emissions of the battery manufacturing process. Over the life cycle of an EV, its production represents more than half of the car’s total carbon emissions (and a much higher proportion in a clean grid environment). So recycling materials during production will be a key lever to reduce carbon emissions.

Lastly, recycling the batteries themselves will be a way for manufacturers to monetize the residual value of the batteries while limiting their total life-cycle carbon footprint.

“Overall a circular value chain should not be seen as a burden but as an opportunity for EV manufacturers and other players to create value,” Leblanc said. “Think about this: if battery demand increases by 25 percent per year over the next few years, so will the amount of material available to be recycled.”

Fitzpatrick said the only potential upside he sees is in the recycling space. “The vehicles have a lot of rare earth metals including dysprosium, terbium, neodymium, and of course lithium and cobalt in the batteries,” Fitzpatrick said. “None of these elements are sourced in the U.S. They come from China, The Congo and Chile. The bottom line is that EVs are great for a portion of the population today and as infrastructure improves they will become more viable. Americans purchase vehicles to fit their lifestyles, they don’t rework their existence and work day around a vehicle.”



EPA cracks down on companies for selling illegal auto parts that avoid pollution controls



The U.S. Environmental Protection Agency (EPA) announced a series of settlements with companies based in California, New Jersey, Oregon and Washington State that had illegally sold “defeat device” products throughout the U.S. that altered vehicle emissions control systems. These products are designed to “defeat” emissions controls, enabling increased emissions of nitrogen oxides (NOx) and particulate matter, both of which contribute to serious public health issues. Distribution and sale of defeat devices are violations of the Clean Air Act.

Settlement information:

Diamond Eye Manufacturing, Inc. (Athena, Oregon) sold 33,134 parts between 2017 and 2019 that allowed for the removal of a vehicle’s emission control components. As conditions of a settlement with EPA, Diamond Eye confirmed that it has destroyed its inventory of illegal parts and notified its customers of the settlement and that the company no longer provides technical support or honors warranty claims for the illegal parts. The company will post on its website for eight

weeks an announcement of the settlement and pay a \$265,000 penalty.

- Competition Specialties, Inc. (Auburn, Washington) sold 227 parts or components between 2018 and 2020 that allowed for the removal of a vehicle’s emission control components. The company paid a penalty of \$225,368.
- Maxon Auto Corp. (Chino, California) sold 867 parts or components between 2018 and 2021 that allowed for the removal of a vehicle’s emission control components. The company paid a penalty of \$120,000.
- Maxon Performance Parts Corp. (Pennsauken, New Jersey) sold 148 parts or components between 2019 and 2021 that allowed for the removal of a vehicle’s emission control components. The company paid a penalty of \$30,000.
- Remus Technology, Inc. (Emeryville, California) sold over 900 aftermarket exhaust systems for motor vehicles from 2017 to 2018 that required the removal of catalytic converters. The company paid a \$40,000 penalty.
- SHJY Trading Corp. (Walnut, California) sold 1,547 parts or components between 2018 and 2021 that allowed for the removal of a vehicle’s emission

control components. The company paid a penalty of \$15,000.

- WX Trading Corp. (Walnut, California) sold 1,391 parts or components between 2018 and 2021 that allowed for the removal of a vehicle’s emission control components. The company paid a penalty of \$15,000.
- Except for Competition Specialties, Inc., the companies each paid or will pay a reduced penalty because of a demonstrated inability to pay a higher amount.

Stopping the sale of aftermarket defeat devices for vehicles and engines is one of EPA’s National Enforcement and Compliance Initiatives. According to a study by EPA’s Office of Enforcement and Compliance Assurance, known sales of defeat devices for certain diesel trucks after 2009 and before 2020 resulted in more than 570,000 tons of excess NOx and 5,000 tons of excess particulate matter over the lifetime of the trucks.

The Clean Air Act authorizes the EPA to set standards for emissions from a variety of types of vehicles and engines. Required emission controls include filters and catalysts installed in the vehicles or engines’ exhaust systems, as well as calibrations that manage fueling strategy and other operations in the engines themselves. Federal law prohibits tampering with emissions controls, as well as manufacturing, selling, and installing aftermarket devices intended to defeat those controls.

The EPA has found numerous companies and individuals that have manufactured and sold both hardware and software specifically designed to defeat required emissions controls on vehicles and engines used on public roads as well as on nonroad vehicles and engines. Illegally modified vehicles and engines contribute substantial excess pollution that harms public health and impedes efforts by the EPA, tribes, states, and local agencies to plan for and attain air quality standards.



