



# Scrap Tire **NEWS**

Vol. 35 No. 12

Covering News & Developments in Tire and Rubber Recycling

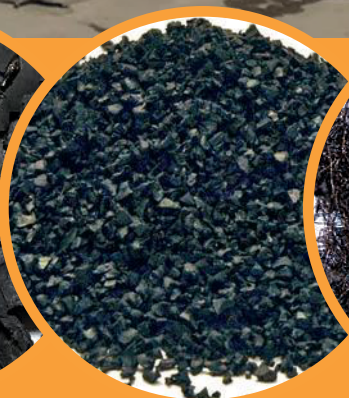
December 2021



Echo Block and Echo Flow recycled rubber concrete construction blocks provide a flat permeable surface on the new rooftop terrace on the Villa Acquilina Amenity Complex, Miami, Florida.



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## Tire CEOs Recognize Tire Industry Project Sustainability Achievements



CEOs of leading tire manufacturers recently convened online to review progress and confirm the ongoing mandate of the Tire Industry Project (TIP), a global CEO-led initiative undertaken by leading tire manufacturing companies to research potential human health and environmental impacts of tires throughout their lifecycle. TIP, founded in 2005, operates under the umbrella of the World Business Council for Sustainable Development (WBCSD) and is co-chaired by Bridgestone, Goodyear, and Michelin.

TIP member CEOs meet biennially to review project progress and approve a two-year work plan. The work plan is also reviewed by an Assurance Group of independent scientists who provide guidance on the scientific relevance and robustness of planned research.

Tire CEOs continued on page 7...

## Echo Rooftop Terrace Debuts in Miami

*The Echo Rooftop Terrace and Garden - a new and first-of-its-kind rooftop system - has 93 percent recycled content derived from shredded recycled tire material and repurposed concrete waste material*

Billed as “a world unto itself” the Estates at Acqualina, is a \$1.8 billion dollar residential oceanfront complex featuring condo, apartment, single-family and penthouse residences in two fifty-story high rise towers overlooking the Atlantic Ocean in Sunny Isles, Miami, Florida.



Nestled between the two towers is Villa Acqualina, a five-story

*The Echo Rooftop Terrace and Garden (shown center) is built on a base of recycled rubber concrete construction blocks topped with artificial turf.*

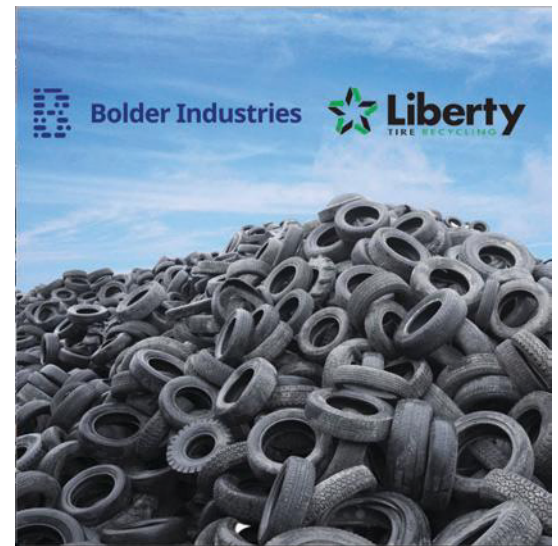
See Echo Terrace page 12...

## Bolder Industries Partners With Liberty Tire Recycling For Feedstock Supply

Colorado-based Bolder Industries, Inc. converts end-of-life tires into sustainable carbon black, petrochemicals, steel, and power, which it sells to rubber, plastic, and petrochemical businesses.

To meet its current contractual obligations for these sustainable raw materials, Bolder requires 60 million end-of-life tires annually for feedstock, which will gradually ramp up over the next 10 years.

Last month, Bolder completed a supply agreement with Liberty Tire, the largest end-of-life tire collection company in the U.S., collecting more than 200 million tires, to help meet its tire feedstock needs.



Bolder continued on page 5...

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**On the Cover:** Shredded Tire Inc.’s first major Echo rooftop terrace and garden project used recycled tire material from 12,000 scrap tires in its recycled rubber concrete construction blocks.

**Cover Photo:** Shredded Tire, Inc.



Editorial and Circulation Office:  
**Recycling Research Institute**  
P.O. Box 4430  
Leesburg, VA 20177  
(571) 258-0500  
FAX: (571) 258-0502

Advertising Sales Office:  
P.O. Box 2221  
Merrifield, VA 22116  
(571) 258-0500  
FAX: (571) 258-0502

Publisher/Editor:  
**Mary B. Sikora**  
mary@scraptirenews.com

Subscription Manager:  
**Helen M. Bedrin**  
sales@scraptirenews.com

Editorial Assistant:  
**Rachel Clark**

Advertising Manager:  
**Michael Sikora**  
mike@scraptirenews.com

Production Manager:  
**Amy D. Heath**

Special Projects Manager  
**Sidney Lindner**

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The Tire Industry Association, Bowie, Maryland is keeping its member informed about the latest developments and activities surrounding vaccine mandates and what tire dealers and other TIA members need to know. In its last weekly member update for November the Association outlined OSHA's Large Employer Vaccine Mandate and the uphill battle it faces.

The Occupational Safety and Health Administration (OSHA) has issued an Emergency Temporary Standard (ETS) that required employees of employers with 100 or more employees either to get vaccinated or to test negative on a weekly basis.

However, the U.S. Circuit Court of Appeals for the Fifth Circuit has issued a nationwide stay blocking the ETS from taking effect.

The court ordered OSHA to "take no steps to implement or enforce the [ETS] until further court order." In recognition of this ruling, OSHA has stated that it has suspended all activities relating to the implementation and enforcement of the ETS pending further litigation.

Challenges to the ETS have been filed in multiple federal circuit courts across the country. When there are multiple filings like these, a multi-circuit "lottery" system is utilized for purposes of consolidation and clarity. That lottery has chosen the Sixth Circuit, which is generally viewed as a favorable draw for OSHA vaccine mandate's challengers.

"We will provide updates as the Sixth Circuit issues any relevant orders," TIA executive Roy Littlefield said.

Regardless of the outcome in the Sixth Circuit, the U.S. Supreme Court will likely have the final word.

To be clear, the ETS in its entirety is currently blocked from enforcement on a nationwide basis, TIA said. If that changes, the association will send out an alert. ♦

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**Bolder** continued from 3...

"This supplier agreement provides Liberty with the highest and best possible use for the end-of-life tires it collects while supplying Bolder with a steady, reliable source of feedstock for the next decade," the companies said in a press statement. Tire companies, rubber manufacturers, plastic manufacturers, petrochemical chemical companies and, most importantly, the environment, benefit from this partnership, they said.

Bolder estimates this will contribute to 400 million lbs. of BolderBlack, 1.8 million bbls of BolderOil, and 100,000 tons of recycled steel, while reducing carbon dioxide emissions, water, and electricity usage by more than 90 percent. This is equivalent to removing 300,000 cars from the road each year.

