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Digital Recycling Expo and Conference for Circular Economy and Waste Management 31st August – 5th September 2020



The new Recycling Expo and Conference "eREC" is a virtual platform for the recycling industry that facilitates the national and international exchange between companies and customers. Companies can use this platform to present themselves, their newest products, and innovations and enjoy the advantages of online networking. Accordingly, the digital recycling expo and conference is the best opportunity to present oneself to customers without any travel costs involved.

Furthermore, every exhibitor can create his virtual stand and upload brochures, videos, or information material accessible to all visitors. Moreover, visitors can visit all booths, see new products, and get in touch with the exhibitors via live chat option. Apart from presenting the newest products and ideas, every exhibitor has the chance to take part in the extensive framework program – either as a passive participant or as an active speaker. All visitors can access the framework program and take part in webinars or live contributions, which focus on different topics of the recycling industry.

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### No Sustainability without Recycling

The coronavirus pandemic has negatively affected the life and activities of millions of people around the world. Lockdown and social distance requirements, a decline in demand, disruptions in value chains, the global downfall of economic performance and unemployment are consequences of the crisis. Thus, it is hardly surprising that probably everybody wants to know when the pandemic will end.

No one knows when that will be. Until the fight against the virus is over, protection measures are highly recommended. That also applies to face masks, which are said to become the next sought-after fashion accessory. These products can also be made from recycled textile as – for example – fashion students of the LCI Barcelona (Spain) and the manufacturer Ballo in Cape Town (South Africa) have demonstrated. These masks combine fashion with recycling and sustainability.

According to some experts, the economic recovery could take more than a year. The Dutch banking group ING has warned that the world's economy is unlikely to return to pre-pandemic levels before 2022 at the earliest. In the opinion of the World Bank Group, the recovery phase can help build prosperity and resilience by contributing to the long-term potential and sustainability of a country's development pathway. "There are encouraging signs from some countries – including China, Germany and South Korea – that are looking at green elements as part of their recovery."

Sustainability is the most frequently mentioned way to cope with the economic damage. The waste management and recycling industries can make a major contribution to achieve this goal. The companies of this sector turn waste into raw materials while saving greenhouse gas emissions and energy. As the Bureau of International Recycling (BIR) described in its 2019 Annual Report, the carbon dioxide (CO<sub>2</sub>) emission savings achieved through recycling are significant: "Aluminium > 92 %, Copper > 65 %, Ferrous > 58 %, Paper > 18 %, Nickel > 90 %, Zinc > 76 %, Lead > 99 %, Tin > 99 %." Another example: The recycling rates for used textiles are still low in Europe (26 %), China (15 %), United States of America (12 %) and Hong Kong (4 %).

Some visions for the economic recovery after the Covid-19 pandemic are presented on page 4. Furthermore, the company INEOS Styrolution informs about the intended closed loop for styrenics (page 14). Additional topics are Brazil's challenges for the future (page20), Vietnam's waste management (page 24) and European solutions concerning textile recycling (from page 29 onwards), to name but a few.

We hope you get a lot of new and useful information from reading this current magazine.

Furthermore, we would like to introduce our new Recycling Expo and Conference for the recycling industry "eREC" to you (have a look at the page on the left side). The new expo is a virtual platform to network with each other. We kindly invite you to be there as an exhibitor or visitor.

Yours, Brigitte Weber (weber@msvgmbh.eu)



Brigitte Weber Editor-in-Chief

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### BIR's Global eForum: BUSINESS ACTIVITY DESPITE THE VIRUS

The lockdown and the social distance requirements because of the coronavirus pandemic had prevented the BIR convention in Istanbul in May – but the Bureau of International Recycling has found a solution.

To inform its members about the latest developments, the global eForum was created. The series of online webinars ran from June 3 to June 23, and each focused on the specific commodity covered by the world recycling association. This virtual event began with the session of the International Trade Council, moderated by its Chairman Michael Lion of Everwell Resources Ltd (China), and the theme was "Spotlight On Global Trade - The impact of Pandemic on Global Markets". An important realization was, for example, that international trade still takes place; however, the material volumes are low. The same applies to collection rates.

#### China

With regard to present and future markets, the People's Republic of China is still an economically influential country; the attendees feel confident, that there will be a national stimulus package after the pandemic. China would continue to be "a major factor" in the global marketplace as a consumer of materials, David Chiao of Uni-All Group (USA) is convinced. He also pointed out that the country with new classification after July\*) would not consume mixed metal scrap but metal products. In view of international trade, a container shortage earlier in the pandemic has ended, Chiao informed. He expects that a further container equipment imbalance could emerge in another month or so as Chinese exporters were experiencing a growing shortage. Despite a drop in oil prices, freight rates had headed higher



in recent months as result of increased surcharges.

Mark Sellier of Global Metals Network Limited (Hong Kong) emphasized that in line with the many businesses taking "a very conservative approach" to risk at present, his own company favors secure payment before relinquishing title to goods. Business conditions had been made more challenging because it was not possible to visit customers' yards/factories or to assess such factors as stock levels, he reported. However, his business was looking to maintain regular direct contact with customers through video links.

Furthermore, there had been "considerable difficulties" in obtaining CCIC-certification (China Certification & Inspection Group) in some parts of Europe because of travel restrictions and office closures, Mark Sellier informed. Against this backdrop, Sébastien Ricard of Paprec (France) said that no real issues had arisen with CCIC-certification with regard to fiber trade because – in general – relatively small volumes were currently being shipped to Asia. A switch in Europe from fiber "over-supply" to "overdemand" had intensified the focus on supplying more local markets.

Providing a plastics and rubber perspective, Max Craipeau of Greencore Resources Limited (Hong Kong) agreed that many multi-national companies based in the USA, Europe, Japan and South Korea were already looking to move manufacturing operations from China to other countries in the region. However, "you cannot switch such a huge production capacity overnight" and so the process could take "months or years", he is convinced.

BIR's president Tom Bird expressed his opinion that – after the pandemic – the trend to transfer industrial manufacturing capacities from China to other countries would intensify. That would be going to be an interesting period.

#### India

George Adams of SA Recycling (USA) identified the "tough" lockdown in India as the biggest overseas trade issue to emerge during the pandemic as it led to bank closures and docks being unavailable. Endorsing this assessment, Greg Schnitzer of fellow US company Schnitzer Steel Industries, Inc. added that "all markets are available today" and that the situation in India was also easing. "Hopefully, we've seen the worst of it and we're coming out of this," he said. "We're beginning to see demand pick up."

<sup>\*)</sup> According to the latest BIR World Mirror on non-ferrous metals the standards for recycling materials for brass, copper and cast aluminium alloys were implemented in July this year. The respective recycling materials "that have been pre-processed abroad and meet the quality standards of raw material products will be managed according to product import rules".

### **BUSINESS CHANCES**

# After the Covid-19 Pandemic: **VISIONS FOR ECONOMIC RECOVERY**

The coronavirus pandemic has devastated communities and economies around the world through the global decline in demand, disruptions in value chains and a deterioration in financial conditions.

Governments around the world are taking measures to cope with the economic damage. The most frequently mentioned way to do this is sustainability and environmental protection. According to Angel Gurría, Secretary General of the OECD (Organization for Economic Co-operation and Development), "governments have a unique chance for a green and inclusive recovery that they must seize - a recovery that not only provides income and jobs, but also has broader well-being goals at its core, integrates strong climate and biodiversity action, and builds resilience". In his opinion, stimulus packages need to be aligned with ambitious policies to tackle climate change and environmental damage. "Only such an approach can deliver win-win policies for people, planet and prosperity."

The European Union is on the same page. In May, the European Commission presented in European Parliament a 750 billion Euro economic stimulus plan that - along with a revised proposal for the EU's 2021-2027 budget amounting to 1.1 trillion Euro - should help mitigate the shock from the coronavirus pandemic and pave the way for a sustainable future. Part of this solution is the Next Generation EU recovery plan that aims to address the damage caused by the pandemic and invest in a green, digital, social and more resilient EU. "Under the proposal, the Commission would borrow the money on the financial markets using its high credit rating, which should secure low borrowing costs," the information provided by the Parlia-



ment said. 500 billion Euro would be distributed in grants. Intention is that the funds will be used to reach the EU's objectives of climate neutrality and digital transformation, to offer social and employment support as well as to reinforce the EU's role as a global player.

The proposals are subject to negotiations between the Parliament and the Member States in the Council.

#### Plea for the "Green Deal"

If the European Member States accept the suggestions, the three associations representing waste management and recycling industries at European level – EuRIC (European Recycling Industries Confederation), FEAD (European Federation of Waste Management and Environmental Services) and CEWEP (Confederation of European Waste-to-Energy Plants) – will have achieved an important aim. In May, the organizations had issued a joint call to put the Green Deal and the new Circular Economy Action Plan at the forefront of the post Covid-19 recovery in the EU.

The association representatives stressed - in a statement issued together with the joint call - the key role played by Europe's recycling industry in turning waste into valuable raw materials while saving greenhouse gas emissions and energy. Not only for EuRIC President Cinzia Vezzosi, it is vital to use the momentum of the post Covid-19 crisis to direct a significant part of massive public investments towards circular industrial value chains and infrastructures needed to make Europe climate-neutral by 2050. In that respect, the joint call highlights the importance of prioritizing certain measures aiming at:

 Stimulating the demand for secondary raw materials through incentives, their greenhouse gas emissions and energy savings, recycled content targets and green public procurement to bridge circular economy and climate policy;

**BUSINESS CHANCES** 

- Further strengthening the internal market and, in particular, fasten the creation of a well-functioning EU market for secondary raw materials thanks to simplified waste shipment procedures and EU-wide end-ofwaste criteria;
- Speeding up work on eco-design to ensure that tomorrow's products will last longer and be easier to recycle when reaching end-of-life;
- Enhancing investment certainty by implementing current recycling targets and resuming a fact-based discussion on proper treatment of unrecyclable waste in Europe, through energy-recovery or final disposal.

#### US Businesses wish a resilient and sustainable economy

Also in the USA, major companies stand up for a more sustainable economy after the Covid-19 crisis. According to Ceres – a sustainability nonprofit organization working with the most influential investors and companies – CEOs and representatives from more than 330 businesses called in May on "a bipartisan group of federal lawmakers to build back a better economy by infusing resilient, long-term climate solutions into future economic recovery plans." Amid the backdrop of Covid-19 and the full recognition that the safety, health and well-being of all citizens is the most immediate priority, 'LEAD on Climate 2020' was the largest ever call to action from the business community to the US Congress on the ongoing climate crisis, Ceres said. Specifically, the businesses advocate for:

- An accelerated transition to a netzero emissions economy by 2050 or sooner;
- More investment in resilient infrastructure;
- Effective climate solutions including those that fully leverage the job opportunities of zero-carbon industries;
- Support for longer-term, marketwide policy mechanisms such as a price on carbon.

As reported, the participating businesses include more than a dozen Fortune 500 firms as well as trade associations, medium and small businesses from all 50 states, collectively representing combined annual revenues of more than one trillion US-Dollar in revenue, a combined market valua-

tion of nearly 11.5 trillion US-Dollar and more than three million employees in the USA. "The companies and investors calling for climate action as part of economic recovery efforts span across the American economy, including retailers, manufacturers, healthcare services, food and beverage companies, outdoors industries, technology companies and energy providers," Ceres stressed. "The high level of participation is notable given the disruption most of the companies and investors are experiencing due to the economic collapse, as well as the current social distancing constraints on in-person advocacy." This increased corporate and investor policy engagement comes at a time when the consequences of the climate crisis have never been clearer or more dire, Ceres stated. Last year, carbon dioxide levels in the atmosphere were at their highest levels in at least the last 800,000 years, and the World Meteorological Organization (WMO) recently found that the last decade was the hottest on record. "As US and global emissions have steadily grown over the years, so has corporate and investor ambition to reduce emissions - even amidst the current pandemic."

Who takes care of WORLDWIDE STAINLESS STEEL RECYCLING? WE DO



# THE GLOBAL METAL RECYCLING MARKET

he rising demand for recycled metals in automotives along with the building and construction sector are driving the purchase interest, says market research and consulting company Reports and Data. The global metal recycling market is forecast to grow at a rate of 7.0 percent – in terms of value - from 2020 to reach 86.11 billion US-Dollar by 2027, according to a new report by the USA-based firm. "An increase in energy savings with decreased greenhouse gas emission levels and increasing consumer awareness regarding it are driving the market for recycled metal", the report informs.

One of the reasons why the market is growing would be the high demand for steel and rapid industrialization and urbanization in emerging nations. "Moreover, increased concerns towards the exhaustion of natural resources at a faster rate have led governments across the globe to formulate favorable regulations concerning the metal recycling industry, which is further boosting the metal recycling market." According to the company, also the scarcity of rare-earth metals would provide a growth opportunity for the market.

Further key findings suggest:

- The demand for ferrous material in metal recycling is growing. The usage of it in several products is high. For instance, in the year 2018, the recycling rates for ferrous scrap in cars was 106 percent, for structural steel 98 percent, for appliances 90 percent, for reinforcement steel 70 percent and for steel cans 66.8 percent.
- The dominant end-user of the recycled metal was the building and construction industry. It held the largest market share of 35.1 percent in 2019. "The increased ongoing construction activity all across the

globe in the past few years and growing conscious of sustainable development has encouraged the segment's end users to use more recycled metals."