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Cirba Solutions expands Ohio lithium-ion processing facility

Cirba Solutions, a comprehensive cross-chemistry battery management and materials processor, is expanding its lithium-ion processing facility in Lancaster, Ohio with an investment of more than \$200 million. This will be one of the largest battery recycling facilities operating in North America. Cirba Solutions estimates it will produce enough battery-grade raw materials from recycled batteries to power more than 200,000 new EVs annually from this facility alone.

This expansion supports the company's four year roadmap to increase its recycled battery cathode production by 600 percent. It will also create an estimated 150 jobs to the greater Columbus area, while broadening community outreach and battery education to the public.

"As a trusted partner in processing end-of-life batteries, this project supports the growing need for providing critical EV materials for a sustainable and sustained domestic battery supply chain," said David Klanecky, president and chief executive officer of

Cirba Solutions. "This strategic location will supply battery grade metal salts to our customers' manufacturing facilities, create jobs to grow the local economy, and contribute to global reductions in greenhouse gas emissions."

Cirba Solutions supports a critical stage in the battery supply chain by collecting, transporting, and processing manufacturing scrap and end-of-life batteries. Currently, it is one of the largest producers of black mass from recycled lithium-ion batteries. It is also the most experienced lithium-ion recycler in North America, with more than 50 million pounds of EV batteries recycled. The company's industry-leading operations will shape the Lancaster facility's evolution to source critical raw materials domestically and create a circular economy for EVs.

"Expanding the capacity for lithium-ion battery recycling within the U.S. is imperative as the country seeks to increase domestically sourced battery materials," Klanecky said. "This will be one of many of our operational

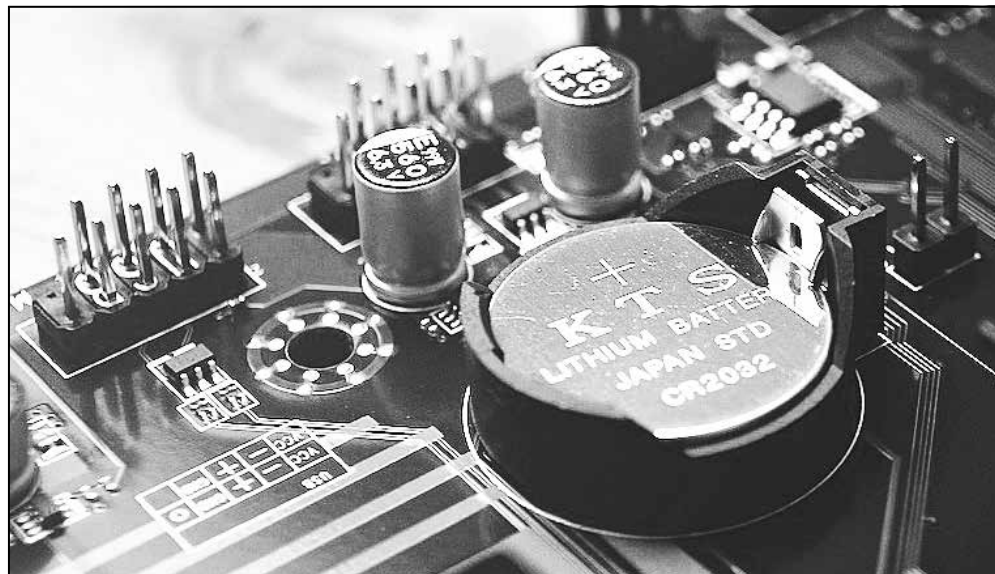


Image by cebbi, Pixabay

investments to strengthen supply, enhance national security, and promote sustainability principles. It will also bolster more manufacturers' ability to reach their electrification goals, including those set out in the Inflation Reduction Act."

Previously, Cirba Solutions announced

plans to construct a lithium-ion battery recycling facility in Eloy, Arizona. The 75,000 square foot location is expected to process enough battery material to power 50,000 EVs annually. The company aims to open seven processing facilities in North America by 2026.

GM invests in AI and battery materials innovator Mitra Chem

General Motors is leading a \$60 million Series B financing round in Mitra Chem, a Silicon Valley-based, AI-enabled battery materials innovator. The company's AI-powered platform and advanced research and development facility in Mountain View, California, will help accelerate GM's commercialization of affordable electric vehicle batteries.

GM and Mitra Chem will develop advanced iron-based cathode active materials (CAM), like lithium manganese iron phosphate (LMFP), to power affordable and accessible EV batteries compatible with GM's EV propulsion architecture, the Ultium Platform. GM's funding will help Mitra Chem to scale its current operations and to expedite their novel battery materials formulation to market.