"Liberty is in constant pursuit of the highest and best use of end-of-life tires. We have been investigating the chemical extraction business for many years and Bolder has proven to be a partner we can rely on to work with us and our customers on a large scale," Thomas Womble, CEO of Liberty Tire Recycling, said. "Bolder and Liberty are aligned in their goals to increase sustainability for waste tires and our new partnership will accelerate the growth and global expansion for both companies in this critically important space."

"Liberty Tire Recycling and Bolder Industries are here to provide full-scale opportunities to tire manufacturers who have committed to recycled content and sustainability goals. Bolder Industries is leading the solution for historically devastating end-of-life tire challenges. Our circular approach is what helps our customers meet their goals," Bolder Industries CEO Tony Wibbeler, said. Wibbeler referenced its partnerships with Liberty Tire Recycling, Tokai Carbon, Continental Carbon and Tauber Oil, saying these partnerships "unite the top brands in our industry to provide a closed-loop solution for the end-of-life tires without supply chain disruptions." ♦

## CalRecycle Waste Tire Enforcement Grants Available

The Department of Resources Recycling and Recovery (CalRecycle) has opened the application period for Local Government Waste Tire Enforcement Grants. The purpose of the grant is to provide sufficient, stable, and non-competitive funding to California jurisdictions for the enforcement of waste tire permitting, hauling and storage laws. The grant is open to cities, counties, or a city and county within California who received a waste tire enforcement grant in FY 2020-21 as well as new applicants—those cities and counties that did not receive a grant award for FY 2020-21. \$ 6,050,000 is available for this grant cycle, fiscal year 2021-2022 subject to funding availability. Applicants may request the maximum award amount allowed for their qualifying populations. ♦

Application deadline is January 13, 2022. More information at: <https://www.grants.ca.gov/grants/local-government-waste-tire-enforcement-grant-program-2/>

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# Rubber Recycling

## NEWS

### USTMA Advances Scientific Research

The U.S. Tire Manufacturers Association (USTMA) has launched an initiative to produce cryogenically milled tire tread (CMTT) and provide samples to researchers to advance scientific study on tire and road wear particles (TRWP), representatives from the industry said in a November 15 announcement.

“We know that researchers face limitations in trying to create representative tire and road wear particles for accurate scientific study,” Sarah Amick, Vice President EHS&S and Senior Counsel, USTMA, said. “To support researchers and advance their work, USTMA is using a standardized methodology to produce cryogenically milled tire tread,” she said.

CMTT is the product of a standardized and reproducible laboratory process that grinds (or mills) tire tread to simulate the tire particles normally generated by the friction between tires and road surfaces. CMTT is a mix of tiny rubber pieces that represent tire tread but do not contain chemicals or contaminants arising from pavement or any interactions with pavement. For researchers, CMTT offers a surrogate material that eliminates external contamination sources that make contact with tires during normal operational use. CMTT is not a direct replacement for the study of TRWP, but it allows researchers to isolate and focus studies on the tire tread component.

The methodology used for CMTT production was developed by the World Business Council for Sustainable Development’s (WBCSD) Tire Industry Project (TIP). TIP’s aim is to contribute to a more sustainable future by proactively identifying and addressing the potential human health and environmental impacts associated with the life cycle of tires.

“The Tire Industry Project created this methodology to support research on tire wear by providing a reliable and affordable material for lab experiments,” Anne Cécile Rémont, Director of TIP, said. “With more than a decade of experience researching TRWP and producing tire test materials we understand the scientific importance of representative test materials; CMTT is complicated and costly to produce, and we support efforts to remove barriers to the use of appropriate materials for TRWP research.”

Researchers interested in learning more about CMTT and obtaining a sample for research may submit a request at: [www.ustires.org/CMTT](http://www.ustires.org/CMTT). USTMA hopes to have CMTT samples available to ship to researchers by the second quarter of 2022. ♦

### Ecore Manufacturing Facilities Achieve Zero Waste Validation from UL

Lancaster, PA-based Ecore recently partnered with Underwriters Laboratories (UL) to complete a 2020 Zero Waste to Landfill audit for its Pennsylvania-based facilities in Lancaster and York. As a result, UL has officially validated the following claims for these Ecore production sites:

- The Lancaster, Pa., facility achieved a 99 percent Landfill Diversion rate, with 22 percent waste diversion with energy recovery.
- The York, Pa., facility achieved a Landfill Diversion rate of 100 percent, with 22 percent waste diversion with energy recovery.



*Ecore’s state-of-the-art equipment and manufacturing process reduce in-plant processing waste*

“This is a huge milestone in our company’s pursuit of a more circular economy and a world free of rubber waste,” Art Dodge III, CEO and president of Ecore said. “We like to say that Ecore was born ‘green’ and, as an industry leader in recycled products technology, these validations reinforce our commitment to reducing our environmental impact.”

As the global safety science leader, UL helps companies to demonstrate safety, enhance sustainability, deliver quality and achieve regulatory compliance, while enhancing consumer confidence and peace of mind.

The UL Environmental Claim Validation Mark communicates to purchasers that products have been evaluated by an objective third-party and independently proven to have been manufactured and/or to perform in accordance with the manufacturer’s environmental claims. UL uses rigorous scientific analysis to determine the accuracy of sustainability claims, and products bearing the UL Environmental Claim Validation Mark must undergo routine audits and testing in order to retain their validation status.

“Our products are manufactured in state-of-the-art facilities with a focus on continually improving efficiency, sustainability, and responsible resource management,” Dodge said. “Furthermore, Ecore’s manufacturing process has virtually no waste – scrap material from production is collected and recycled back into our system because rubber can be continually recycled and does not degrade through the recycling process like other materials such as paper or plastics.”

Ecore has been transforming reclaimed scrap tire rubber and other reclaimed materials into performance products since the company’s inception in 1871. ♦

**Tire CEOs** *continued from 3...*

In their review of the 2020-2021 work program, CEOs commended TIP on delivering its work plan despite the pandemic, and in particular, the publication of a sustainability roadmap for the tire sector.

*Sustainability Driven: Accelerating Impact with the Tire Sector SDG Roadmap*, was published in May 2021 by TIP member companies in consultation with value-chain stakeholders. The Roadmap identifies how the tire value chain interacts with the UN's Sustainable Development Goals (SDGs); the areas where the tire sector can have the most significant impact; and, key actions to scale and accelerate contribution to the SDGs.

With the publication of the 2021 edition of the TIP report on environmental key performance indicators (KPIs) for tire manufacturing, the CEOs reiterated their expectations that the Roadmap makes important contributions to sustainable mobility and requested that ongoing KPI reporting is adapted to contribute to measure company progress toward the SDGs.

The CEOs, who represent more than sixty percent of the global tire manufacturing capacity, recognized TIP's progress in tire and road wear particle (TRWP) research and communication, underlining the importance of a new website that shares all TIP TRWP research and provides an accessible multimedia intro-

duction to the topic. CEOs went on to note the significance of recently published TIP-sponsored research, including a chemical mapping study.

Acknowledging recent important growth in scientific interest in TRWP, the CEOs confirmed that improving the scientific understanding of TRWP remains a TIP high priority. The CEOs went on to validate a TRWP work plan for 2022-2023, building on more than a decade of TIP-sponsored TRWP research and featuring continued exposure and hazard assessments – including field sampling, assessment of tread leachates, and the potential for bioaccumulation. The work plan will also see further development of scientific methods and standards for TRWP research that will be of benefit to the scientific community.