- The demand for steel was slow in China in the year 2018, but it corresponded with a rise in the rest of the world, mainly due to the then strong economy in the USA. Increased consumer spending, as well as business confidence, had led to a solid product demand. "This boosted the demand for recycled metals in the North American region."
- Manufacturers are witnessing an increase in prices for copper, steel and other raw materials, mainly due to the Coronavirus pandemic. "This is going to make the recycled metal more appealing as the process of recycling is far less expensive than mining for ore."

#### Barriers to market growth

Factors that will restrict the global market are the unorganized flow of waste metals and less scrap collection zones, Reports and Data expects. The increasing cost of raw materials would also hinder the demand along with high labor charges. Furthermore, there is the worldwide impact of Covid-19: The global supply of recycled metals fell during the first months of the year 2020 due to the coronavirus. "The demand plummeted in China, and then the rest of the world as the pandemic led to industries and factories shutting down. It also hit a pause button on consumer spending", the market intelligence and strategic consulting firm gave account. "The infrastructure sector is not expected to witness any growth in the wake of the virus." The consumers all around the world would face reduced or lost income.

#### **Rapid recovery**

According to the estimation, the market is expected to have a rapid recovery after the pandemic. This is possible based on pent-up consumer demand – after stay-at-home orders are rescinded – the company is convinced. But that scenario is not guaranteed as there is an element of recovery involving not only the return of positive household consumer sentiment but also the ability and willingness of governments around the world to inject money into infrastructure and other public works projects.

www.reportsanddata.com/reportdetail/metal-recycling-market



# DECREASING LITHIUM-ION BATTERY PRICES PRESENT OPPORTUNITIES

The Irish company Research and Markets has added the report "Global Battery Recycling Market 2020-2028" to its offering.

According to the analysis, this global market is predicted to grow at a compound annual growth rate (CAGR) of 9.10 percent from 2020 to 2028. It is boosted by increasing concerns among countries on battery waste disposal coupled with strict rules and regulations. "The growing adoption of electric vehicles that majorly use lithium-ion batteries is another major factor driving the market growth", the information said. "Moreover, a high recycling gap between batteries, the



government subsidies provided to encourage battery recycling and the declining lithium-ion battery costs are creating immense opportunities for the battery recycling market." However, technological advancements in battery technologies are restraining the global battery recycling market's growth. Besides, lack of supply chain and low yield in battery recycling is affecting the market growth. Furthermore, safety issues regarding the storage and transportation of used batteries are challenging the growth of the battery recycling market.

The market report covers the countries from Latin America, Europe, North America, Asia-Pacific and the Middle East and Africa.

www.researchandmarkets.com/r/ idhsj0



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# INDONESIA'S MULTISTAKEHOLDER ACTION PLAN

n April this year the national strategy document "Radically Reducing Plastic Pollution in Indonesia: A Multistakeholder Action Plan" was published.

As reported by World Economic Forum, the plan lays out an evidencebased roadmap towards reducing the amount of plastic leakage into the country's coastal waters by 70 percent by 2025, as well as achieving nearzero plastic pollution by 2040 through transitioning to a circular economy for plastics.

"Indonesia's unprecedented national effort to take on plastic pollution is crossing a new frontier in what is possible", Luhut Binsar Pandjaitan, **Coordinating Minister for Maritime** Affairs and Investment, wrote in the preface to the document. "Working from the basis of a radical idea, we have created a platform - the Indonesia National Plastic Action Partnership (NPAP) – to mobilize willpower from all sectors and identify a clear path towards our goal to show that plastic pollution is not too complex or too enormous a challenge to overcome." In this context, he invites "all to join us on this journey. As Indonesia puts this plan into action, we look forward to sharing our knowledge and to learning from others on bringing solutions and successes to scale".

As reported, urgent action is needed to turn the tide of plastic waste and pollution in Indonesia. 70 percent of the country's plastic waste – an estimated 4.8 million tons per year – is considered mismanaged in ways such as being openly burned (48 percent), dumped on land or in poorly managed official dumpsites (13 percent) or leaking into waterways and the ocean (9 percent or 620,000 tons). Despite a sharp growth in foreign waste imports in 2018, more than 95 percent of plastic pollution comes from waste generated within Indonesia, the analysis said. The situation is expected to worsen in the next years.

#### Needed: action and investments

According to the information, the Action Plan compares two possible outcomes for the Republic of Indonesia: one is the "business as usual" scenario, in which plastic pollution is projected to increase by one-third to 6.1 million tons in 2025 and more than double by 2040, even if the plastic waste collection rates keep pace with a growing waste generation. The



Radically Reducing Plastic Pollution in Indonesia: A Multistakeholder Action Plan National Plastic Action Partnership



#### **About the Action Plan**

According to the World Economic Forum, the delivery of the Action Plan represents a significant milestone in the work of the Indonesia National Plastic Action Partnership (NPAP), the nation's leading multi-stakeholder platform for shaping a unified and effective approach to tackling plastic pollution and waste. It was launched one year ago by the Government of Indonesia in collaboration with the Global Plastic Action Partnership (GPAP), the flagship plastic action platform at the World Economic Forum, and is hosted at World Resources Institute (WRI) Indonesia in Jakarta.

The Indonesia NPAP comprises over 230 member organizations from national and local government, the business and investment community, civil society and youth advocacy groups, foreign diplomatic missions, and research and academia. To translate the recommendations in the Action Plan into concrete action, its members have formed five new task forces on policy, innovation, financing, behavior change, and metrics, in addition to continuing to address plastic pollution and waste through their respective institutions.

The analysis and scenario methodology for developing the Action Plan were adapted from global research conducted by The Pew Charitable Trusts and SYSTEMIQ, which will be published in full later this year under the title "Breaking the Plastic Wave".

The Action Plan was shaped through close consultation and collaboration with leading plastic waste and plastic pollution experts in Indonesia, including members of the Indonesia NPAP Steering Board, NPAP Expert Panel, Government of Indonesia, and other key stakeholders.

https://globalplasticaction.org/wp-content/uploads/NPAP-Indonesia-Multistakeholder-Action-Plan\_April-2020.pdf

### **BUSINESS CHANCES**

other is the System Change Scenario (SCS), which would enact a series of ambitious, society-wide transformations, including the following five key interventions:

- Reducing or substituting avoidable plastic usage to prevent the consumption of more than one million tons of plastics per year by switching to reuse and new delivery models, changing behaviors and replacing plastics with alternative materials that yield improved environmental outcomes.
- Redesigning plastic products and packaging with reuse or recycling in mind.

- Doubling plastic waste collection from 39 to more than 80 percent by 2025 by boosting state-funded and informal or private-sector collection systems; this implies expanding plastic waste collection to four million new households each year until 2025.
- Doubling current recycling capacity by building or expanding plastic sorting and recycling facilities to process an additional 975,000 tons of plastics per year. To achieve that by 2025, large-scale recycling hubs need to be strengthened in Java and developed in urban centers outside of Java.
- Building or expanding controlled waste disposal facilities to safely manage non-recyclable plastic waste.

The reduction of plastics in the ocean until 2025 would require a total capital investment of 5.1 billion US-Dollar and an operational funding budget of 1.1 billion US-Dollar/year in 2025 to run an effective waste management and recycling system, the strategy document said. Under the System Change Scenario, Indonesia is expected to prevent 16 million tons of plastics entering its coastal waters, create more than 150,000 jobs and significantly improve public health outcomes.

### **PUR-RECYCLING TOWARDS A SMART CIRCULAR ECONOMY**

The European PUReSmart project, which started in January 2019 and will end in December 2022, explores new methods, technologies and approaches in order to transform polyurethane (PU) into a circular material.

The project consortium consists of nine partners and develops smart sorting technologies to separate a diverse range of PU materials into dedicated feedstocks; these will be broken down into their basic components as inputs for existing PU products, and as raw materials for a newly designed polymer that merges the durability of thermosets with the circularity of thermoplastics.

As reported on the PUReSmart homepage, after twelve months, the consortium could achieve "breakthrough steps". The development of new chemistries to obtain covalent adaptable polyurethanes (CAPU's) is moving forward. Also, the work regarding the development of innovative sorting methods is moving ahead. "The PUReSmart project is working



on a process with complete recovery of not only the polyol but also of the isocyanate precursors (amines), which will hopefully lead to the first recycled isocyanate in the world", the consortium underlined. "The impact of PUReSmart is extremely important in the treatment of End-of-Life (EoL) PU products. As today the recycling options are rather limited, the project will bring new solutions to recover valuable raw materials out of EoL materials to be re-used to make a new generation of CAPU foams. This will close the loop and create opportunities for a circular economy."

www.puresmart.eu

# FLUORESCENT MARKERS POISED TO ADDRESS SORTING CHALLENGES

by Professor Edward Kosior

A recent Greenpeace report claiming that some US companies are incorrectly labeling plastic products as recyclable reinforces the urgent need for improved sorting and identification solutions. As the report points out, many MRFs (Materials Recovery Facility) only accept PET and HDPE due to insufficient processing capabilities, a situation for which there now is a ground-breaking solution.

First, let's look at one of the main issues, Polypropylene (PP). Whilst the packaging industry has invested in marketing PP as recyclable, not being able to differentiate between a food tray, soup pot and a fertilizer tub this obviously hampers the full recycling potential of PP.

According to the Greenpeace report, only 53 percent of surveyed MRFs take PP, and only 31 percent of US residents have access to PP collection. The stumbling block is that recyclers need to be able to identify a pack's past history during the sorting process, and with no effective way of separating food grade from non-food grade polymers – little wonder – most of it ends up being recycled into non-



packaging applications like crates and bins or, worse, goes straight to landfills or incinerators.

The issue is a global one. The European Plastics Converters Association (EuPC) reported that almost 60 percent of the European plastics converting companies find it hard to get a supply of recycled plastics materials that meet their quality standards.

According to a 2019 report by the European Commission, of the 27.1 million tons of plastic waste collected in Europe in 2016, only 31.1 percent went to recycling facilities. The rest landed at incinerators or landfills. Food grade plastic has been the most complex to obtain due to the risks of using second-hand plastics containing toxic chemicals that are potentially dangerous to human health. Now an innovative identification technology is being deployed to separate plastic to food-grade quality in one single step, thereby radically transforming the sorting process in recycling facilities. A British consortium has developed a technology that can rapidly and efficiently distinguish between foodgrade and non-food-grade polymers, identify black plastics and tag fulllength shrink-sleeves.

Plastic Packaging Recycling using Intelligent Separation technologies for Materials (PRISM) applies high performing luminescent materials to labels on plastic packaging, creating what is best described as an invisible barcode for plastics recycling. The process is simple. Fluorescent markers – produced from materials recovered from fluorescent lamp recycling and non-rare earth-based compounds – are printed on labels or plastic packaging sleeves. As the mixed plastic



Photos: PRISM

### **BUSINESS CHANCES**

waste runs along the conveyor belt the high-speed sorting system is triggered by an ultraviolet (UV) light source that identifies the coded PRISM label and reads his code, and air propels it into the appropriate recycling stream.

Following extensive trials, PRISM is now well proven in MRF setups and is plug & play ready. It is complementary to existing NIR (Near Infrared) technology and can easily be adapted to most sorting facilities around the world to target specific recycling streams such as food contact plastic packaging. The innovative technology uses traditional labeling and branding methods and is designed to identify a host of different materials applying multiple markers for a wide range of codes. These markers can be removed during recycling leaving no traces for the next cycle of use. Even the most challenging plastic waste can now be sorted at full speed of two tons per hour to over 96 percent purity with a yield in excess of

#### British Consortium of PRISM Partners

- Nextek PRISM project manager and recycling R&D
- Brunel University London Wolfson Material Processing Luminescent expertise
- CCL Labels Multi-national label maker
- Enlightened Lamp Recycling Fluorescent lamp recyclers
- Johnson Matthey Specialty chemicals, catalysis and process technology
- Mirage Inks Leading manufacturer for printing inks for packaging applications
- Tomra Sorting World leader in automatic detection systems
- WRAP UK Leading waste and resources charity UK

Video: () www.youtube.com/ watch?v=R8\_c3LdAzvo 95 percent for PET. That meets EFSA's (European Food Safety Authority) stipulated 95 percent purity for PET food-grade plastic in a single sorting step. Other polymers such as PP may require two steps of sorting and can reach upwards of 99 percent purity. That is a significant step forward in the sub-categorization of plastics, which are sorted automatically at high speed, and it opens up a wealth of new opportunities for brand-owners wishing to recover their packaging as part of the circular economy.

Trials have been successfully conducted with recycling organizations and brand owners, and the next stages of commercialization are in progress. PRISM is set to become a vital stepping stone towards improved sorting capacity and should provide a muchneeded impetus to the struggling recycling sector.

www.nextek.org



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### WRAP FILM MADE FROM RECYCLED MATERIAL

Polish company FOL-GOS is offering ecological stretch films suitable for wrapping waste, which are made of recycled materials and are recyclable as well. As reported, the multilayer structure of the products (stretch-ability: 50 to 70 percent) ensures high barrier properties. Furthermore, the films are dedicated to all types of wrappers available on the market. FOL-GOS was founded in 2012. From the beginning, the company has been involved in the production of stretch film.