"This is a strategic investment that will further help reinforce GM's efforts in EV batteries, accelerate our work on affordable battery chemistries like LMFP and support our efforts to build a U.S.-focused battery supply chain," said Gil Golan, GM vice president, technology acceleration and commercialization. "GM is accelerating larger investments in critical subdomains of battery technology. Mitra Chem's labs, methods and talent will fit

well with our own R&D team's work."

Mitra Chem's battery R&D facility can simulate, synthesize and test thousands of cathode designs monthly, ranging in size from grams to kilograms. These processes drive significantly shortened learning cycles, enabling shorter time to market for new battery cell formulas.

Mitra Chem is building the first North American lithium-ion battery materials product company that shortens the lab-to-production timeline by over 90 percent. Lithium-ion batteries are the key platform technology enabling electrification in transportation, consumer electronics, along with residential, commercial, and grid-scale energy storage. Mitra Chem's first product category is iron-based cathodes for Western battery applications. Iron-based cathodes shift away from the use of elements such as nickel and cobalt. Mitra Chem takes cathode products from lab to industrial scale faster than the competition by leveraging an in-house machine learning technology advantage to dramatically shorten the R&D timeline. The company's goal is to transform the cathode from a specialty chemical to a platform technology that differentiates cell performance by end application.

AutoCanada, Patrick Priestner and CanadaOne Auto Group settle outstanding litigation

AutoCanada Inc., a multi-location North American automobile dealership group, and CanadaOne Auto Group, a multi-location automobile dealership group operating dealerships across Canada, announced that they have agreed to resolve the legal proceedings between AutoCanada, Patrick Priestner and CanadaOne Auto that were commenced in 2019. Priestner was previously the chief executive officer and chairman of AutoCanada.

As part of this resolution, AutoCanada

has agreed to sell to CanadaOne Auto properties on which two of CanadaOne Auto's dealerships are located, and CanadaOne Auto has agreed to amend the leases for two AutoCanada dealerships located on properties owned by CanadaOne Auto. The parties have also agreed to co-operate on certain commercial matters for each other's mutual benefit, and plan to work together on certain charitable initiatives. Neither party has admitted any wrongdoing or liability.

Idaho parts companies plead guilty to selling illegal defeat devices

Diesel performance parts retailers GDP Tuning LLC and Custom Auto of Rexburg LLC, dba Gorilla Performance, as well as the companies' owner Barry Pierce, pleaded guilty to criminal charges in federal court in Pocatello, Idaho, and agreed to pay a total of \$1 million in criminal fines. The companies also agreed to implement compliance programs and to not manufacture, sell or install any device that defeats a vehicle's emissions controls.

Under the plea agreement, the companies and Pierce agree to pay a \$1 million criminal fine. Pierce also faces up to two years in prison.

According to court documents, GDP Tuning conspired with Pierce and others to violate the CAA by purchasing and selling tens of thousands of tuning devices and accompanying software which, when used together, tampered with vehicles' on-board diagnostic (OBD) systems. OBDs normally detect any removal and malfunction of a vehicle's emissions control equipment and record a diagnostic trouble code which will illuminate a vehicle's "check engine light." If the malfunction is not remedied, some vehicles can go into "limp mode," where the maximum

speed is limited to 5 mph as an incentive to have the vehicle repaired.

GDP Tuning bought and sold devices and software that allowed customers to reprogram or "tune" a vehicle's OBD. This reprogramming tampers with emissions monitoring built into the diagnostic system and allows removal of the vehicle's emissions control equipment without detection by the OBD. Removing a vehicle's emissions controls is referred to as a "delete" and is accompanied by a "delete tune."

In addition to GDP Tuning's national wholesale operation, Gorilla Performance and Pierce operated a retail shop and auto repair facility in Rexburg, Idaho, where customers' trucks were deleted and tuned.

Sentencing is scheduled for November 8 before U.S. District Court Judge B. Lynn Winmill for the District of Idaho. Though the corporate defendants agreed to pay \$1 million in criminal fines under the plea agreements, they face a maximum fine per count of \$500,000 or twice the gross pecuniary gain derived from the offense. The defendants' sentences will be determined at the discretion of the court after application of statutory factors and the Federal Sentencing Guidelines.