Praising a series of successful end-of-life tire (ELT) management-stakeholder workshops and the landmark publication of the TIP Toolkit for ELT management, CEOs reconfirmed that TIP should continue to publish state-of-knowledge reports on ELTs and further engage stakeholders to foster global-level improvement in sustainable ELT management. Toward these aims, the CEOs approved plans for improved ELT-data collection and the establishment of a digital platform to share ELT data and support the exchange of good practices between ELT stakeholders. ♦



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# American Tire Distributors Releases Inaugural ESG Report

*Leading independent tire distributor shares vision to pivot the industry toward a more sustainable future*

In releasing its first Environmental, Social, Governance (ESG) report North Carolina-based American Tire Distributors (ATD) commits to identify opportunities and invest in solutions that are designed to improve its holistic community impact while delivering unmatched customer service to the entire replacement tire ecosystem.

As a critical connector between manufacturers and retailers, ATD also encouraged others in the industry to embrace ESG. "Historically, the tire replacement industry has lagged other sectors in taking responsibility for its community impact," ATD's press release said. The company is changing that by assertively leading the industry toward a better, more sustainable future, Stuart Schuette, ATD President and CEO said. "We consider ESG to be a key factor driving business resilience, and as a leader in the industry and tire replacement ecosystem, we serve as a critical and expeditious link between manufacturers and customers of all types," he said.

ATD's ESG effort began in 2017 with the creation of its Sustainability Committee, which consulted with Sustainalytics to assess ATD's ESG standing. In its first report on the Company, Sustainalytics gave ATD a low-risk rating, ranking the Company 140 out of almost 13,000 companies and fourth among

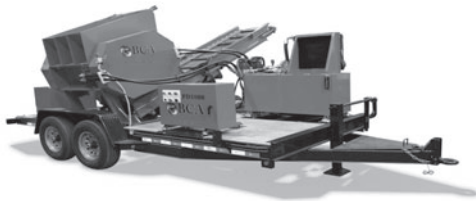
36 retailing distribution companies studied in 2020.

"The overarching goal of our sustainability initiatives is providing superior service while lowering our carbon footprint," Schuette said.

At ATD, environmental measures focus on direct reductions in greenhouse gas (GHG) emissions, energy use, and waste. The Company aims to reduce its overall operational greenhouse gas (GHG) emission by 25 percent by 2030 and reduce its carbon footprint by replacing carbon-based energy sources with renewable sources.

The social aspect is driven by the philosophy that to achieve its purpose—to help its customers thrive and drive into the future—ATD must first understand, empower, and nurture the human capital within the company. ATD's social goal is centered on careers, culture, and the community, which extends to active engagement and support of the communities it serves.

Good governance is a fundamental principle at ATD and encourages a culture of transparency, legal compliance, and ethical conduct. The Company reinforces this commitment through training and firm accountability measures. ♦



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## New Recycled Rubber Surface To Replace Mulch

*The City of Cassville, Missouri will use a \$40,000 grant from the Missouri Department of Natural Resources (DNR) to construct a new playground surface using recycled vehicle tires.*

Cassville's project will replace the wood mulch surface at the Downtown Park playground with a poured-in-place recycled rubber product to improve safety and accessibility. The engineered surface will provide greater protection for the fall heights of the playground equipment. The firm, level surface meets accessibility standards for disabled children and their guardians, city officials said.

Also, the new recycled rubber surface is not susceptible to weed intrusion, mold or fungus, reducing maintenance costs and upkeep.

From an environmental standpoint, the project is expected to re-purpose over 14 tons of Missouri scrap tires, DNR officials said.

The new rubber surface is expected to be installed in late spring 2022. ♦



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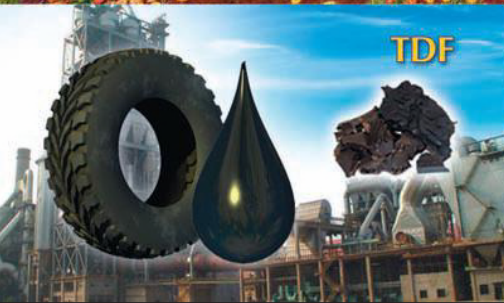
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# Ecolomondo Nears Start-up Of Hawkesbury TDP Plant

Montreal, Canada-based Ecolomondo Corporation, a cleantech company specializing in the development of proprietary recycling technology, Thermal Decomposition Process (TDP), and the commercialization of turnkey TDP facilities, recently reported that it expects commercial operations that include end-of-life tire crumb rubber and carbon black processing will launch before year-end.

As the facility nears completion, all major mechanical assembly and installation is in place and the facility's power grid is nearing completion, with testing of carbon black and crumb rubber processing equipment, along with thermal decomposition and oil fractionation equipment, to soon follow.



*Ecolomondo's Ontario-based Hawkesbury plant is ready to begin commercial operation of its tire crumb rubber and carbon black processing units*

On the heels of its previously announced \$3.4m multi-year tire feedstock supply contract, Ecolomondo is also negotiating offtake agreements with buyers of oil, steel, fiber and recycled carbon black. According to the company, the Hawkesbury project costs and cash flows continue to remain within the guidelines of loan covenants with Export Development Canada (EDC). Total estimated budget for the Hawkesbury TDP turnkey facility stands at approximately \$38.375 million, of which approximately \$32.125 million comes from the loan facility from EDC and the balance of approximately \$6.25 million from Ecolomondo, which has already been contributed.

The plant will consist of four different departments: shredding, thermal process, recovered carbon black processing and oil distillation, with the ability to operate around the clock, year-round. The facility is projected to generate annual revenues of over \$10 million with an EBITDA of over \$5 million in its first full year of continued operations. Eliot Sorella, Chairman and Chief Executive Officer of Ecolomondo believes Hawkesbury will be the first-of-its-kind and uniquely positioned in the waste processing space.

"Our Hawkesbury facility is both innovative and trend setting, and should set the standard for the global tire pyrolysis industry. I believe it will solidify our position in the market place," he said.

"Designed and built to manufacture recycled end-products of the highest quality, the Hawkesbury TDP turnkey facility is expected to process 14,000 metric tons of crumb rubber per year, yielding 5,300 metric tons of recycled carbon black, 42,700 barrels of oil, 1,800 metric tons of steel, 850 metric tons of fiber and 1,600 metric tons of syngas. ♦

# New Subsidiary Will Drive Expansion Plans

*Company looking at international growth in 2022*

Ecolomondo has launched Ecolomondo Process Technologies Inc., (EPT) a new waste-to-energy engineering subsidiary specializing in biogas upgrading, hydrogen production and CO2 capture.

Calling the formation of Ecolomondo Process Technologies a key milestone for the company, Ecolomondo chairman and chief executive officer Eliot Sorella said the new subsidiary will help chart a clear path forward in executing the company's international TDP facility expansion plans.

"We're aggressively building out top-notch engineering and construction management teams, but we're also immediately capitalizing on new client opportunities to test different equipment, engineering services and even feedstocks in our pilot facility, integrating tailored operational conditions based on a customer's unique situation and needs. It's a value-add to them, and a highly valuable addition for Ecolomondo shareholders," he said.