The manufacturer cooperates with the Center for Commodity Research, a special-purpose company at the University of Economics in Poznań Sp. z o.o. to examine quality and properties of its products. "Comparative tests of our film with other competitive films (domestic and foreign) produced from primary raw materials confirmed our good quality and usable parameters of our film, comparable to the parameters produced from the original raw material," the company informs.

www.folgos.pl/en

### FURNITURE UPHOLSTERY FROM RECYCLED WASTE

Tessutica, which belongs to Belgium-based Beaulieu International Group (B.I.G.), has announced a new product line: "Greencare" is the company's new collection with 100 percent recycled and recyclable upholstery fabrics. After use, the fabrics can be recycled into pellets again. According to the information, "Greencare" is certified under the Global Recycle Standard (GRS) label. The fabrics base on recycled yarns from regular post-consumer PET bottles from the oceans, landfills and upcycled cotton from garments. For this, Tessutica partnered with the Seaqual project, which brings plastic waste back into the manufacturing chain. With growing demands for sustainability within the business world as well as from end-consumers, Tessutica felt it was the right choice to offer a product line that comes with a full guarantee of environmental consciousness.

www.tessutica.com

### **NEW MEMBER**

Portugal-based company Intraplás, Indústria Transformadora de Plásticos, S.A. has joined the organization Styrenics Circular Solutions (SCS). As reported, Intraplás has over 50 years of experience in extrusion, thermoforming and printing in the packaging sector for the food industry, specialized in the dairy sector. They join fellow SCS members, including COEXPAN, ELIX Polymers, Exiba, Greiner Packaging, INEOS Styrolution, Repsol, Tomra, Total, Trinseo and Versalis (Eni).

Styrenics Circular Solutions is the value chain initiative to increase the circularity of styrenics. The initiative engages the entire value chain in the development and industrialization of new recycling technologies and solutions. It aims to strengthen the sustainability of styrenic products while improving resource efficiency within the circular economy.

www.styrenics-circular-solutions.com

### **USA: RECYCLING MARKET DEVELOPMENT PLATFORM**

The company More Recycling has launched a Recycling Market Development Platform, which will be available through www.CircularityIn-Action.com.

The purpose is to illuminate circularity in action and to connect people with tools and resources. "The recycling and composting rate is only 35.2 percent of the total material waste generated in the U.S., according to the latest U.S. EPA stats (2017)", More Recycling wrote in its press release. "Recycling is not as impactful as simply consuming less or reusing more, but it is a critical step in conserving resources and reducing greenhouse gas emissions. This recycling and compost rate has the potential to fall even lower without large-scale action, especially with the additional challenges we face due to the global pandemic." Better policy and greater innovation for circularity were needed to overcome the exponential economic imbalance facing the recycling industry.

As emphasized, the new platform is offered for free. More Recycling is supported by the American Chemistry Council as the first Premier Patron of Recycling Market Development Platform.

www.CircularityInAction.com

### Europe: INITIATIVE TO CLOSE THE GLASS LOOP

The Association of Cities and Regions for sustainable Resource management (ACR+) has joint the European initiative, which was founded by FEVE (Federation of European manufacturers of glass containers), FERVER (the association of glass recycling companies in Europe) and EXPRA (the Extended Producer responsibility Alliance), to name but a few. The goal is to achieve 90 percent of glass packaging collection for recycling by 2030.

ACR+ represents 1,100 municipalities and 52 local and regional authorities and joins "Close the Glass Loop" putting their extensive network at the disposal of the platform. "Thanks to the cooperation of its members, ACR+ will have a key role in gathering data to build an overview of how the glass collection and sorting chain work in the Member States, cross-analyzing for these national frameworks and local waste practices", FEVE said. "This intelligence-gathering work will enrich the Close the Glass Loop campaign and will encourage key stakeholders to focus more on end-of-use glass packaging management as a key sustainable resource that needs to be better exploited."



#### The platform

Glass is already Europe's most recycled food and beverage packaging material - the latest figures put the collection rate at 76 percent (EU-28: about 12.4 million tons in 2017). Most of the 30 billion collected containers go back into the batch of one of the 160 plants in Europe; the average batch contains 52 percent recycled content. "Yet new glass containers could be produced with more recycled glass, and we want to make that happen", FEVE pointed out. "By recycling more and better, we can progress on new EU 2030 recycling targets and the UN Sustainable **Development Goals - particularly SDG** 12: Responsible Production and Consumption - and achieve sustainable growth opportunities in the Circular Economy. Recent European legislation has set new real recycling targets. The revised Packaging and Packaging Waste Directive is increasing recycling targets for glass packaging to 70 percent by 2025 and 75 percent by 2030 per country. Most importantly, new EU targets now measure the actual recycling of packaging materials - not just collection rates. This means that to achieve these real recycling targets, we will need to make more effort to increase and improve collection."

"Close the Glass Loop" aims to increase the recycled content available to the industry, by collecting more and better glass upfront. The whole value chain is involved in recycling: from the glass producer to the brand owner and the filler, to the consumer and glass treater passing by the EPR and Waste Management Schemes, as well as collectors and municipalities. The vision is to achieve full actual recycling of collected glass packaging by working in partnership with the whole value chain to make sure the circular economy works better.



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# GOAL: A CLOSED LOOP FOR STYRENICS

The Germany-based company INEOS Styrolution has demonstrated that a circular economy regarding styrenics is possible. That is a considerable step forward, based on mechanical and chemical recycling.

eadquartered in Frankfurt am Main, the company produces styrene monomer, polystyrene, ABS standard and styrenic specialties with more than 90 years of experience and production facilities in Europe, Asia and the Americas. With its production technology, advanced research and development skills, Intellectual property (IP) and patents, INEOS Styrolution sees itself as perfectly equipped to ensure the highest level of quality, efficiency and innovation. In the following interview Johannes Musseleck, Director of Global Strategy at INEOS Styrolution, informs GLOBAL RECYCLING Magazine about the company's solutions for a circular economy.

Since early 2018, INEOS Styrolution has been exploring the mechanical recycling of Acrylonitrile Butadiene Styrene (ABS), and now offers the first two products of the newly launched ECO family. Can the products' properties match the profiles of their non-recycled counterparts? Our aim and our dedication at INEOS Styrolution is to create sustainable styrenics solutions that have the product performance and properties on par with conventional solutions. Launched in October last year, our two new recycled ABS grades, Terluran ECO GP-22 MR50 and Terluran ECO GP-22 MR70, contain respectively 50 and 70 percent of recycled post-consumer ABS from waste electrical and electronic equipment (WEEE). The properties of these recycled grades match the property profile of the virgin ABS grades.

There has been a high demand by brand owners interested in these products. During the past months, Terluran ECO was widely tested by big brand owners, who gave very positive feedback about how it is meeting their expectations. This ideal drop-in solution does not compromise in performance, and manufacturers do not need to adapt their technology or production processes. Moreover, this recycling process is less energy-intensive, has a much lower carbon footprint in comparison to conventional production

### ENTERPRISES

processes and will reduce the amount of waste that ends up in a landfill. Today, we are in different stages of development with several customers to implement Terluran ECO grades in their running processes. In short: The product properties of the new material absolutely match the property profile of its non-recycled counterparts.

In 2019, INEOS Styrolution achieved a breakthrough in the chemical recycling of polystyrene. Furthermore, the company is working on the realization of this method on a pilot and industrial scale. What specific measures have been planned – or have already been implemented?

Indeed, in April 2019, we produced a lab-scale quantity of general-purpose polystyrene from 100 percent recycled styrene monomer in our Antwerp plant in Belgium. The material was the result of experimental polystyrene production runs with styrene monomer feedstock produced from the depolymerization of post-consumer polystyrene waste. That is part of our dedicated efforts to close the loop on polystyrene, one of the most recyclable plastics materials. Therefore, we teamed up with commercial partners, research institutes and leading-edge technology providers to build first production sites with significantly bigger capacities. In Europe, we collaborate on a depolymerization facility in Antwerp, Belgium. In the Americas, we are engaged in setting up a depolymerization plant in Channahon, Illinois, USA, next to our existing polystyrene plant.

We have provided some batches of recycled polystyrene to some of our customers to test and jointly develop commercial solutions. We also have promising early results from two independent life impact assessment (LCA) studies on chemical recycling, which show at least 37 percent lower CO<sub>2</sub> footprint compared to fossil-based styrene. That is a positive outcome for the depolymerization technology and will drive it forward.

Johannes Musseleck is the Director of Global Strategy at INEOS Styrolution; before that, he worked as the Director of Supply Chain Management. He works on implementing the company's Triple Shift growth strategy, leads various strategic global projects as well as the global Regulatory Affairs team, and is developing INEOS Styrolution's strategy for the Circular Economy.

Johannes Musseleck holds a degree in Economics from Trier University. His career began at BASF in 2000, where he held various positions in marketing, sales, and innovation management before moving to INEOS Styrolution in 2011. INEOS Styrolution is also offering the integration of renewable feedstock as a replacement for fossil fuel in upstream existing petrochemical installations. What is the benefit of bio-attributed styrene?

In addition to our efforts to drive mechanical and chemical recycling, we are also offering the integration of renewable feedstock as a replacement for fossil fuel. This approach allows us to create more sustainable supply chains while retaining our already optimized and highly efficient infrastructure and processes. By using bio-attributed feedstock, we aim to reduce our environmental footprint and save valuable resources. The feedstock we source complies with the highest sustainability certification criteria by RSB (The Roundtable for Sustainable Biomaterials). That means that the renewable feedstock does not compete with food production and does not contribute to deforestation. Using bio-attributed styrene offers us a 74 percent lower greenhouse gas footprint when compared to styrene produced by fossil fuel. And for our customers, this approach presents a "drop-in" solution with identical product quality and properties and therefore does not require product development or new registration and regulatory approvals.

# On an industrial scale, how much post-consumer material would be required for mechanical or chemical recycling?

We plan to develop first industrial plants with capacities of around 15 kilotons per year. But we do not stop there. We are already looking at longer-term volume scenarios, and together with partners, we analyzed the waste value chain. The good news is that we have been able to identify nearly all of the polystyrene packaging volumes that are put on the market in the waste value chain, so it is not getting lost. That means that we can use it for recycling. Our analysis clearly shows that the available waste will be sufficient for our recycling plans.

#### What would a circular economy for styrenics look like?

Plastics waste is too valuable as a resource to incinerate or landfill it, and styrenics are made for recycling due to their unique chemical properties. We strive to provide sustainable solutions to our customers and end-consumers such as producing high-quality products from recycled materials and offering the integration of renewable feedstock as a replacement for fossil fuel. But this cannot be achieved by one company alone, so we are trying to collaborate with companies along the value chain to close the loop from waste collection, sorting, recycling, and production of new goods from recycled and bio-attributed materials.

*Mr. Musseleck, thank you for the interview.*www.ineos-styrolution.com

# **POLYSTYRENE – MADE FOR RECYCLING LIKE NO OTHER**

As the global market leader in Astyrenics, INEOS Styrolution is convinced that the future of the company lies in delivering innovative and circular solutions for its customers.

To achieve this, we consider a holistic approach, taking into account the impacts of our entire value chain: from R&D, resource-efficient production, prevention of waste leakage, through to waste collection, sorting and reuse, recycling or recovery of our products.

We have a proven track record in innovation and R&D and we are using this expertise to contribute to circularity. We continue to strive for resource-efficient operations and are continuously reducing our energy use as well as our emissions. We participate in the stewardship programme Operation Clean Sweep® and embed good practices for the containment of pellets in our day-to-day practices and management systems at all our production sites, and encourage logistics suppliers to also adopt these good practices.

We have embarked on several projects focused on chemical recycling We are investing into recycling technologies and cooperate with partners across the value chain to benefit from the unique properties of styrenics.

# POLYSTYRENE. MADE FOR RECYCLING.



First polystyrene, recycled with depolymerisation process

of plastics by collaborating with not only styrenics manufacturers but also the entire value chain. We have joined forces in a collaborative industry initiative with PlasticsEurope to support waste collection, sorting and technol-



Circular economy for styrenics

ogy development. We are also part of the joint European initiative of the styrenics industry called Styrenics Circular Solutions (SCS) to increase the circularity of polystyrene. We believe the synergies of these technologies will help in speeding up the implementation and shorten the time to market.

By offering styrenics solutions that deliver strong, sustainable performance, we will ensure that our customers' businesses and end consumers' choices become more sustainable.

www.ineos.com

# **MONEY FOR CIRCULAR ECONOMY**

H uhtamaki and WasteAid announce a global partnership to drive community-level circular economy innovations in key locations.

The global active Finnish packaging company Huhtamaki and UK-based international charity WasteAid have announced a 900,000 Euro partnership "to drive community-level circular economy innovation in Vietnam, India and South Africa for a two-year period". To mark its 100th anniversary, Huhtamaki is also donating three million Euro to global sustainability initiatives with a local impact - acting today, educating for tomorrow and funding innovation for the future, "making a difference where it matters most to help address global sustainability challenges and build circular economy initiatives".

According to Huhtamaki, its funded project "will provide financial support to WasteAid to deliver education and training on waste management and circular systems. It will enable WasteAid to work with key stakeholders in Johannesburg (South Africa), Ho Chi Minh City (Vietnam) and Guwahati (Assam, India) to fast-track and amplify local solutions that create value and reduce waste and pollution, in line with the UN's Sustainable Development Goals."

Huhtamaki, a global player in sustainable food-on-the-go and food-on-theshelf packaging solutions, "chose to partner with WasteAid as it is already making a positive impact on plastic pollution. An illustration of this is their project in West Africa, where trainees are turning plastic waste into useful products like paving tiles. Very quickly the local team prevented a million plastic bags from being burned or reaching the ocean," Charles Héaulmé, President and CEO of the packaging producer, is cited. "We will be learning from our partnership with WasteAid and will share our insights with global stakeholders as part of our sustainability journey to deliver on our 2030 strategy."