Smartville Inc. to help power Nissan North America

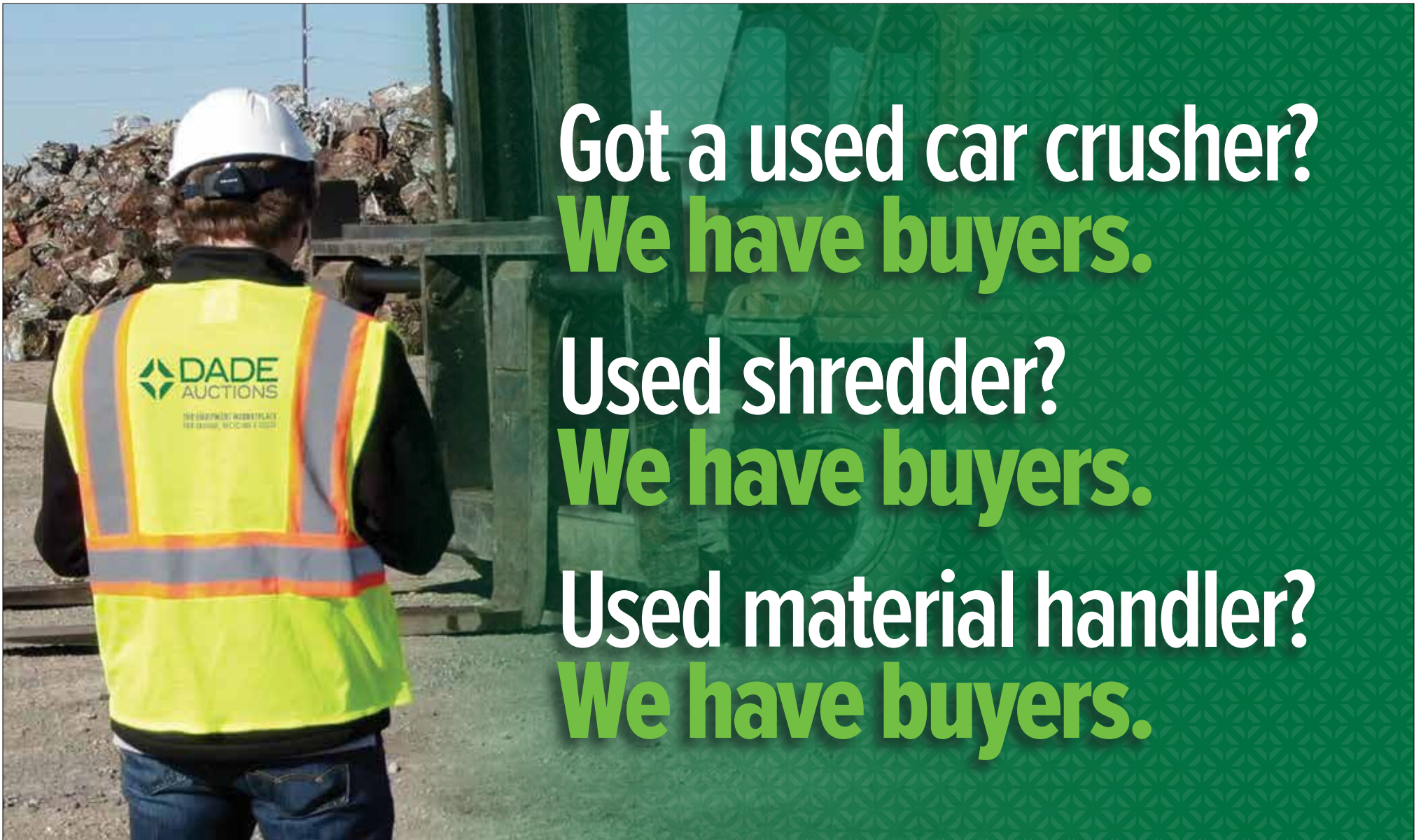
Smartville Inc., an EV battery-repurposing innovator, has been contracted to install a 500 kilowatt-hour battery energy storage system (BESS) at the Nissan North America headquarters in Franklin, Tennessee using second-life Nissan LEAF electric vehicle battery packs.

Smartville will install two of its Smartville 360™ BESS units populated with battery packs supplied by Nissan 4R Energy U.S.

The Smartville 360 BESS is a first-to-market turnkey system for repurposing EV battery packs from multiple automakers and vehicles, allowing customers

like Nissan to lower energy bills using a domestic and sustainable supply of retired batteries. Smartville 360 provides critical safety, proprietary controls, and data processing systems that enable repurposed EV battery packs to cost-effectively achieve a long second-life as stationary energy storage. The Smartville 360 building-block design is configurable for commercial, industrial, and utility-scale applications.

The Smartville 360 is expected to be installed and operational at Nissan's North American Tennessee headquarters by the second quarter of 2024.



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