EPT offers turnkey solutions to clients and performs engineering services, installation and commissioning of waste to energy plants along with skid fabrication of gas purification, separation and upgrading.

Ali Alizadeh, a renewable energy and petrochemical engineering specialist with over 20 years of experience in the sector recently joined the firm as Chief Technology Officer and will lead the new wholly owned subsidiary, Sorella said.

"Ali has a tremendous track record of leading projects from pilot scale through to full commercialization, taking a hands-on approach to everything from engineering design and equipment fabrication to equipment installation and plant commissioning," Sorella said. ♦



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**Echo Terrace** *continued from 3...*

45,000 sq. ft. amenity complex housing a health and fitness sanctuary, Circus Maximus, a speakeasy and world class restaurant with unobstructed ocean views. Topping it all is Echo Rooftop Terrace and Garden—a new and first-of-its-kind rooftop system with 93 percent SCS Global-certified

recycled rubber to concrete. It could be poured, molded and handled like concrete and at the same time result in construction products that were lighter, stronger and more economical than conventional concrete products. Also, recycled materials were being recognized

for their environmental benefits and builders were requesting more garden roof areas to help with Green Building LEED credits.

“All the major projects were taking roofs from just being roofs to playgrounds, bars, dancefloors, tennis courts and more,” Spreen said.

After several years of development, Echo Block and Echo Flow were created using a patented custom blend of recycled tire rubber and concrete waste material.

Spreen said he’s most proud of the size of the tire material used in the mix. “We use playground grade tire chips derived from passenger tires,” he said. They take a lot less energy to produce and have the buy-in of scrap tire processors in Southern, Florida.

All the steel is removed and recycled. From the manufacturing/product development side, the nylon strands protruding from the tire chips are where the magic happens, Spreen said. “We mix them with the three different types of cement—silica flume and cement slag, both of which are waste concrete products, and Portland cement. It’s about a third, third, third of each,” he said. The cement flume and slag not only increase the waste content and decrease the need for so much Portland cement, they add strength to

the product, he said.

Shredded Tire mixes this three-cement custom blend in dry form with the tire chips. The nylon strands on the frayed textile edges receive the cement mix very well, impregnating the cement mix in the nylon. Droplets of water are added to the dry mix as it spins in the mixer and after about three minutes it froths and becomes stationary on the nylon and the rubber tire material.

This mixture is taken out of the mixer and poured into molds to form Echo Block and Echo Flow construction blocks which are used as a base for beautiful rooftop terrace/gardens,” Spreen said.



*Workers installed Echo Blocks on the rooftop terrace to create a solid, flat, permeable walking surface.*



*Echo Flow recycled rubber concrete blocks provide superior drainage on the rooftop terrace.*

ified recycled content derived from shredded tire material and repurposed concrete waste material.

Echo Rooftop Terrace and Garden is the product of Fort Lauderdale, Florida-based Shredded Tire, Inc., a seven-year old company founded by roofing and construction specialist Richard Spreen. Inspired by news reports several years ago showing discarded tires from a failed reef lying on the ocean floor off the coast of Fort Lauderdale, Spreen combined his building and roofing expertise with his desire to find a practical solution for scrap tires.

With more than thirty-one years in the roofing and construction industry and an extensive knowledge of construction materials, Spreen recognized the benefit of add-

“One of our first rooftop garden projects out of the gate is the Estates at Acqualina—one of the largest projects in Miami”, Spreen said.

Construction on the 8,000 sq. ft. rooftop began in late 2019 but with the pandemic intervening, was completed in August 2021.

“The grass covered Villa Roof looks like it was always destined to be there. It is a compliment to all the other spectacular exterior finishes on these extraordinary twin towers,” Suprema USA, a waterproofing supplier to the project said.

To build the rooftop terrace, a waterproof membrane was applied to the concrete slab followed by insulation panels. Shredded Tire installed a base layer of sloping insulated 2 ft by 2 ft Echo Blocks topped with a layer of reverse sloping, permeable Echo Flow blocks to create a flat walking surface through which water then flows and goes to drains installed under the permeable Echo Flow block layer, keeping the drains out of sight and the roof terrace aesthetically pleasing. This is topped with artificial turf or tile to maintain the flat walking surface.

The overall design allows Echo blocks to be removed to create a functional green roof with set-in planting areas, seating and other amenities, Adnan Velic, Technical Director at Shredded Tire, said.

“The most interesting attribute to the roof system is the fact that the finished walking surface is both flat and permeable,” he said.

The Estates at Acqualina project recycled and repurposed 12,000 scrap tires in the Echo Roof Terrace and Garden.

Echo Roof Blocks have been tested and approved to resist hurricane force winds, are moisture resistant, mold and bug resistant, have a tested uplift strength of -502.5 PSF, a safety factor of 2 and qualify for LEED credits by bringing 93 percent recycled content to roofing components that presently have zero percent recycled content, Velic said.

All of the blocks are Dade County NOA (Notice of Acceptance), approved for concrete and steel decks and have a class A Fire Rating by UL.

Spreen said the company spent two years developing the Echo construction products, followed by three years of testing that resulted in two U.S. patents and two Miami Dade NOA

Earlier this year, the European Union (EU) approved 20 of 20 Shredded Tire claims submitted for a patent. “The EU patent expands our global reach and opens up licensing opportunities for manufacturing, distribution and marketing of the entire product line”, he said

Shredded Tire also holds patents for its products in Canada, South Africa, Israel and Australia. ♦

## Company Introduces New Pyrolysis Technology

Pittsburgh, PA -based Smart Tire Recycling (STR) has developed and patented a new method of recycling tires into high quality carbon black and oil using supercritical pressure and temperature water technology.

The company claims this new sustainable method corrects the weaknesses of previous pyrolysis attempts, allowing for faster, continuous production and an improved yield of rCB.

STR's business model is to build, own and operate plants, using a robust and completely continuous process of recycling used tire rubber into high quality carbon black and oils. A recent investment report said the plants will be placed at strategic locations throughout the world.

Revenue model is based on selling the products (carbon black and oils) to manufacturers of tires, rubber and plastic-based products. One commercial plant has a yearly capacity of producing 8,300 tons of carbon black and 3,760,000 gallons of oil, the company said.

The technology has been proven on a lab scale. A pilot plant is being assembled to optimize the process at a larger scale.

The Smart Tire team is made up of engineers and scientists as well as finance professionals and is led by CEO and Founder Mendel Bassman, a veteran of the recycling industry.

Board member Raymond Riek has more than 30 years of experience with Monsanto Co. where he was the director of the company's technology, rubber, and process chemicals division.

Lacramioara Schulte auf'm Erley, a Ph.D. who serves as the company's chief technology officer, started her career as a chemical engineer in the tire industry.

Germany-based Martin Von Wolfersdorff is a pyrolysis expert and serves as a consultant to the STR team.