WasteAid, which was set up by waste management professionals to tackle the global waste crisis, would bring its expertise in sustainable waste management to share skills, develop business ideas and create end-markets for recyclable materials, driving innovation and developing a new generation of green entrepreneurs locally.

www.huhtamaki.comwww.wasteaid.org



### PAPER PACKAGING: NEW ACTION GROUP IN EUROPE

The partners of the European paper sector in the industry alliance "4evergreen" intend to boost the contribution of paper-based packaging in a circular economy. Cepi (Confederation of European Paper Industries), the association representing the paper industry in Europe, has arranged a new alliance called "4evergreen". It aims to boost the contribution of fiber-based packaging in a circular and sustainable economy that minimizes climate and environmental impact.

According to Cepi, the initiative intends to increase awareness about the benefits of these packaging materials, advocate for EU legislation supporting product design for recyclability, and call for the development of optimized collection systems for materials dedicated to recycling and appropriate recycling infrastructures. "The rise of environmental awareness and consumer concerns as well as the increase of packaging, focused regulation, such as the Single-Use Plastics Directive, have helped companies to accelerate the development of alternative packaging materials including fiber-based packaging with a view to helping consumers make more climate-friendly choices," the association explained. "4evergreen" was created as a forum to engage and connect industry members from across the sector's value chain – from paper and board producers to packaging converters, brandowners and retailers, technology and material suppliers, waste sorters and collectors.

"Fiber-based packaging can be a game-changer for material substitution", Eija Hietavuo, Chairwoman of the new action group and Senior Vice President Sustainability Stora Enso Consumer Board, was cited. The common goal would be to deliver a holistic approach to optimize the sustainability and circularity of the packaging's life cycle. "The time to act is now!" Jori Ringman, Director General at Cepi, stated. "Our industry already has a strong track record in environmental performance and recycling, but our ambition is higher. We are driving a system-wide shift to transition to the next level of circularity and climate resilience. '4evergreen' will be the place for the whole industry value chain to co-create and collaborate for a change."

The first "4evergreen" alliance members include Nestlé, Danone, Mars, Stora Enso, Smurfit Kappa, Sappi, Metsä Board, UPM, Mayr-Melnhof Group, Reno de Medici, Mondi, Burgo, Kotkamills, DS Smith, Heinzel Group, Ahlstrom Munksjö, International Paper, BillerudKorsnäs, Huhtamäki, SEDA, SIG Combibloc, Tetra Pak, Elopak, Walki, Schur Group, Cardbox Packaging, Firstan Ltd., Westrock, Leonhard Kurz Stiftung & Co. KG, Graphic Packaging International, AR Packaging, Baumer hhs GmbH, Van Genechten Packaging Group, Sonoco and VTT. The alliance is welcoming more organizations to join the collaboration.

www.cepi.org/4evergreen

### **NEW FOOD WASTE PROCESSING FACILITY IN INDONESIA**

Tidy Planet, a technique provider for organic waste, has partnered with shredding expert Untha UK to supply an industrial-scale solution for a new multi-million-pound Integrated Waste Management Facility (IWMF) at a gas pipeline expansion project in Indonesia.

As reported, Tidy Planet has previously worked on a variety of composting projects in the global oil and gas sector. This latest venture would require numerous processes to treat plastic, metal and wood wastes as well as five additional tons of food waste generat-



ed per day at a liquid gas plant in Tanguhh. "Processing of the large volume of food wastes will be achieved with a commercial-scale version of Tidy Planet's Dehydra Dewatering system and two B2500s – the largest Rocket Composter the company manufactures", the company informed. Following a year-long tendering process, the Cheshire-based firm has also teamed up with Untha UK, which would supply an LR1000 wood shredder and an RS30 four-shaft plastic shredder as part of the bid for the IWMF. Other UK organizations are also involved in the waste management overhaul, supplying can baling systems, control packages, and packing/crating services.

www.tidyplanet.co.ukwww.untha.co.uk

### **ENTERPRISES**

# FACILITY IN RIYADH TO BE FULLY OPERATIONAL BY JULY

The Saudi Investment Recycling Company (SIRC), a wholly-owned subsidiary of the Public Investment Fund (PIF), realizes the first Construction & Demolition Waste (CDW) recycling plant in Saudi Arabia.

According to the information, the state-of-the-art facility is in the final stages of construction and will be operational by the end of July, "signaling the first step towards meeting the national ambition of diverting 60 percent of CDW from landfills by 2035 in alignment with the Kingdom's effort to accelerate the transition to a circular economy".

The facility is the first to be developed under the memorandum of understanding signed in July 2019 between

Photo: SIRC



SIRC, the National Center for Waste Management and Amanat Al Riyadh for embracing integrated waste management and recycling activities in the capital. Located in Al Khair, north district of Riyadh, the plant covers over 1.3 million square meters of land allocated by Amanat Al Riyadh. Once commissioned, it will treat up to 600 tons of CDW per hour and achieve recycling rates of over 90 percent. On its part, Amanat Al Riyadh will organize and direct all CDW collectors and contractors to SIRC's Al Khair site. The CDW will be sorted and processed in a sustainable way to produce recycled aggregates for construction projects and various road development applications.

The facility is going to receive waste and will recycle 20 million tons of CDW dumped and accumulated every year in vacant plots, as well as five million tons of annually recurring CDW disposed of in illegal landfills or old sites.





# BRAZIL: CHALLENGES FOR THE FUTURE

Brazil, the biggest country in Latin America, generates nearly 80 million tons of solid waste every year. Concerning selective waste collection and recycling, there is still plenty of room for improvement.

n 2018, 79 million tons of urban solid waste were produced in the country, Empresa Brasil de Comunicação (EBC), a Brazilian public company to manage the federal government's broadcast network, reported in November last year. The waste generation increased by less than one percent compared to the previous year. Of this total, 92 percent (72.7 million tons) was collected – up 1.66 percent against 2017; 6.3 million tons of waste remained uncollected across the cities. The figures came from the outlook of the Brazilian Association of Public Cleaning and Special Waste Companies (Abrelpe), the communication company pointed out.

According to the information, in comparison to all Latin American countries, Brazil accounts for 40 percent of the total generated waste in the region (541,000 tons a day, as per UN Environment). "The numbers listed in the outlook bring Brazil to a position considerably below other countries with the same income level. Our deficit is significant and we really need urgent measures not just to redress it, but to advance towards better management practices for solid waste", Abrelpe President Carlos Silva Filho was quoted. Estimates based on the time series showed that the country would reach a generation of 100 million tons a year around 2030. Because of the projected quantity of waste, sorting the materials out appropriately – as well as recycling and recovery – were not on a par with this growth, he warned.

As reported, one out of every 12 Brazilians have no regular waste collection service at their doorstep, due to – for example – a lack of funding; many municipalities are indebted and cannot afford these activities. Furthermore, there is a lack of awareness in society about the importance of the appropriate management of solid waste in protecting the environment and preventing diseases. According to Abrelpe, the same applies to selective waste collection and recycling rates, which are rather low. While the world would talk about circular economy and more advanced ways to sort and reuse garbage – the association's argument is cited – the country still has landfills in every region and needs to tackle a behavior problem among the population, as the Brazilians had still to learn how to dispose of trash and separate the recyclable waste.

#### Stark contrasts

The waste generation in Brazil seems to stagnate. In 2015, over 207 million Brazilians generated a waste volume of 79.9 million tons (1.7 percent more solid waste than in the previous year), the report "Municipal solid waste in Brazil: A review" stated in 2017. As described, of the collected amount 58.7 percent was appropriately disposed of in sanitary landfills, while 41.3 percent (or nearly 30 million tons) ended in controlled landfills or open dumps. At that time, the percentage of recyclable materials was low, compared to developed countries, the authors (Raquel Greice de Souza Marotta Alfaia, Alyne Moraes Costa and Juacyara Carbonelli Campos) explained in the report. There was a local difference concerning the physical composition of MSW (municipal solid waste) in towns, which reflected the respective economic power of the region. According to various studies, the highest number of recyclables (41.7 percent) was found in the South-East, followed by the Mid-West (29.72 percent), the North (27.46 percent), the South (26.87 percent) and the North-East (10.31 percent).

The waste material generated in the highest proportion in all these towns corresponded to organic matter (51.4 to 57.27 percent). In this context, the authors noted that in Brazil annually around 41,000 tons of food became waste in Brazilian towns and cities, referring to information from EBC in 2016. "As a stark contrast, millions of Brazilians live in extreme poverty; in other words, a great many people have a monthly income of less than 24 US-Dollar, and they need help from the Brazilian government to guarantee their access to food."

#### **Recycling activities**

As reported by the online publication "RioOnWatch" in 2019, 1,055 Brazilian cities had a recycling program. The country recycles one percent of its waste, the publication "The Brazilian Report" informed in July last year.

In 2015, the country recycled 602,000 tons of aluminum, the Brazilian Aluminum Association (ABAL) informs on its homepage. The relationship between this volume and the domestic consumption of aluminum would indicate a percentage of 38.5, "which exceeds the world average of 27.1 percent (2014 basis)". Of this total, 292,500 tons referred to scrap from aluminum beverage cans that corresponded to 97.9 percent of the total packaging consumed in 2015, "a figure that has placed Brazil in the best positions of the world since 2001".

"There is a wide range of government-sponsored public projects inviting investor support and participation."

As stated by Alfaia, Costa and Campos, plastic recycling in Brazil is mainly related to polyethylene terephthalate (PET) bottles, "which are abundant in the rubbish generated in Brazilian cities, and there are many waste pickers who work in the separation of this type of recyclable material". Some years ago, according to the information, about 51 percent of this material was recycled in Brazil. While 314,000 tons of PET had been recycled in 2014, one year later this figure decreased to 274,000 tons. "The drop can be attributed to low economic activity (falling demand) and a large reduction in oil prices", the authors wrote, referring to Abipet, the Brazil-

### IMPLEMENTING THE NATIONAL POLICY FOR SOLID WASTE TREATMENT

Germany and Brazil can look back on over 50 years of cooperation in the field of sustainable development. Currently the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH supports the country with a project called ProteGEEr (Support to the implementation of the National Policy for Solid Waste considering climate-protection), which ends in 2021.

In 2010, Brazil adopted a waste management policy (law 12.305), which so far has only partially been implemented, GIZ gave account. Greenhouse gas emissions in the waste sector were still rising, and CO<sub>2</sub> reduction targets for the waste sector were not yet defined for the Nationally Determined Contributions (NDCs) of the Paris Agreement. In the process of implementing solid waste management plans, municipalities would still face technical challenges. "In order to access subsidized funds, such as the Caixa fund, which provides money for waste treatment, technical knowledge and strategic planning are needed," the German organization underlined on its homepage. Reference projects were helpful to municipalities in the process of implementing waste management measures.

A new version of the national solid waste management plan was intended to be issued in December last year. According to GIZ, this would create opportunities to align it with the National Plan on Climate Change and seize the waste sector's potential for climate change mitigation. "In the short term, the objective is to implement efficient waste treatment options, which also will improve the quality of life of Brazilian citizens," the German service provider in the field of international cooperation for sustainable development and international education work emphasized. "The long term objective is climate change mitigation." ian Pet Industry Association. Also, activities in important sectors such as textiles, chemicals, the automotive industry and transportation had dropped almost 50 percent, reflecting negatively on recycling, since these industries were large consumers of raw recycled materials.

About paper recycling, the country recorded a recovery rate of 63.4 percent in 2015, corresponding to a growth of approximately four percent to the previous year; 61 percent of the paper consumed in Brazil (9.6 million tons) were recycled. This percentage had to be seen concerning the increase in the volume recovered as well as to the reduction in paper consumption, mainly printing and writing paper, the authors of the report "Municipal solid waste in Brazil" wrote. Paper consumption had been declining since 2011, culminating in a reduction of 19.7 percent in 2015 compared to 2014.

#### The Brazilian economy

The Brazilian economy is negatively affected by the coronavirus – as is happening also in other countries of the world. The country was hit by this situation at a time when the recovery from the 2015-2016 recession was weak and economic growth achieved only 1.1 percent in 2019. "On the assumption that the reform agenda continues to advance, growth is projected to gain momentum in 2020", the OECD (Organization for Economic Co-operation and Development) wrote in November 2019 on its homepage. "However, high unemployment is falling only slowly and newly created jobs are of low quality, including many informal jobs."

Covid-19 acts as a brake on economic development: According to news agency Reuters, referring to The World Bank, Brazil's economy could shrink this year by 5.0 percent due to the direct and indirect economic impact of the coronavirus pandemic. As reported, the country faces three major shocks: weak global demand, low oil prices and the economic disruption from domestic virus-containment



measures. "These shocks will reduce private consumption and may impact labor productivity, while unemployment is expected to rise. The global and domestic demand shock (will prompt) a significant drop in investment," World Bank's report "The Economy In The Time Of Covid-19" was quoted.

However, FocusEconomics, a provider of economic analysis and forecasts for 130 countries, estimates that the economy will strengthen, supported by low-interest rates and the government's reform agenda. "Delayed reforms and a prolonged Covid-19 pandemic cloud the outlook", the analysts expect. In April this year, they projected a growth of 1.9 percent in 2020. "In 2021, growth is seen accelerating to 2.4 percent", the interested reader could learn.

#### **Investment opportunities**

According to the Brazilian official guide on investment opportunities, there is a "wide range of government-sponsored public projects inviting investor support and participation". As underlined, the guide aims to support the decision-making of investors, featuring trustworthy, systematic and high-level information on selected projects, enhancing the establishment of transparent and consistent dialogue channels between public and private actors, which are of high relevance for the success of each undertaking. "The organization of this Guide was implemented by the Brazilian Investment Information Network (RENAI), part of the Ministry of Industry, Foreign Trade and Services (MDIC), the Ministry of Foreign Affairs (MRE), the Brazilian Service of Support for Micro and Small Enterprises (SEBRAE) and the Brazilian Trade and Investment Promotion Agency (APEX-Brasil)," the information says.

www.investexportbrasil.gov.br/brazilian-officialguide-investment-opportunities?l=en#

A guide of "How to Do Business and Invest in Brazil" can be found at () www.amcham.com.br/ howtobr?set\_language=en-us

Despite the difficult economic situation, there are tenders. The announcements are published on the internet:

www.dgmarket.com/tenders/list.do?sub= environment-in-Brazil-6&locationISO=br

www.tendersinfo.com/global-brazil-tenders.php

www.tendersontime.com/brazil-tenders/





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# WASTE MANAGEMENT IN VIETNAM: THE RACE IS ON

In 2015, Vietnam was number four out of five countries that dump more plastic into the oceans than the rest of the world combined. To attribute the country "drowning in waste" was not witty, but accurate. Progress in the waste treatment technology during the last years delivers what a study called "a proof for hope of waste management".



n May 2018, the Netherlands' Ministry of Foreign Affairs, CREM and Partners for Innovation published a comprehensive scoping study on the circular economy. The statistics offered that the annual Vietnamese waste production comprised more than 27.8 million tons consisting of 46 percent from municipal sources, the remainder delivered from agriculture and industry. The five biggest cities – Hanoi, Ho Chi Minh City (HCM City, former Saigon), Haiphong, Da Nang and Can Tho – are responsible for about 70 percent of the total waste generation. The municipal solid waste contains 60 to 70 percent of biodegradable residues by wet weight.

#### Landfilling quota up to 85 percent

According to the German Society for International Cooperation (GIZ), at the same time, the Vietnamese collection coverage ranged from 40 to 85 percent differing between rural and urban areas, with rates of 95 percent in Hanoi and Ho Chi Minh City. Waste diverted from disposal amounted to 44 percent without precise information about recycling and reuse, composting and utilization of energy recovery from waste or biogas. The resulting disposal share accounted for 56 percent. However, a contemporary study concerning the waste market assumes that even about 85 percent of the waste generated in Vietnam is landfilled without treatment at sites, 80 percent of them being unsanitary. According to incomplete statistics from the national Ministry of Natural Resources and Environment (MONRE), there are 450 landfills in Vietnam but only about 120 following proper sanitary regulations.

In January 2020, an article published by the World Economic Forum described the Vietnamese waste situation as "a combination of rising consumption and poor national waste management". Waste generated between 2004 and 2015 increased from 15.6 million tons to 27.8 million tons annually. Furthermore, estimations assume an increase of municipal solid waste quantity by 10 to 16 percent every year, so that the quantity per capita will quadruple in the next 15 years. 50 to 70 percent of the waste in urban areas could be recycled, but only a limited amount is handled that way at present. Hoang Duong Tung, Deputy Director of the Environment Department at the MONRE, complained that – despite some waste recycling systems installed – infrastructure and effectiveness "could not keep up with the demand".

#### **Recycling handled by the informal sector**

No wonder, as from 1990 to 2015 the plastic consumption per capita rose from 3.8 kilograms (kg) to 41 kg - an increase of 10 percent year-on-year. Especially plastic is of "growing concern", as the country is "drowning in waste", so that the tourism sector says "NO to plastic waste", online magazine headlines suggest. In Hanoi and Ho Chi Minh City about 80 tons of plastic and plastic bags are discharged daily, and in Hanoi alone, plastic accounts for seven to eight percent of the 4,000 to 5,000 tons of daily waste, Deputy Minister of Natural Resources and Environment Vo Tuan Nhan is quoted. But until recently, most of the plastic material recycled in Vietnam was imported from other countries like China and - after the Chinese ban of scrap imports - the United States. Indeed, Vietnam stopped issuing plastic recycling import licenses in June 2018 and planned to stop US scrap plastic imports in 2025. But the effect was a boosted demand for recyclable domestic plastic waste and an increased import of US plastic scrap in 2018, the research experts of Mordor Intelligence found out. And most of the recycling - usually collected by waste scavengers - is performed by manufacture handicrafts by the informal sector: either informal family businesses or small-scale enterprises specialized in recycling discarded plastic (or other waste materials).





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#### **Small profit margins**

"Recycling technologies in craft villages are mainly manual and outdated, causing serious environmental pollution. Besides, wastes from craft villages are not treated but dumped directly into the environment with municipal wastes and taken to landfills," a comprehensive paper conducted by the Vietnam Business Council for Sustainable Development, the Vietnam Chamber of Commerce and Industry and the United States Business Council for Sustainable Development explained in summer 2019. A scientific analysis of recycling structures for electro(nic) waste shows a comparable infrastructure of basic and obsolete technologies: manual dismantling works, manual and experience-based metal recycling processes, single extraction of copper and gold, no recovery of precious metals or rare earth elements. In this narrow system, there is no chance for foreign suppliers to achieve market share, especially as no financial resources for technological improvement are available. German Trade and Invest spoke in May 2018 of about 120 enterprises possessing licenses for the disposal of industry, medical and hazardous waste, but also mentioned hard market competition and small profit margins.

#### **Regulations assigned to different actors**

The Vietnamese government adopted several legislative requirements for waste treatment. Major regulations are mentioned in Decision 31/2014/QD-TTg regarding the development of power generation projects using solid waste, Circular 32/2015/TT-BCT concerning grid-tied generation projects using solid wastes, Decree 38/2015/NDCP on the management of waste and discarded materials, Decree 174/2007/ND-CP on environmental protection fee of solid waste, and Decree 118/2015/ND-CP dealing with investment incentives and schemes in various waste treatment sectors. The Law of Environmental Protection delivers modern legal conditions for a sustainable waste treatment business, and a National Waste Management Strategy provides a detailed framework for building a circular economy focusing on the complete waste collection by 2025. The aim is a collection rate for municipal waste of 90 percent with a recycling share of 85 percent and for industrial waste of 90 percent and 80 percent respectively. Furthermore, the Prime Minister issued a national action plan on maritime plastic waste management to reduce 75 percent of plastic debris by 2030. But - as the before mentioned scoping study expresses - "institutional arrangement of solid waste management in Vietnam is complex and involves many Ministries in the system". The online-magazine VietNamNet Global stated in Mai 2019 that solid waste management in Vietnam has been "assigned to different ministries and agencies, which are inconsistent from central to local levels" and is still exposing a lot of shortcomings.

#### **Only 36 incinerators and composting sites**

In fact, a GIZ-list of treatment sites in 2018 included merely 36 treatment facilities: five incinerators, 12 compost sites and 18 composting and incineration sites without energy recovery. The only waste-to-energy plant worked since 2016. According to foreign investors assistant firm Vietnam Briefing, the country's installed capacity for energy recovery from biomass and solid wastes in June 2018 reached 352 MW (megawatt) and 2.4 MW respectively, while the poten-



tial from that material was around 2,000 MW and 320 MW respectively: The Vietnamese energy demand, however, ranges from 10 percent by 2020 and eight percent by 2030, with a fourfold increase of electricity consumption in 2030 compared to 2014.

#### Incentives for local and external investors

The shortfall in capacity became more serious so that the big cities were forced to react. The capital city of Hanoi, for



example, inaugurated its first industrial waste-to-energy facility in April 2017, with a waste treatment capacity of 75 tons per day and a power generation capability of 1.93 MW. The equipment came from Japan's Hitachi Zosen Corporation, and 22.5 from 29 million US-Dollar investments were raised by a Japanese governmental organization. In December 2018, a waste-to-energy factory with an investment of 47 million US-Dollar was inaugurated in Thoi Lai district of Can Tho; to be constructed by China Everbright International, it is expected to help address the solid waste pollution the Mekong Delta city is recently facing. In Ho Chi Minh City, "sufficient funds are available for transport and treatment" of municipal waste and "hundreds of billions of dong per year" were invested for treatment, according to VUFO-NGO Resource Centre in HCM City. Similarly, a solid waste management expert from the HCM City Department of Natural Resources in September 2019 gave an account that the city government had offered incentives to local and foreign investors to invest in waste treatment projects. At the same time, the planning of a 400-million US-Dollar waste-toenergy plant with the first phase capacity of 2,000 tons per day became public. Additionally, two months later, HCM City started to work on its first industrial and hazardous waste treatment and recycling plant, officially operational in September 2021, handling 500 tons per day and turning 70 to 90 percent of the waste into materials and products. Until then, the city supposedly ran 13 licensed, but small hazardous waste treatment facilities with a limited capacity of 250 tons per day and untreated waste volumes delivered to other localities.

#### Number of foreign competitors growing

Other foreign competitors entered the market. In February 2017, Australia's Trisun Green Energy Co secured approval to build a 520 million US-Dollar waste treatment plant outside Ho Chi Minh City. The facility's application of a plasma gasification technology was designed for burning 3,000 tons of material, i.e. about 40 percent of the city's volume. More than that, the company set a goal of building up between 12 to 20 electricity-generating waste treatment plants capable of replacing coal-fired plants in Vietnam in the next five to ten years, the firm said on its website. Finnish waste technology suppliers became interested too: In July 2018, Doranova Oy planned two landfill gas plant projects in HCM City; Watrec launched a waste to energy project in Hanoi and started a technical consultancy related to a large scale waste-to-energy project in HCM City; Valmet was concerned in cooperation and technology transfer with Vietnamese partners; and BioGTS kept an eye on a biogas technology application in waste and wastewater treatment in Dong Thap province. In October 2018, Japanbased industrial technology firm Hitachi Zosen Corporation's subsidiary, Hitachi Zosen Vietnam Co. Ltd., declared

Photo: falco / Pixabay.com

to expand its waste-to-energy operations in Vietnam and the development of plant constructions in the capital of Hanoi and neighboring cities in Northern Vietnam. Furthermore, in June 2019, nine companies even joined hands for a packaging recycling alliance: Coca-Cola Vietnam, FrieslandCampina, La Vie, Nestlé Vietnam, NutiFood, Suntory PepsiCo Vietnam, Tetra Pak Vietnam, TH Group and URC Vietnam teamed up and launched the Packaging Recycling Organization Vietnam (PRO Vietnam) in HCM City. It seems that – as Mordor Intelligence expressed – "the number of foreign competitors is constantly growing and only quality is often not enough to sustain as a long-term business partner."

#### International associates wanted

The majority of the companies in Vietnam's solid waste management industry are state-owned, while foreign countries or large, partly multinational companies with Vietnamese subsidiaries provide the technology. However, neither central nor local governments dispose of financial means to fund state-of-the-art and sustainable waste treatment projects. So, they are looking at foreign associates to tackle waste. For example, in 2018, the World Bank gave a credit of 202 million US-Dollar to Vietnam for a renewable energy development project, while the Asian Development Bank designed a waste-to-energy scheme to increase the energetic usage of waste. At a working session with representatives of the American Chamber of Commerce in Vietnam, an official speaker, for instance, expressed his hope that "the US business community will take an active part in investing in and providing technical support for the city"; representatives of the US firms answered that HCM City is very attractive to many investors. Swedish Ambassador to Vietnam, Ann Mawe, is cited with the words: "Sweden would happily share its experiences (on the circular economy) with Vietnam." And in their scoping study, the

### The waste-to-energy sector in Vietnam, without doubt, holds a lot of potential.

Netherland's Ministry of Foreign Affairs, CREM and Partners for Innovation phrased a roadmap – interesting for Dutch and Vietnamese stakeholders – to benefit from the opportunities the transition towards a circular economy could offer in Vietnam: "Potential partners involved are identified, as well as support and instruments by the Dutch government that could support the action."

#### "Consider Vietnam!"

At the end of 2017, experts realized a lack of favorable investment conditions for foreign investors, who were first of all waiting for new public-private partnership regulations that were not fully developed even in Mai 2018. Additionally, to increase investments in new plants or capacity expansion of existing facilities, the government at that time was obliged to support the domestic firms financially as it takes time to recover capital investments in the sector, Vietnam Briefing stated. The waste-to-energy sector in Vietnam, without doubt, holds a lot of potential. But Nguyễn Ngọc Lý, Director of the Center for Environment and Community Research, is skeptical. She is quoted with the words: "Vietnam has been struggling against increased solid waste discharge into the environment, while treatment facilities are unlikely to catch up for decades." So, the country is well advised to tackle the issue head-on and invite interested parties with the welcome of the Embassy of Denmark, Vietnam: "Looking for a market with an increasing need to invest in new waste management technologies? Consider Vietnam!"



## THE FIBERSORT PROJECT

n March this year, the partners of the European Fibersort project reported that their machine is ready to start "valorizing global textile waste". According to the information, this technology can automatically sort large volumes of garments and finished products by fiber composition.