Smart Tire Recycling has already raised more than \$750,000 in its first regulation crowdfunding campaign. The company is currently involved in a second crowdfunding campaign that has raised more than \$280,000 so far. The campaign involves up to seven tiers of investment with varying degrees of perks depending on the size of the individual pledge. ♦

# Colorado Waste Tire Program

*Latest status report covers state markets, what the pandemic did and future reporting changes*

Calendar year 2020 marked the seventeenth year the Colorado Department of Public Health and Environment (CDPHE) has compiled data related to waste tire recycling, waste tire funds and the status of Colorado's Waste Tire Program. The 2020 report reflects how the state program

funds to the state budget. This resulted in End User funds (rebates) not being issued until the fourth quarter of 2020.

On the upside, the 2019 legislation also brought back funding for market development, allowing the department to assist in developing sustainable Colorado markets for the end use of waste tires and tire-derived products through research, testing and project pilot grants as well as grants for educational programs and events. However, like the End User Fund, this funding was not available until the fourth quarter of 2020.

To fund these programs, the waste tire fee on the sale of new motor vehicle and new trailer tires increased from \$0.55 to \$1.25 effective January 1, 2020.

The report presents the top ten uses of recycled waste tires in the state in 2020. Tire-derived fuel remained Colorado's top recycled waste tire end use. The COVID-19 pandemic appeared to affect the salvage tire market the most and for the first time in three years, salvaged tires (reuse/retread) was not the number two use, the report said.

The biggest end use increase was the use of tires for fence/windbreaks and alternate daily cover. In 2020, fence/windbreak use increased by almost 1.5 million tires over 2019 and alternate daily cover increased by over 900,000 tires.

In 2020, the total number of newly generated waste tires in Colorado and imported from surrounding states was 6,297,229, a 15 percent decrease from 2019, mostly due to the pandemic, the report said. Colorado sent one percent of these waste tires to Utah for recycling. The remaining tires and others from storage inventories were recycled or salvaged in the state resulting in 122 percent recycling/salvage rate for newly generated/imported tires in Colorado in 2020.

and tire recycling in general fared as the pandemic took hold in Colorado and nationwide.

According to the report, the COVID-19 pandemic affected waste tire generation and reuse rates, new tire sales, and the number of inspections conducted by the department and county contract inspection partners.

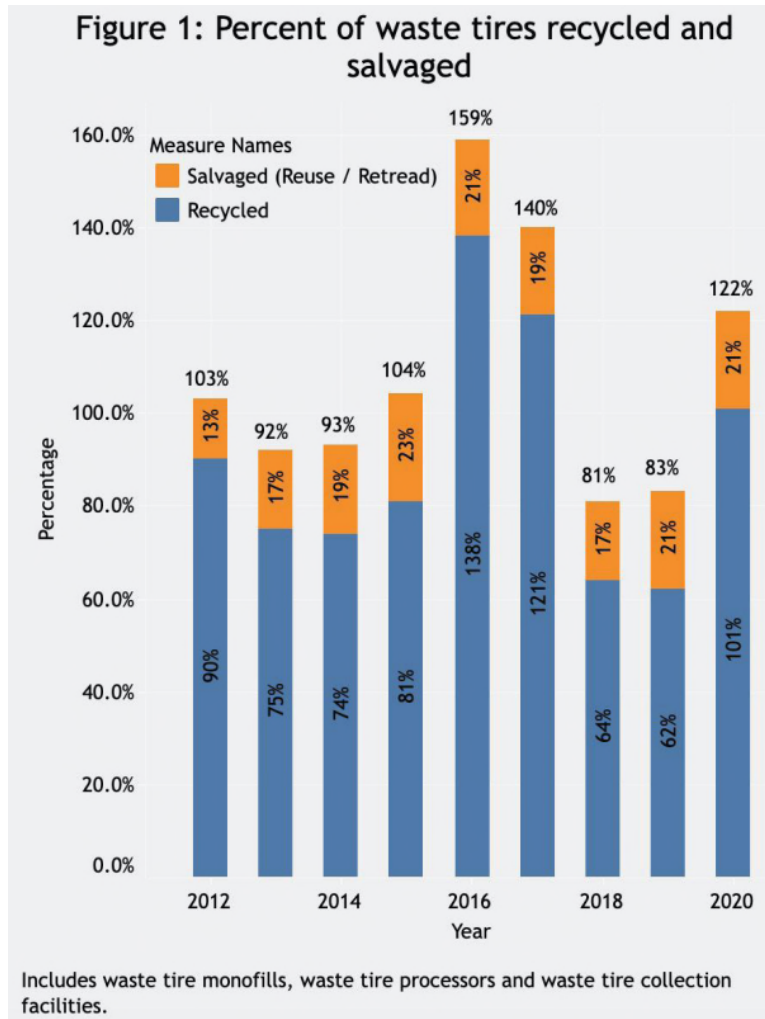
The re-instated Waste Tire End Users Fund, with a goal of increasing the end use of waste tires and reducing storage inventory by providing rebates for in state end users and retailers of tire derived products, was set to become active effective January 1, 2020. But the pandemic intervened.

Due to the economic downturn brought on by the COVID-19 pandemic, the 2020 legislature transferred End User

Even with COVID-19, waste tires continued to be processed and end used, resulting in a steep decline in waste tire storage inventories, CDPHE said.

In 2020, the department identified 74 potential illegal waste tire sites in the state and completed cleanup of ten illegal waste tire sites removing a total of 23,340 waste tires in seven counties throughout the state.

With inspections down due to COVID 19 restrictions, program staff conducted 107 inspection and compliance visits. Of these, 46 waste tire generator facilities were evaluated. Looking ahead, the agency expects to offer rebates in 2021 from the now reinstated Waste Tire End Users Fund, to help expand the end use of waste tires in the state and continue to bring down storage inventories.