The accelerating consumption and disposal practices in fashion cause textiles entering the market to reach their end-of-use rapidly. In North-West Europe alone, around 4.7 million tons of post-consumer textile waste is generated every year, a small portion of the global mountain of textile waste. On average, only 30 percent of these textiles are collected separately - the rest is lost within the household waste. "In the best-case scenario, these textiles are sold in the second-hand market both locally and internationally", Circle Economy, the leading partner of the Fibersort project, informed. "The remaining textiles are considered non-rewearable textiles due to their unsuitability for the second-hand market or the market saturation that second-hand clothing is currently facing. Almost all of these textiles are currently being downcycled, incinerated or landfilled. Nevertheless, 24 percent of the textiles collected have the potential to be recycled into new textiles, but currently are not." These textiles would represent 486,000 tons per year.

Automated sorting technologies could enable the industry to turn non-rewearable textiles that currently have no other destination than downcycling, landfill or incineration into valuable feedstock for textile-to-textile recycling. One of these technologies is the Fibersort, a Near Infrared (NIR) based technology able to categorize textiles in 45 different fractions based on their fiber composition and color. "Over the past years, the technology has been optimized, tested and validated to prepare it for commercialization", a press release said. The Fibersort were now able to sort about 900 kilograms of post-consumer textiles per hour.

# "Fibersorted materials are ready for the market"

According to the Fibersort partners, the success of the technology is highly dependent on the end-markets that help to transform textile waste into new resources. During the project, they have worked with 360 industry stakeholders - that have participated in working group and producer network - to better understand these end-markets, assess the potential of the sorted materials and validate the business case of automated sorting as a key enabler of textile-to-textile recycling. "Results from these activities are available through project publications and Fibersorted materials are now commercially available for other organizations to test their potential for textile-to-textile recycling".

#### **Challenges remain ahead**

"There are clear opportunities to successfully integrate automated sorting

technologies and recycled post-consumer textiles across the value chain", the partners are convinced. However, several challenges would remain to ensure the long-term implementation of these technologies concerning financial and technical feasibility as well as the opportunities to scale. Collectors, sorters, recyclers, manufacturers, brands and policymakers would have both opportunities and responsibilities to address these challenges. Although the Fibersort project has reached its ending date in March, "the partners in the Fibersort consortium expect to continue working towards this circular ambition, as well as encouraging others to join the journey".

#### **Barriers and opportunities**

In the final report of the Fibersort project, the key barriers and critical success factors for an effective market uptake of post-consumer recycled textiles and automated sorting technologies are described.

The biggest hurdles are:

 Making "recycled" the new norm: exploring socio-cultural barriers. Culture – whether organizational, national or community-driven – shapes individual perceptions that



impact on consumer and industry practices. The lack of urgency in appropriately handling the growing mountain of textile waste as well as the negative perception of recycled content in textiles must be addressed.

- Creating new materials from postconsumer textiles: overcoming physical barriers. Textile-to-textile recyclers are in need of reliable feedstock for their processes. While sorting by fiber composition and color through automated nearinfrared technology enables these materials to be sorted, consistency, quality and chemical safety of the post-consumer textiles are essential.
- Making recycling a sound business choice: reducing economic barriers. To secure a thriving end-of-use value chain for textiles, it is crucial to be aware of market demands, costing and pricing of sorted postconsumer textiles. Accelerating the development and implementation of recycling technologies as well as ensuring price parity with virgin alternatives will determine its financial feasibility.

**The Fibersort project** (budget: 3.38 million Euro, timeline: 2016 – 2020) was funded by Interreg North-West Europe (NWE), a European Territorial Cooperation Program funded by the European Commission with the ambition to make the North-West Europe area a key economic player and an attractive place to work and live, with high levels of innovation, sustainability and cohesion.

The project partners – from Belgium, the Netherlands and the United Kingdom – are Circle Economy, Procotex Corporation, ReShare – Stichting Leger des Heils, Smart Fibersorting, Valvan Baling Systems and Worn Again.

The opportunities are:

- Develop a thriving collection and sorting industry by ensuring there is a business case to collect and sort the growing mountain of post-consumer non-rewearable textiles.
- Create a market pull for recycled content by incorporating recycled

content in new textile products developed.

- Assess and communicate the urgency of action within organizations as well as to citizens and consumers.
- Maximize the quality and consistency of post-consumer inputs by providing accurate feedstock for the relevant recycling technologies.
- Safeguard the value of sorted materials as recycled content by testing these materials for diverse applications and ensuring product safety.
- Accelerate the implementation of recycling technologies by investing in their development and scaling.
- Ensure the price parity of recycled with virgin by lowering processing costs of post-consumer textiles and recognizing the true cost of virgin alternatives.

 www.mailchi.mp/a19c0f92617d/
 fibersort-policy-recommendationsearly-release-1150589?e=ba0c96943a
 www.circle-economy.com/programmes/textiles/fibersort
 www.valvan.com/products/
 equipment-for-used-clothing-wipers/
 sorting-equipment/fibersort/

### THE ARTIST OF OUR COVER PHOTO AND HIS COMMITMENT

Benjamin Von Wong, born 1986, is a Canadian artist, activist and photographer, who is best known for his environmental art installations and hyper-realist art style. He is also an advocate against Ocean Plastics. In 2007, he gradu-



ated from Canadian McGill University with a degree in Mining Engineering. Von Wong began his career working as an underground mine planning and design engineer, but he left engineering to pursue a career in the arts in 2012.

When the NGO Nexus wanted to highlight the problem of fast fashion during the summit in December 2018, which took place in Egypt, Benjamin Von Wong and Laura Francois along with a team of volunteers realized the "The World's Tallest Closet", to represent "the number of clothes we accumulate over a single lifetime". The large installation was created entirely with recycled aluminum, steel and wood, and housed

around 3,000 items of donated clothing. In less than five days, the entire structure was assembled at the Mall of Arabia in Cairo by a team of volunteers and CanEX Aluminum. "With a vision of building a tangible representation of our personal clothing consumption, the 'Tallest Closet in the World' encourages the public to take small steps towards reducing the amount of clothing that ends up in landfill", the project description says. The clothing used for the creation of the installation was donated to local NGOs supporting refugees; at that time over 220,000 refugees lived in Egypt.

www.clothingtheloop.org/the-project-1/, www.vonwong.com

### **TEXTILE RECYCLING IN FINLAND**

n October last year, the company Lounais-Suomen Jätehuolto Oy (LSJH) has launched a refinement plant pilot in Turku, focusing on the recycling of post-consumer textiles. The objective is to ensure a recycling solution for all the end-of-life textiles generated in Finland. The refinement plant project has been prepared in cooperation with other Finnish municipal waste management companies and the national Telaketju network. One of the key development targets in the plant project has been to ensure high-quality sorting based on fiber composition. LSJH has been developing the near-infrared (NIR) identification technology in cooperation with the Lahti University of Applied Sciences (LUAS) and the equipment supplier, Spectral Engines.

At the plant, the end-of-life textiles collected from private households will be mechanically processed by opening up the fabrics to create recycled fiber. The goal of the pilot stage is to ensure that the fiber produced can be utilized on a larger industrial scale, the information on the Telaketju homepage says. "The future goal is to set up a full-scale refinement plant, which will have the capacity to process all the post-consumer textiles in Finland, offer processing services for the industrial side flows and textile waste, as well as potentially receive and process end-of-life textiles from the Baltic Sea region." During the pilot stage, the intention is to proceed from manual sorting towards an automated identification line, which would enable the processing of larger volumes of end-of-life textile flows.

The refinement plant project involves many industrial cooperation partners, which have actively engaged in the Telaketju network. The close product development cooperation with numerous textile companies has the support of the national Telaketju 2 project, launched last year. Financing for the refinement plant development is being provided by Finnish municipal waste management companies and by the Ministry of Employment and Economy. The pilot plant was granted 1.5 million Euros in investment aid by Business Finland.

#### About Telaketju

The "Telaketju" name is short from textile recycling, sorting, and utilizing network, in Finnish. The project includes developing the collection, sorting out, and refining processes of end-of-life textiles. Moreover, it enables the development of business models related to the circular economy. "In Telaketju, a national ecosystem of knowledge is being advanced, building a platform for the creation of a new and strong industry with multidisciplinary collaboration."

The first phase of the Telaketju project started in April 2017 and ended in January 2019. The second phase began in May 2019. Telaketju 2 aims at building a business from the circular economy of textiles. The scope of the project includes novel circular economy business models aiming for better material efficiency and increase material and product life, as well as business-related to textile recycling.

https://telaketju.turkuamk.fi/en

THE RECYCLING PROS. **Комртесн** 



Incredibly tough: the Terminator direct Single-shaft shredder



Shaken, not stirred: the Ballistor Ballistic separator



Round up: the Flowerdisc Disc screen



Drum-roll: the stationary drum screens

### Sweden:

# LARGE-SCALE AUTOMATED TEXTILE SORTING FACILITY

he plant represents the third phase of the Swedish Innovation Platform for Textile Sorting (SIPTex) project; the start of operation is intended to begin in summer this year. In July last year, the IVL Swedish Environmental Institute has been given green light for a collaborative initiative to establish this industrial-scale automated textile sorting plant. Vinnova, the Swedish Innovation Agency, is to invest 22 million Swedish Krona (about 2.8 million US-Dollar) in the project that will develop innovative solutions to achieve the Agenda 2030 sustainability goals. The plant will be operated by waste and recycling company Sysav, which also financially supports the project.

Twenty-one major Swedish textile, fashion and furniture companies, municipalities, charities, research institutes and authorities, led by IVL Swedish Environmental Institute, collaborate in the SIPTex project. According to the information, the potential for increasing textile recycling in Sweden is enormous, as only about five percent of the textiles placed on the Swedish market are recycled. Each year, about 140,000 tons of new textiles are put on the Swedish market.

#### Goal: Sorting of 16,000 tons per year

The goal is to slowly increase the number of textiles recycled from 3,000 to 16,000 tons over five years. Today, post-consumer textiles are sorted manually - primarily to identify garments that can be sold for reuse, IVL gave account. "Automated sorting processes are necessary to sort the increasing volume of textile waste that cannot be reused efficiently so that it can be used for fiber to fiber recycling", Maria Elander, who is leading the project for IVL, was quoted. The project had previously shown that automated textile sorting has the potential to provide both a high degree of separation and high purity in the sorted textile fractions.

The SIPTex plant uses near-infrared and visual spectroscopy to sort mixed textile waste. The technology has been tested and optimized to meet the needs of potential customers in a pilot plant over one year, IVL underlined. "The results and know-how gained can be utilized when the project is scaled up." The idea is to create a sorting solution tailored to the needs of textile recyclers and textile companies "to be the link that is currently lacking between textile collection and highquality recycling".

SIPTex, the Swedish Innovation Platform for Textile Sorting, is funded by Vinnova and is a step three project within the challenge-driven innovation program. It is led by IVL Swedish Environmental Institute and implemented in collaboration with a broad consortium consisting of research institutes, authorities and actors from different parts of the value chain for textiles: Berendsen, Boer Group, Eco TLC, Gina Tricot, HM, Human Bridge, Ica, Ikea, Kappahl, Swedish Chemicals Inspectorate, Cycle and water, Malmö City, Ants, Swedish Environmental Protection Agency, Re: newcell, Red Cross, Stadium, Stockholm water and wastewater, Sysav and VTT.

www.ivl.se/english

www.vinnova.se/en/p/swedish-innovation-platform-for-textile-sortingsiptex/

### YARN COLLECTION MADE OF RECYCLED MATERIALS

Belgian company European Spinning Group (ESG) offers an upcycled yarn collection of recycled cotton, recycled denim or recycled polyester, blended with virgin raw white and dope dyed fibers for environmentally friendly circular fabrics with optimal performance. As reported on www.circulary.eu, more than 40,000 kilograms of post-consumer material was recycled and upcycled with the ESG "Green" collection. The recycled post-consumer yarns of the denim collection would generate the following environmental savings (per kg):

- 50 % Denim / 50 % Tencel: 3,485 liters (I) water, 1.58 kilogram (kg) CO<sub>2</sub> emission, 6.32 kilowatt-hours (kWh) energy.
- 25 % Denim / 25 % Tencel / 50 % Viscose: 1,743 l water, 0.79 kg CO<sub>2</sub> emission, 3.20 kWh energy.
- 25 % Denim / 25 % Tencel / 50 % rPET: 1,743 l water, 1kg  $CO_2$  emission, 5.40 kWh energy.

The energy use in the spinning mill is optimized by using solar energy, ESG underlined. "Designing smarter in terms of disassembly and reuse is taken into account during every step." Furthermore, the company has initiated the #hackyourjeans project as an on- and offline platform, resulting from a cooperation between ESG and (social) industry, education, designers and network organizations. "The project entails circular product development and awareness creation on project design, eco-design, eco-awareness and social impact of the circular economy", ESG explained. www.esg-group.eu/en/collections/green

## UNLOCKING THE VALUE OF "HIDDEN" METALS

By Peter Streinik, metal recycling specialist, Untha shredding technology

The world of metal recycling is never straightforward, with sometimes the slightest market variable causing significant volatility in global trade. But throw Covid-19 into the mix, and like many industries, scrap became an even more complex place to be.

When the lockdown was first announced, certain countries, such as Italy, brought everything to a halt. Others saw reduced capacity, with only 40 percent of larger yards remaining operational in France, for example, and smaller to medium-sized sites closing their doors. Merchants were restricted by curfew hours in places like Saudi Arabia, while in the UK and USA, the industry was granted critical status, meaning yards could stay open. It was perhaps unsurprising to see such geographical variances, which added to the difficulties surrounding the movement of materials in the earlier weeks. There have certainly been periods of slower trade, but there have also been rallying cries for scrap businesses to get the credit they deserve for being the lifeblood of the resource sector.

Our own – albeit anecdotal – conversations with the industry have revealed several large MRFs and metal recycling specialists pressing ahead with innovations when it comes to the handling of scrap. Because still, too much metallurgical content remains hidden or locked within redundant products, which continues to limit the amount of material salvaged for smelting. And some niche operators are determined to address this. They are looking to the future.

When it comes to composite materials within small and large domestic appliances for example – as well as many other types of WEEE/e-scrap too – the environmental and commercial advantages of liberating valuable metals is fairly widely acknowledged.

# Effective material liberation strategies

That is not to say the process is straightforward or that recycling rates are always maximized. Many operators rely only on traditional, cumbersome shear equipment to cut metals down because the perceived high-wear nature of metal shredding is deemed



Peter Streinik

too cost-prohibitive. However, dependence on this basic shear methodology means alternative sorting, grading, separation and size-reduction processes are overlooked and metal recyclate quality typically remains low as a result.

Machinery such as high-speed hammer mills – which work by smashing material into smaller pieces with repeated impact blows – typically create vast amounts of dust. This dust is useless, costly and it poses a fire and operator wellbeing risk. This process also struggles to achieve the particle refinement required for downstream separation technologies to effectively do their job.

Mindful of the limited revenue potential associated with these approaches, recyclers elsewhere are investing in more sophisticated processing lines complete with shredder, overband magnet to extract ferrous metals, eddy current separator (ECS) to separate any non-ferrous metals, and optical sorter to clean anything the ECS has not already refined. The greater the level of quality metals recovered, the higher the revenue potential. The recovery of high-worth platinum group metals (PGMs) and rare earth metals (REMs) could make for a particularly profitable operation.

#### "Undiscovered" metal recycling opportunities

Some operators are already familiar with such "best practice" metal recycling methodology, and are consequently exploring the market to see "what's next?". It is a good thing that they are searching for further opportunities because they do exist in the form of "wastes" that are notoriously tricky to handle. But with engineering advancements and clever process design, heightened recovery rates are certainly achievable.

Millions of bulky end-of-life mattresses are disposed of per year, in the UK alone, for example – with many of them being dumped illegally. But it is possible to size reduce 200 of these per hour with slow-speed, high torque and economical machinery. Then clean flock can be used for alternative fuels and the metal extracted for smelting. That is an important waste stream to get to grips with, considering the ambitious landfill diversion targets for mattresses.

But this is not the only tricky application where metal recycling potential remains untapped. The global waste industry is sitting up and paying

more attention to tire processing, for instance, given the growing demand for tire derived fuel (TDF). However, a valuable by-product of a savvy tire handling line is metals, which would otherwise remain trapped in these bulky, toxic products. That is not all – one of our waste wood shredding clients is generating more than 3,000 British Pound (editor's note: about 3,760 US-Dollar) of revenue per week from the sale of clean metals extracted directly off the magnet belt. The difference with these latter described applications is that they are renowned for being difficult and, as such, have long been avoided. But so many people are focusing on processing the "good" – or easy – material. Only by developing ways to treat dirtier or more complex materials will we be able to establish truly closed-loop models that turn more "waste" products into reusable resources.

# SWITZERLAND HELPS TO BOOST EGYPT'S E-WASTE RECYCLING INDUSTRY

n March this year, Switzerland and Egypt agreed to extend the Sustainable Recycling Industries (SRI) project - originally launched in the country in 2016 and completed in 2018 – through an additional grant contribution for the period 2020-2023. The first project, launched 2016 in Egypt, aimed to support sustainable integration and participation of small and mediumsized enterprises in the recycling of electronic waste (e-waste) in the country. The project was successfully completed in 2018, SRI gave account. "The continuation of the project for the period 2019-2023 seeks to consolidate the outcomes achieved so far." The new activities would address the remaining challenges and "contribute positively to the areas of policy and legislation, standard requirements, technology and business development".

As reported by the Egyptian Ministry of Communications and Information Technology (MCIT), the Ministry of Environment, in collaboration with MCIT, "has been inventorying the e-waste recycling sector, with the size of e-waste in Egypt amounting to 88,000 tons, annually". The Environment Ministry had also developed legislations "to transform the unofficial e-waste sector into an official one, in cooperation with the United Nations Development Program (UNDP), through the safe disposal of e-waste project". The Swiss agency



that will execute the second phase of the project is the Swiss Federal Laboratories for Materials Sciences and Technology (EMPA), together with the World Resources Forum and Sofies. The local implementing partner is the Ministry of Communications and Information Technology and the Centre for Environment and Development for the Arab Region and Europe (CEDARE).

According to the information on the SRI homepage, the extension in Egypt is part of a larger program that will be implemented in five countries: Egypt, Colombia, Ghana, Peru and South Africa, with total funding of 6.5 million Swiss Francs (about 6.7 million US-Dollar). The funding is shared from the Swiss State Secretariat for Economic Affairs (SECO).

#### About SRI

In developing countries, the recovery of materials from waste is mainly

carried out by thousands of individual workers in what is referred to as the "informal" sector. This involves numerous risks, such as environmental pollution, health hazards and the cross-contamination of hazardous substances. In general, there is a lack of quality and sustainability standards. The State Secretariat of Economic Affairs (SECO) has been developing knowledge partnerships in the area of e-waste since 2003.

As part of the "Swiss e-Waste Programme", Switzerland has supported India, China, South Africa as well as Columbia and Peru in their efforts to improve their e-waste management systems. Meanwhile, appropriate regulations have been enacted in virtually every partner country. These results have led to the development of a comprehensive approach in the form of the "Sustainable Recycling Industries" (SRI) follow-up program.

The development objective of SRI is the sustainable integration and participation of small and medium enterprises from developing and transition countries in the global recycling of secondary resources. The program organization includes experts and builds strong local partnerships with governmental organizations, industry and the civil society.

# SCIP – THE NEW ECHA-DATABASE FOR SUBSTANCES OF CONCERN

Author: Dr. Dipl. Chem. Beate Kummer

CIP stands for "substances of concern in products" and is a new database that will be set up by the European Chemicals Agency (ECHA) and be accessible in all Member States of the European Union (EU).

It is planned to feed it with information on "substances of concern" in products. This information will be made available to waste recycling companies, which will then know which waste streams contain that material. The main target of the database starting in January 2021 is to finally remove such hazardous substances from the economic cycle and thus be one step closer to the EU Commission's goal of a "Toxic-Free Environment".

However, all manufacturing companies are well-advised to get to grips with it as quickly as possible, because data acquisition will be the real challenge. For example, when a car or electronic device is placed on the market in the EU, there are highly complex supply chains during the production process. It is usual to find hundreds of suppliers in Asian countries or on other continents. However, the database can only be "fed" if all the necessary information from all suppliers is available. Manufacturers of less complex products such as packaging, toys, or textiles are also affected.

Read the whole article on 
www. global-recycling.info/archive/4027

## **USA: RECYCLING OF COAL MINE EQUIPMENT**

The metal division of Land Betterment Corporation can clean up the environment by entering into a partnership to recycle retired coal railcars and old coal mine infrastructure. As reported, it has entered into a multiyear agreement with a "third party scrap metal company". Under the terms of the partnership agreement, the company will allocate

certain areas of its Jasonville (Indiana) property to receive, store, and process retired coal railcars to be recycled and reused for alternative, modern purposes. Additionally, the partner "will have the ability to assist Land Betterment expedite the reclamation of the old Gold Star coal mine (formerly known as the Landree Mine) through processing metal infrastructure, once used at the mine, to be recycled and to further accelerate the Company's sustainable community development project slated to be built on this site". Land Betterment is in the process of a major environmental remediation and repurposing project at the former Landree Mine, which was bought through an asset purchase in August 2019 from an insolvent hedge fund.

# **Systematic Clean Air Techology**



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### **APPLYING STANDARDS TO THE CIRCULAR ECONOMY**

#### By Natalie Mouyal

The circular economy calls for a radical shift in production and consumption. Continual cycles recover and restore products, components and materials through strategies such as reuse, repair, remanufacture and, ultimately, recycling. It is a systemic approach to managing resources.

Material efficiency is an essential part of the circular economy. It consists of the preservation of materials by making products more durable and repairable. It also facilitates the recovery and recycling of material at the end of the product life. The ultimate objective of material efficiency is to keep materials in use for as long as possible – and potentially forever.

Material efficiency can be placed into a hierarchy during a product's use and waste phases. The most favorable strategies call for the design of products associated with a longer product life using the least amount of natural resources, while the least favorable strategies represent the loss of a material resource by incinerating the material and recovering its energy. In a truly circular economy, landfills are not an acceptable option.

# Designing products for material efficiency

In the design phase, manufacturers should consider the materials used in the construction of a product. For example, they can try to reduce the number of materials used by optimizing the product design and by selecting recycled materials or reused components. Focusing on the use phase, products should be designed in such a way that their lifetime can be extended by making them easy to repair and upgrade or reuse. Since products will be reused (including refurbishment or remanufactured), and thus have mul-



Natalie Mouyal, IEC Communications Officer

tiple owners, manufacturers should also facilitate upgrades of soft- and hardware and the removal of sensitive data. Also, parts should be designed to endure multiple cleaning and dis- and reassembly cycles. Products should be designed for an efficient end-of-life. That means that useful materials and components can be easily and safely recuperated by, for instance, making the product easy to disassemble.

#### How standards can help

To facilitate products to last longer, standards are needed to ensure that, amongst others, product safety, performance and reliability are sufficiently taken into account. Issues such as data removal and security must also be considered as products are reused and change ownership.

Moreover, a holistic approach is needed to ensure that the protection of the environment is not detrimental to areas such as product safety, EMC and performance. The legislation is expected to require the increased use of used parts as well as products that can more easily be repaired or remanufactured. Standardized methods and tools will be needed to assess aspects such as the proportion of reused components or recycled content in a product, and how to assess the ease (or difficulty) with which a product can be repaired or remanufactured. Also,



standards will be needed to guarantee the properties of the used material as well as to define the requirements for parts reliability.

Within the IEC – International Electrotechnical Commission, several committees have developed standards that support material efficiency for electrical and electronic products. Some examples include:

• IEC TR 62635 with information on product end of life, including the recyclability rate calculation.

**IEC** work permits universal access to electricity, ensures that electrical and electronic hardware and devices function, and helps enable world trade. It empowers countries to participate in global value chains and companies to build safe, efficient products that can be sold everywhere. () www.iec.ch

• IEC TR 62824 with guidance about material efficiency considerations in the eco-design of products.

### MARKETS

- IEC 62309 which examines the dependability of products containing used parts.
- IEC 63077 which specifies the process for ensuring the performance and safety of refurbished medical imaging equipment.

New standards covering requirements for material efficiency in the design of products, such as circular ready design, are needed, and plans are underway to start such standardization work in the IEC.

### **PORTUGAL SUSPENDS WASTE IMPORTS**

Portugal has suspended imports of waste until the end of 2020 to protect domestic landfill capacity, news agency Reuters reported in May, referring to a statement of the government. The country usually attracts waste from other European states because of its low waste management

fees: The treatment of a ton would cost 11 Euro; the European average is about 80 Euro. "This decision is intended to ensure we have sufficient national capacity in waste processing facilities", the government was quoted. The country had already blocked 246,000 tons of waste from entering since the start of the year, and no new imports would be accepted. The government is due to revise its laws on landfills and waste management this summer, as waste reduction and recycling targets become harder to attain due to the pandemic, the news agency stated.



### **GLOBAL LAUNCH ON A DIGITAL PLATFORM**

n June, Tomra Sorting Recycling launched globally – via internet – the new generation technology "Autosort" and "Autosort Speedair", and also outlined plans for the forthcoming launch of a third new solution.

"The 'Symphony of all Sorts' theme was chosen to reflect the way in which the latest generation Autosort and its complementary products create a perfectly harmonized symphony to sort all kinds of waste with advanced accuracy and sophistication," the company explained. At the digital event, experts from across Tomra's global teams delivered presentations about the latest products.

Based on the positive feedback received from professionals, the manufacturer anticipates high levels of interest in the most advanced model of its new generation system. "Compact, highly flexible and upgradable, Autosort brings together the very latest in Tomra's technologies to deliver advanced accuracy of complex sorting tasks at high throughput rates." The system could be easily integrated into any existing or new sorting processes, as a great number of initial pilot projects have confirmed.

According to the provider, the machine is "capable of separating materials, which are difficult or even impossible to separate using conventional technologies". Incorporated as stan-



Autosort Speedair



Volker Rehrmann, Executive Vice President, Head of Tomra Recycling/ Mining & Circular Economy

dard is the "Sharp Eye" technology: It increases the light efficiency while maintaining the same energy consumption, enhances sorting sharpness and improves the separation of difficult to target fractions. The unit also incorporates the latest and improved version of the manufacturer's patented "Flying Beam" sensing technology, the provider informed. "Better light efficiency enables higher performance at low operating costs, compact design enables flexible and easy installation and enhanced light signal efficiency results in improved detection."

Optional technologies include the new "Deep Laiser". Its object recognition would enable a deeper sorting sharpness to improve the performance of the sorting process. "Another application area is the use of Artificial Intelligence via Deep Learning," the company underlined and assured that the technique developed by Tomra is one of the first fully integrated Deep Learning systems on the market.