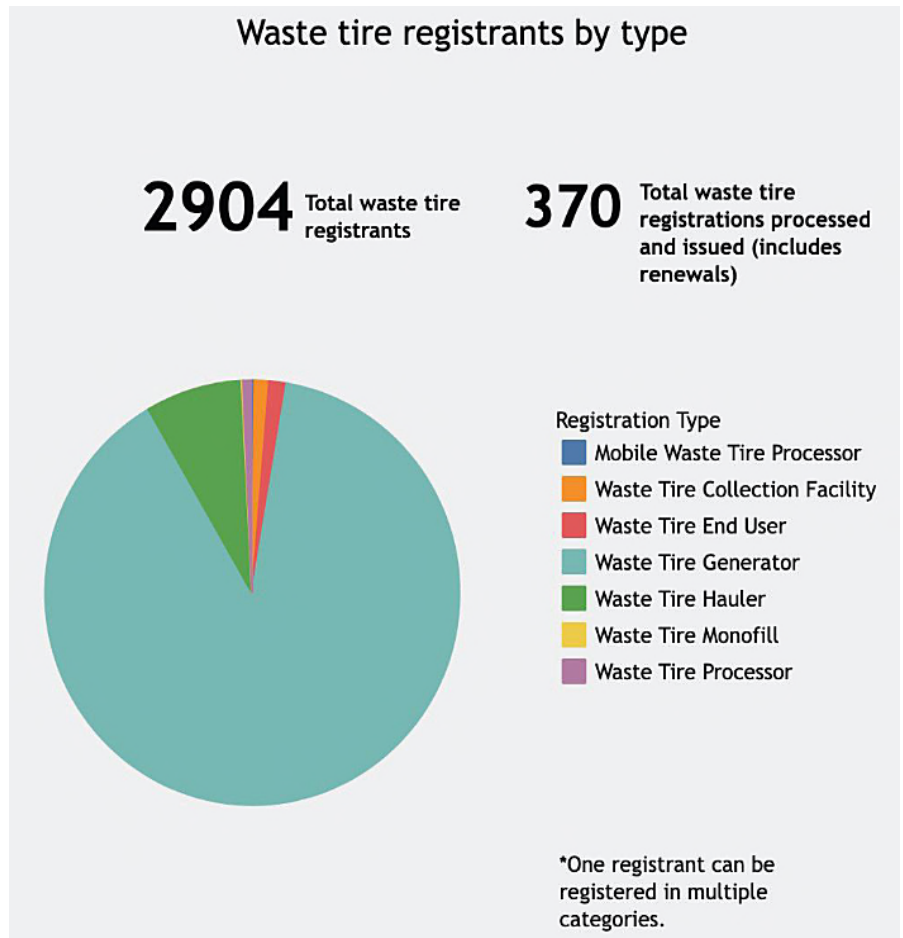


Also, going forward, CDPHE is examining how it calculates its waste tire data. Currently, the department uses a nationally recognized standard to convert tons into passenger tire equivalents (PTEs).

For the 2020 report, CDPHE used the U.S. Tire Manufacturers nationally recognized standard of 22.5 pounds per passenger tire equivalent (PTE) conversion, a figure which was developed more than twenty years ago based on the “then” combined average weight of a passenger and truck tire.

In May 2021, the report notes the Environmental Advisory Association updated the coverage waste tire passenger and light truck tire weight to 25 pounds.

Based on this new 25 pound PTE conversion formula, CDPHE calculated its 2020 data for comparison, resulting in an approximately nine percent decrease in the 2020 numbers. CDPHE said it will look at using the 25 pound PTE for Colorado’s 2021 Status of the Waste Tire Program Report. ♦



# SmartMIX™

## Liberty Tire Recycling SmartMIX™ – Asphalt Additives

SmartMIX utilizes **Sustainable Materials & Asphalt Rubber Technologies** to produce high-performing paving materials with greater durability and flexibility.

Liberty’s line of SmartMIX\* Asphalt Additives perform equivalently to Polymer Modified or Wet Processed Rubber mixes – in an easy to use, next generation dry process. Incorporated into the mix through a RAP collar, a cold feed bin, or via a modified fiber blower, SmartMIX’s high-performance characteristics also allow for an increase in RAP%, saving money, and improving performance counteracting mix stiffness and brittleness from the RAP.



### HOW DOES IT WORK?

SmartMIX utilizes Reacted Rubber Particle Technology (R2PT) to pre-swell & react rubber with liquids such as; asphalt binder, extender oils, warm-mix waxes, liquid anti-strip, rejuvenators, or other agents. In addition, R2PT can be used to coat rubber with additives such as latex emulsion, or to homogeneously combine other dry powders such as cement or lime



FIGURE 1  
Rogers, Arkansas:  
SmartMIX parking lot application.



FIGURE 2  
East Lansing, Michigan  
(L) Superpave 5E Mix  
(R) Same recipe utilizing SmartMIX



SmartMIX asphalt additives are available in the US & Canada. For more information, or to arrange your project, contact **Doug Carlson, VP Asphalt Products** (602) 751-6039 or [dcarlson@libertytire.com](mailto:dcarlson@libertytire.com) [www.smart-mix.libertytire.com](http://www.smart-mix.libertytire.com)

\*SmartMIX is produced under license by the R.O.A.D. Company, inventor of Mix-Maxer



### SmartMIX Quick Facts:

Customers in the United States & Canada count on Liberty every day.

- ⊗ Easy to use, on/off production – No Waste
- ⊗ Cost Effective – Jobs Large or Small
- ⊗ Performance – Similar to Polymer Modified in a Dry Additive
- ⊗ Increase RAP Content – Simply add to the Mix with RAP
- ⊗ Fine Grind – Dense Graded Mixes
- ⊗ Closed-Loop Recycling – 10 lbs. of Recycled Tire Rubber for every Ton of Mix

SmartMIX utilizes Sustainable Materials & Asphalt Rubber Technologies to produce high-performing paving materials with greater durability and flexibility.

## ETRMA and EuRIC Seek End-of-Waste Criteria For ELT-Derived Rubber

*End-of-waste (EoW) criteria for rubber recovered from end-of-life tires (ELT) is being urged as a crucial step to boost tire recycling across Europe.*

Recyclers contend that rubber granulate/powder from ELT meets conditions in the European Union's (EU) Waste Framework Directive making it an ideal candidate for an EU-wide EoW criteria as supported by the tire value chain.

'Due to the intensive collaboration of all the actors along the tire production and recycling chain, there are no conflicts of interest that would hamper or delay the introduction of EoW for ELTs,' say the European Tyre & Rubber Manufacturers Association (ETRMA) and EuRIC, the umbrella organization for more than 5 500 recycling companies in Europe.

"The rubber supply chain is ready for the next step in the advancement and uptake of the recycling of ELT-derived rubber," the Associations said.

In a joint call to the European Commission, the organizations argue that shared legal criteria across all member states for ELT rubber to cease to be waste are essential. "This will add trust to the market, increase investors' security and boost the research and development on innovative solutions of this valuable rubber," they said.

ETRMA and EuRIC note that the current rate for treating ELT across Europe is 95 percent. Of the three million tons reaching this stage, 1.6 million tons are recycled into raw materials of rubber, steel and textile fibers. With more than one million tons currently used for co-incineration in the cement industry and they say there is room for improvement under the waste hierarchy. "The demand for rubber in the EU will only rise in the future and the only way to meet that demand is by the increase and uptake of recycled materials," the organizations said.

"The industry is still in need of a maturity step, which ETRMA and EuRIC agreed can only be achieved by adding value to the system in terms of an EU-wide EoW status.

Another key point is that such a status ensures the recycled material is accountable for safety and quality criteria. Many regulations, such as the Declarations of Performance for construction products or the REACH restriction of chemical substances, apply only once the material has ceased to be waste. 'This is of tremendous importance to increase the uptake of ELT derived rubber in the manufacture of new rubber goods and new tires.' ♦

Source: ETRMA

## UK Tire Recycler Receives Innovation Grant

UK clean-tech recycling company Big Atom plans to use a £350,000 (US\$470,000) grant from Innovate UK to further develop its patented chemical reactor technology used to convert end-of-life tires into new materials.

Company founder, Alexander Guslisty, said that the grant would enable the business to develop the concept of a novel pyrolysis reactor with improved temperature control and efficiencies to create a sustainably advanced regeneration process for polymers.



*UK tire processor Big Atom extracts two grades of tire wire from its end-of-life tire processing operation*

"We already recycle tires and have just processed our one millionth, but this Innovate UK grant will accelerate our tech development and bring us closer to create circular economy for polymers," Guslisty said.