#### High-speed sorting with air

Delegates of Tomra's digital launch event also found out about another new product. "Autosort Speedair" is an additional component to the "Autosort" range and is designed to stabilize light materials such as plastic films or paper on a high-speed conveyor, thus generating a higher throughput and enhancing sorting quality. The system incorporates speed-controlled fan-driven air inlets that generate a constant air stream over the conveyor belt to prevent material from moving. By doubling the speed of the conveyor belts up to six meters per second, "throughput is much higher and the output quality is consistently high". Customers benefit from a better return on investment, as well as lower installation and running costs, Tomra underlined. "Additionally, as the first system on the market with no belt cover, access to the unit for maintenance is much faster and the likelihood of a material blockage is much lower compared to conventional high-speed systems in the market, as is the risk of machine downtime."

With sorting and recycling plants demanding even higher levels of automation than ever before, Tomra will launch later its first robot, the "Autosort Cybot". The system would comprise a new generation Autosort scanner, an electromagnetic sensor and a robot arm. "It is the first robot on the market that combines four technologies at once: Near Infrared (NIR) and Visible Light (VIS) spectroscopy, "Deep Laiser" and if required, induction for ferrous and non-ferrous metals recovery." Prior to its official launch, material tests can be carried out at Tomra's Test Center to confirm its capabilities.

www.symphonyofallsorts.com/ autosort

Advertorial:

### **ARTIFICIAL INTELLIGENCE: THE RECYCLING REVOLUTION**

The evolution of artificial intelligence these past years has been dazzling. On the one hand, there is a permanent competition in the field of software to have leading algorithms, the most innovative and "deep" neural networks, and to see which one is the one more implemented and spread through the different industrial sectors. On the other hand, the field of hardware has evolved through the manufacturers of devices because of "gaming", to make the computation of the beforementioned algorithms affordable.

We are living a moment of a technological revolution. The industry's need to pivot towards industry 4.0 is causing the entry of new technologies capable of disrupting and modifying the industrial status quo. This mix of factors and improvements is happening at an astonishing speed and allows human beings to put within the industry's reach and automation sector applications that had been discarded until now.

Picvisa has joined this generated ecosystem as a propellant and implanter of this technological revolution to offer its customers innovative solutions and highly competitive value so far unat-



tainable for the recycling sector. The company has approximated different solutions to latent problems in the recycling sector by integrating artificial intelligence to both optical sorters and robotic units.

This list below shows six possible solutions the product Brain by Picvisa offers to the market:

- 1. **Recovery Solution:** allows recovery of recoverable material such as PET bottles, HDPE, bricks, cans of end of line treatment flows
- 2. **Tray Solution:** allows separating food trays from bottles of the same





material, simply by their shape, color and texture

- 3. Film Solution: allows to separate film (PE bags) from bottles of the same material, simply by its shape, color and texture
- 4. Silicone Solution: allows separating the silicone tubes always existing in the HDPE flows
- 5. Glass Solution: allows the glass to be separated by colors
- 6. Medicine Solution: allows in a flow of mixed medicines to select those specific ones that you want to separate

### We are living a moment of a technological revolution.

The solutions presented allow automating processes that until now could only be manual because they required a high level of flow interpretation that the existing algorithmic was not able to solve. But as the company's solutions show, the new algorithmic allows a great specialization of the solution allowing customized solutions for Picvisa's clients.

Picvisa considers the implementation of artificial intelligence throughout its product catalog as a strategic axis in its development. The company wants to be a pioneer and promoter of the application of artificial intelligence in the recycling sector. It is Picvisa's way of playing a part in the contributions to a more sustainable society.

www.picvisa.com

### ADuro Shredders: **NEW PRODUCT LINE FOR RECYCLING**

A ustria-based international technology Group Andritz has launched its new ADuro product line for primary and secondary shredding, fine granulation as well as for breaking up material composites.

"ADuro shredders feature highest durability and are perfectly suited to processing almost all raw materials in the recycling industry", the company emphasized. "They can be installed easily in existing facilities, thus keeping shutdown times during installation to a minimum." The latest member of this product family is a compact secondary shredder with an extra robust design. With a rotor length of 3,200 millimeters and "some unique design features, the machine is a powerful tool for shredding refuse-derived fuels and municipal solid waste as well as commercial or industrial waste". The new shredder would be launched in July this year.

# Some examples of the product family

"The ADuro brand name reflects our strong focus on R&D and stands for a continuously enhanced shredder design with IIoT features to achieve



the optimum operating point", Michael Waupotitsch, Vice President of Andritz Recycling, is cited. "The Andritz automation tools can be tailored to individual customer needs and provide powerful capabilities to monitor machine behavior and improve plant reliability."

The ADuro product line comprises a broad range of machines: The P shredder is a slow rotating pre-shredder with electric drive and hydraulic pendulum feeder, with low energy consumption. It processes large quantities of domestic, commercial, industrial and bulky waste into manageable sizes down to 50 millimeters. The robust shredder is powerful, energy-efficient, reliable and maintenance-friendly, the manufacturer assured.

The single-shaft machine ADuro U shreds the material with only one step to the required size. With integrated screens from 10 to 150 millimeters, output quality and throughput can be customized. The robust machine is powerful, energy-efficient, reliable and maintenance-friendly.

Last but not least, the ADuro M shredder is suited for fine granulation of used tires, plastics and cables and is mainly used as the final shredding step in a complete recycling process. The machine reduces the input material to a particle size of less than four millimeters and thus breaks up the last remaining material composites. "The results are defined, pure-grade, granule-sized secondary raw materials", Andritz said. "The individual fractions, such as copper, aluminum and plastics, can be separated with a metal separator to be available with high purity and a quality that can be used to make new products."

Source: Andritz

### **CROSS WRAP HELPS TO UPDATE RECYCLING OPERATIONS**

Finnish machine manufacturer Cross Wrap Oy has been providing automatic bale wrapping machines for over 26 years. The company's original Cross Wrap bale wrapping method has become an industrystandard in waste and alternative fuel bale wrapping. Today Cross Wrap's lineup consists of machines for bale wrapping, automatic bale openening, bale dewiring, and board product packaging. More than 500 Cross Wrap machines in over 55 different countries are in use today.

Covid-19 brought a situation the world has never seen before. Changes needed to be done immediately in the company's processes and sales. Today all actions are done remotely, and operations have been running without problems.

#### CW Bale Dewiring in recycling plants - Automation in material feeding

"Well yes, I cannot believe why this is still done inside a plastic recycling plant where all the latest technology is in use. Manual bale wire cutting in material infeed is something we want to get rid of, it is dangerous work and a task that shouldn't be manual in 2020." Cross Wrap Oy Sales Manager Eetu Laatikainen remembers a customer's note.



Cross Wrap Bale Dewiring increases operation safety and efficiency in bale dewiring and can be used in plastic recycling and in paper recycling

Manual bale wire cutting is not in level with safety regulations of a socially responsible company that cares about their employee's health and well-being. "This may still be the reality in many recycling plants that receive their material in bales, but we are happy that things are changing towards safer and more efficient material feeding in recycling plants around the world", Eetu Laatikainen continues. If a plastic recycling plant or any other material recycling plant is receiving its recyclable material in bales, CW (Cross Wrap) Bale Dewiring machine is a safe and efficient solution. If bales are wrapped in film, the automatic and safe bale opening solution is the CW Bale Opener.

The CW Dewiring machine is used in several sectors in recycling, and the first machine was developed for a paper mill in Finland in 2015. After the first pilot and testing phase, Cross Wrap started to market the Dewiring machine in 2017. Today, there are over 25 machines in use in 12 countries in sectors such as mixed plastic recycling, PET recycling, straw (Bagasse),



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paper mills using recycled cardboard and paper, Waste to Energy, etc.

# CW Bale wrapping - Possibilities in material handling

Cross Wrap's most known machines are the CW Bale Wrappers. These Bale wrappers have been engineered for the waste and recycling industry needs, and during the past 26 years, this unique and patented bale wrapping solution has become the industry standard in waste bale wrapping.

"When listening to the customers, we have heard examples such as: 'This Cross Wrap machine is what we need. My company is having storage problems with alternative fuel, as the bulk material warehouse burned down in a fire.' We can solve these kinds of problems with Cross Wrap bale wrapping", Eetu Laatikainen explains.

"The automatic bale wrapping offers many benefits to our customers such as saving space during storage; the storages remain clean, and there are no rats or birds nor neighbors who are complaining of waste and litter flying in the wind. Baling and wrapping also help to avoid the risk of fire as the cross wrapped bales don't let oxygen inside", Eetu Laatikainen summarizes. One key feature is also the benefit of transporting materials in wrapped bales. Therefore, normal trucks and lorries can be used instead of garbage trucks. That helps to bring down transport costs, gives new possibilities for efficient alternative fuel transport, and opens the possibility for alternative fuels export.

#### Cross Wrap and Covid-19 adjustments

"We started the Cross Wrap Webinars shortly after it was clear that no trade fairs, seminars, or conferences would be held in the coming months. As traveling is not possible, we wanted to have a platform to keep in touch with our partners and customers. In the latest webinar, there were registrations from 45 countries. As we have sold machines to over 55 countries during the past 26 years, we were pleased to see how broad audience we could get to the online webinar", Eetu Laatikainen explains.

After traveling restrictions is going to free up slowly, Cross Wrap sees that business traveling will not need to rise to the same level as it was before the crisis. "Webinars are actions that we will keep on doing. Each company – Cross Wrap included – has become better in using online meeting tools, and we may avoid some traveling and unnecessary flights across the globe in the future. For sure, we will still be participating in the most important exhibitions and seminars in the future when it is safe again", Eetu Laatikainen says and welcomes all who are interested in participating in the next Cross Wrap Free Webinars held online.

Contact: sales@crosswrap.comwww.crosswrap.com

Eetu Laatikainen, Cross Wrap Sales Manager for Germany, Switzerland, and Austria



Cross Wrap automatic bale wrapping has become an industry standard operating model in waste-to-energy operations

# **PAPER VIETNAM 2020**

### November 11 – 13, 2020, Ho Chi Minh City (Vietnam)

The Paper Vietnam 2020 exhibition, which was scheduled to take place in June, is postponed because of the Covid-19 pandemic. The event is rescheduled to November and will take place at the Saigon Exhibition Convention Center (SECC) in Ho Chi Minh City. As reported, Paper Vietnam will be held in conjunction with the Packaging Print & Label Vietnam Expo 2020. The packaging industry in the country is considered as one of the fast-growing economic sectors in terms of scale and number of established enterprises over the last decade. Aiming to be the next "Factory of The World", Vietnam is ranked as the most dynamic FMCG (fast-moving consumer goods) markets in Southeast Asia with consumer goods growth rates of 12,8 percent in Ho Chi Minh City, 12 percent in Da Nang and 10 percent in Hanoi, the organizer informed. "The total consumption of packaging paper in Vietnam in 2018 reached 3.818 million tons, up by 20 percent over the same period, making it the highest growth rate of Vietnam's packaging paper industry in the history", the information on the homepage says. The plastic packaging had also seen a robust development "thanks to great growth achieved by the food sector". Moreover, recycling will also be a topic.

www.paper-vietnam.com

## SUM 2020

### November 18 - 20, 2020, Venice (Italy)

SUM 2020 – 5th Symposium on Urban Mining and Circular Economy, organized by IWWG – International Waste Working Group, will be held in Venice (Italy) from 18th to 20th November 2020.

The Symposium, originally planned for 18th to 20th May 2020 in Bologna

(Italy), has been rescheduled due to the Covid-19 public health emergency. The event will be co-located with another IWWG event: Venice 2020 – 8th International Symposium on Energy from Biomass and Waste, already scheduled to take place in Venice at the Scuola Grande di San Giovanni Evangelista, from 16th to 19th November 2020. According to the organizers, the combination of the two conferences will allow building an international reference event in the field of circular economy and recovery of resources from waste, both in terms of materials and energy.

www.urbanmining.it



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EVENTS

### **EREC – THE VIRTUAL EXPO FOR THE RECYCLING INDUSTRY**

August 31 - September 5, 2020, online

t is time for a new, digital event. Therefore, eREC will take place from the 31st of August to the 5th of September 2020. It is the perfect opportunity for exhibitors and visitors to enjoy the advantages of digital networking.

Currently, the whole world is facing uncertainty and restrictions due to the current Corona-Crisis. Undoubtedly, the pandemic has a severe impact on daily life. That includes that industries such as the recycling industry have to deal with a flood of canceled events, fairs, and congresses. However, along with these negative impacts, we are experiencing an upsurge of fresh innovations. Accordingly, the word "digitalization" takes on a whole new meaning, and suddenly there is an alternative to compensate for postponements and cancellations.

This event serves as a virtual platform for the recycling industry and facili-



tates the national and international exchange between companies and customers. Companies can use this platform to present themselves, their newest products or innovations, and generate new and precious leads while enjoying the advantages of online networking. Accordingly, the digital recycling expo and conference is the best opportunity to present oneself to customers without any travel costs involved.

Every exhibitor creates a virtual stand and uploads brochures, videos, or information material accessible to all visitors. Moreover, visitors can visit all booths, see new products, and get in touch with the exhibitors via live chat. Apart from presenting the newest products and ideas, every exhibitor has the chance to take part in the extensive framework program – either as a passive participant or as an active speaker. All visitors can access the framework program and take part in discussions, webinars, live presentations, and interviews, which will focus on different topics of the recycling industry.

Everyone, no matter where he is, can go online and explore the virtual world of eREC. That is the place where international companies, customers, experts, and decision-makers come together. Just a few clicks, and all visitors, exhibitors, and speakers can easily access the virtual world of the new "Digital Recycling Expo and Conference for Circular Economy and Waste Management".

www.erec.info

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