"It is a huge breakthrough and will open up new opportunities that will accelerate our IP and pathway to commercialization," he said.

The company shreds and granulates tires at its tire recycling plant in Northwest England to produce feedstock for the pyrolysis reactor, which converts the tire material into reusable forms of oil, gas and recovered carbon black.

"We will be able to generate higher yields of valuable products compared to existing reactors and ultimately, we'll be able to produce a more stable and desirable product for refineries to use as their feed," Guslisty said.

Innovate UK, the UK's innovation agency, drives productivity and economic growth by connecting businesses to the partners, customers and investors that can help them turn ideas into commercially successful products and services and business growth. ♦



## New Refinery To Turn Used Tires Into Advanced Biofuels

Spanish trading company Nexolub and tire recycling firm Life for Tyres (L4T) have announced a 10-year off-take agreement for the supply of renewable biofuel to be produced at a new recycling plant under construction in Puertollano, Spain.

The project, due to be completed in December, will be one of the biggest of its type in Europe with an annual yield of up to 10,000 tons of the new advanced hydrocarbon.

L4T said the E30 million plant will begin production of 10,000 tons / year of waste oils, made from end-of-life tires, in the first quarter of 2022. The recovered oils can be used as an advanced biofuels feedstock in the petrochemical, marine and aviation industries, Marc Monllau, CEO of Nexolub, said.

"This agreement, the first with Life for Tyres, allows us to offer solutions linked to the circular economy, a product in growing demand due to the transition momentum that the hydrocarbon sector is going through.

The new advanced biofuel is a renewable and circular liquid made by L4T that will be International Sustainable Carbon Credit (ISCC) certified and meet the legal requirements as an advanced biofuels feedstock under annex IX of the EU's recast Renewable Energy Directive.

Located in the La Nava industrial estate in Puertollano, Spain, Life for Tyres plans to start up the plant at the beginning of January, where 38 direct jobs and 250 indirect jobs will be created and which has required an investment of almost 30 million euros.

In addition to advanced biofuel, the plant will produce high quality raw materials such as recovered carbon black (rCB), recycled steel and Syngas.

L4T and Nexolub estimate that the offtake deal will be worth E100 million.

L4T plans to construct two more waste oil plants in Spain, one in Guardo, in the northern Castilla-Leon region and the other in Tenerife in the Canary Islands.

The company is also looking at building four plants outside Spain – one in Ecuador, one in Japan and two in Germany. Mexico is also on the drawing board, the company said. ♦

## Pyrum Begins Construction On Pyrolysis Plant Expansion

Pyrum Innovations has begun expanding the production capacity of its pyrolysis plant at the company's headquarters in Dillingen/Saar.

Currently the plant consists of one production line, which has been operating on an industrial scale since May 2020, producing pyrolysis oil, recovered carbon black and pyrolysis gas from more than 7,000 tons of end-of-life tires. The addition of two more production lines will triple processing capacity to approximately 20,000 tons of end-of-life tires per year. Excavation work for the foundations has already begun on the plant site. In addition, key components of the new plants have been ordered on a binding basis, Pascal Klein, CEO of Pyrum Innovations AG said.



*New production lines will be installed at Pyrum's expanded pyrolysis plant in Dillingen Saar, Germany*

"With the groundbreaking for the new production lines, we are fully on track with our growth strategy and are making further progress towards a sustainable circular economy. The two new reactors will help us considerably to meet the high demand for our products from our partners, including BASF, Continental and Schwalbe," he said.

Pyrum has long-term agreements for resource off-take with BASF, Continental, Pirelli, Michelin and others. Under the agreements, BASF has most of Pyrum's pyrolysis oil while Continental and Michelin supply tires to Pyrum and buy its recovered Carbon Black and rubber pellets.

In addition to the existing pyrolysis reactor, two new towers, rack about 25 meters in height, are being built. Using Pyrum's patented technology, the reactors convert rubber granulate from end-of-life tires into pyrolysis oil, gas, and recovered carbon black (rCB), which in turn are used by Pyrum's customers as raw materials in the production of new products. The energy required for the process is generated from the recovered gas with the help of a connected combined heat and power plant, rendering Pyrum's pyrolysis process 100 percent energy self-sufficient, the company said. ♦

## Enviro Moves Closer to Second Plant in Sweden

Scandinavian Enviro Systems (Enviro) reports it has submitted an application for a tire recycling plant to be located on an industrial site in has decided on the final location in Lillesjö, in the municipality of Uddevalla, Sweden. The application is for building a recycling plant with an initial annual recycling capacity of 30,000 tons of tire material, with a long-term plan for the Uddevalla facility to process up to 60,000 tons per year. As Enviro previously announced, a final decision on the establishment of the new plant is also dependent on several other factors, such as securing access to end-of-life tyres and agreements covering deliveries of recovered materials. The company still expects the new facility in Uddevalla to be completed during the fourth quarter of 2023.

Since 2013, Enviro has operated a wholly-owned recycling plant at Åsensbruk, in Mellerud Municipality, with a permit for recycling a maximum of 15,000 tons of tires per year. Enviro recovers carbon black, oil and steel from tires through its own patented recovery process. The carbon black recovered at the facility in Åsensbruk recently became the first in the world to be certified under the International Sustainability & Carbon Certification system (ISCC). The recovered oil from the facility is also ISCC certified, the company said.

A final decision on the establishment of the new plant is dependent on securing access to end-of-life tires and agreements covering deliveries of recovered materials, Enviro said. The company still expects the new facility in Uddevalla to be completed during the fourth quarter of 2023. ♦

## Genan Adds Energy Surcharge

Genan, Europe's largest mechanical tire recycler reports it has been monitoring escalating energy prices and continues to see the impact of increased pricing on its business model. As a result, Genan has separated energy charges from its price list and will show a quarterly adjusted price scale for energy in addition to the materials cost.

CEO Poul Steen Rasmussen says; "Energy prices have been skyrocketing for quite some time, and at Genan, CEO Poul Steen Rasmussen said. " We have absorbed these tremendous extra costs through 2021. However, we cannot continue down this road. The Circular Economy requires energy so that end of life products can be transformed into new recycled raw materials, and the recycling industry cannot carry the burden alone.

"As of 2022, we thus have to pass part of this bill in the form of a variable energy surcharge."

"If the skyrocketing electricity prices were to be reflected in these annual adjustments, we would have to implement considerable price increases, the way things look now," Rasmussen said. "Price adjustments would be out of proportion with cost levels if electricity prices were to normalize. Such a situation would not, in our opinion, be justifiable to our customers. Yet, we do not know when things will return to normal," he said.

"For the sake of our customers, we have decided to keep energy costs separate from the calculation of our normal price adjustment for 2022 – which will include everything else but electricity. Instead, we will introduce a variable energy surcharge."

The energy surcharge will be adjusted on a quarterly basis. ♦



# STN News Briefs

... The **U.S. Tire Manufacturers Association (USTMA)** commended the final passage of H.R. 3684, the Infrastructure Investment and Jobs Act (IIJA), saying the bill makes the long-awaited, generational investment in American infrastructure that enables the United States to uphold commitments made on climate change and to bolster resiliency efforts throughout the nation. Important provisions in the legislation also support the advancement of scrap tire markets through research on innovative pavement materials and stormwater control systems, the Association said. As the IIJA Jobs Act moves forward, USTMA which has been actively engaged with Congress on the infrastructure package since May will be collaborating with Congress to ensure innovative technologies like rubber modified asphalt and tire derived aggregate are available for integration into sustainable infrastructure projects that will benefit the entire nation," Anne Forristall Luke, USTMA president and CEO said.

... **Detroit police** arrested two suspects last month for illegally dumping more than 100 tires in one day in a Detroit neighborhood. The men were caught on hidden cameras making multiple trips to the neighborhood. Authorities are seeking charges against the men. Each man was also fined \$10,000.

... **Tire and Rubber Association of Canada** received a 2021 Award of Distinction from the Canadian Society of Association Executives for its new website design. The new bilingual website is designed to provide clear insights into the latest developments in the Canadian and global tire and rubber industries, TRAC President and CEO Carol Honchu said.

... The organizers of **RAR 2022 (Rubberized Asphalt Asphalt Rubber)** have announced Jose Ramon Marcobal will make a keynote presentation at the RAR2022 in-person conference in Malaga, Spain. Marcobal, a part-time professor at the Technical University of Madrid and Pavement Departments Director at SACYR, an international infrastructure company, will discuss the benefits of rubber additive, reacted and activated crumb rubber (RARX) in asphalt mixes.

... **Kumho Petrochemical** is planning to make silica, a raw material that improves the fuel economy, braking power and wear resistance of synthetic rubber for tires, using rice bran (chaff) extracts. It will extract natural silica from the ashes of carbonized rice bran and process it into bio-silica that can be used in petrochemical products through chemical processes reducing carbon dioxide emissions by up to 70 percent compared to the previous extraction method. Eco-friendly synthetic rubber composites with bio-silica will be supplied to major domestic and foreign tire manufacturers and shoe makers.

...Trentino, **Italy-based Salvadori** is supplying its OTR tire downsizing technology for Michelin's new mining tire recycling plant in Chile. Now under construction, the plant will

use patented technology developed by Scandinavian Enviro to recover carbon black, oil, steel and gas from end-of-life tires. The plant will be based in Chile's Antofagasta region. Salvadori's technology will be used specifically to reduce the large mining tires of up to 63 in into pieces of predetermined dimensions which will then be further processed in the factory. Salvadori Srl has been part of the American industrial group **TRC – Tech Tire & Recycling Holding** since 2016.

...At the **Smithers Recovered Carbon Black Conference** in Amsterdam last month, tire manufacturers Bridgestone and Michelin outlined a path aimed at promoting and increasing



the use of recovered carbon black in new tires and other rubber products. The issue is not technology, but logistics, they said. This will require a coalition of stake-

holders throughout the tire and rubber industry value chain – and that's what both companies are looking to establish. As part of the joint initiative, Bridgestone and Michelin will lead the development of a position paper outlining the tire industry's role in working towards a circular economy. In 2022, they will release a whitepaper to outline the technical requirements, characteristics, and proposed solutions to increase the use of recovered carbon black in new tires.

...Five C1000S Microturbines manufactured by California-based **Capstone Green Energy Corporation** will provide 5MW of clean green power for a tire recycling plant in Scotland. Capstone's exclusive distributor in Scotland and Northern United Kingdom—SCE Energy—secured an order for four C1000 Signature Series microturbines, adding to last year's first C1000S microturbine installed at SSH Recycling's ten acre tire processing facility. The plant is the first UK facility to devulcanize treated rubber to produce new products that include sheets, conveyor belts, shoe soles or rubber mats. The visionary project is a collaboration between SSH Recycling, ICDP Architects and SCE Energy.

... The City of Lilburn, Georgia recently cleaned up 3,000 illegally dumped passenger car tires using funds from the **Georgia Environmental Protection Division (EPD) Scrap Tire Abatement Reimbursement (STAR)** program, which helps property owners clean up and remove illegal tire dumps. Back in April, the tires were found illegally dumped on property behind a local shopping center. Police used surveillance and motion cameras to apprehend the suspects in the act of dumping. The City was able to help the property managers/owners by applying for funding under the STAR program. Through the program, the city was reimbursed four dollars per tire or up to \$12,000. Costs above that amount were the responsibility of the management agencies/owners. ♦

# STN Calendar

2022

## January

6 Webinar 12:30 p.m. EST: Recycled Content Mandates—The Good, the Bad & the Ugly.

Contact: [lynn@nerc.org](mailto:lynn@nerc.org)

9-12 TRB (Transportation Research Board) Annual Meeting, Washington, D.C. Contact: [www.trb.org](http://www.trb.org)

## February

23-26 OTR (Off-the-Road) Conference, Miramar Beach, FL Contact: [www.tireindustry.org](http://www.tireindustry.org)

## March

21-24 ISRI Convention & Expo, Las Vegas, NV

Contact: [www.isri.org](http://www.isri.org)

23-25 ETRA (European Tyre Recycling Association) Conference, Brussels, Belgium Contact: [www.etra.org](http://www.etra.org)

## April

12-13 NERC Virtual Spring Conference.

Contact: [maryann@nerc.org](mailto:maryann@nerc.org)

19-21 Clemson Global Tire Industry Conference, Hilton Head, SC. Contact: [www.clemsontireconference.com](http://www.clemsontireconference.com)

## May

9-12 Waste Expo, Las Vegas, NV

Contact: [www.wasteexpo.com](http://www.wasteexpo.com)

## June

26-29 Rubberized Asphalt-Asphalt Rubber 2022, Malaga, Spain. Contact: [rar2022@consulpav.com](mailto:rar2022@consulpav.com)

## Retread Tire Workshop Series for Fleet Managers Virtual Retread Plant Tours & Education

CalRecycle and DKEnterprises have scheduled these upcoming 90-minute virtual workshops.

- Goodyear Commercial Tire & Service Centers / Good-year Retread -December 2, 2021, 9:00 -10:30am PST
- North State Tire Company / Oliver Rubber Company - December 9, 2021, 9:00 -10:30am PST

With experts from the retreading industry, the organizers will walk attendees through retread plant videos of each step in the tire retreading process. It's a first hand opportunity to be "inside" a retread facility and experience how retreads are made and the benefits they provide. <https://www.eretreads.com/workshops/virtualtour/>



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## Scrap Tire News Classifieds

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Barclay Shredders	<a href="http://www.tireshredders.com">www.tireshredders.com</a>	5
BCA Industries	<a href="http://www.bca-industries.com">www.bca-industries.com</a>	8
CM Tire Shredders	<a href="http://www.cms shredders.com">www.cms shredders.com</a>	21
Eco Green Equipment LLC	<a href="http://www.ecogreenequipment.com">www.ecogreenequipment.com</a>	11
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Rubber Division, ACS	<a href="http://www.rubberiec.org">www.rubberiec.org</a>	4
Scrap Tire News	<a href="http://www.scrap tire news.com">www.scrap tire news.com</a>	20
Unlimited Resources Corp.	<a href="http://www.urcrecycle.com">www.urcrecycle.com</a>	20