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Bi-Monthly Magazine, Bi-Language English & Gujarati Plastic Industry Periodical

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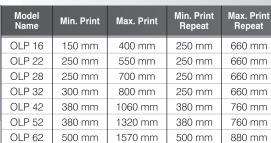
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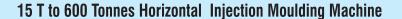


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Prevention

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Wear face mask when you are stepping out of home

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DSM and Neste announce strategic partnership to create high performance materials made from sustainable feedstock



Royal DSM, a global sciencebased company in Nutrition, Health and Sustainable Living, today announced that it will start a strategic partnership with Neste, the world's leading producer of renewable diesel and sustainable aviation fuel and a forerunner as provider of renewable and circular solutions for the chemical industry, to enable the production of high performance polymers. This enables DSM and its customers to reduce the carbon footprint of their own products whilst supporting the industry to transition to a circular economy.

In the new strategic collaboration, DSM **Engineering Materials will start** replacing a significant portion of the fossil feedstock used to date in the manufacture of its high performance polymers portfolio with feedstock produced from recycled waste plastics and/or 100% biobased hydrocarbons. These polymers are used, for example, in the automotive, electronics and packaging industries.

Over the short term, the collaboration aims to replace several thousand tons of fossil

feedstock in the production of circular solutions. polymers with alternative, sustainable feedstock: biohydrocarbons.

to incineration and landfilling. products are suitable for livesforall." existing production infrastructures and enables its existing processes.

re-qualification.

demand for more sustainable environmental footprint."

Shruti Singhal, based and waste plastic based President DSM Engineering Materials said: "We have a long history of delivering tangible Neste produces its bio-proof points of our commitment based hydrocarbons entirely to sustainability. As a next step from renewable raw materials, we are going to even further such as waste and residue oils reduce our footprint and will and fats. For the production of offer a full alternative range of waste plastic derived our existing portfolio based on feedstock, Neste focuses on bio- and/or recycled-based plastics that cannot be materials by 2030. Together mechanically recycled and with our upstream partner have previously been directed Neste and other value chain partners we're ready to drive Thanks to being a drop-in our industry forward, seize the replacement to commonly- sustainable opportunities used fossil feedstock in the ahead, and deliver on our polymers production, Neste's purpose of creating brighter

Mercedes Alonso, DSM to produce more Executive Vice President. sustainable products with Renewable Polymers and consistently high quality using Chemicals from Neste said: "Neste and DSM are frontrunners in providing All of the chemically sustainable solutions to the recycled and bio-based market. Both companies have materials within the value chain a similar sense of urgency will have the globally towards creating a healthier recognized ISCC Plus future for our children. Neste is certification and will not require very pleased to announce this partnership with DSM through which we can further The new strategic accelerate the industry cooperation underlines a transformation towards a more strong commitment from both sustainable, circular economy. partners to contribute to a It is exciting to see how our circular economy by 100% bio-based and waste collaborating throughout the plastic based products enable value chain, and addressing DSM to produce its high the increasing consumer, performance polymers societal and regulatory portfolio with a reduced

























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DSM – Bright Science. Brighter Living.™

Royal DSM is a global, purpose-led, science-based company active in Nutrition, Health and Sustainable Living. DSM's purpose is to create brighter lives for all. DSM addresses with its products and solutions some of the world's biggest challenges while simultaneously creating economic, environmental and societal value for all its stakeholders - customers. employees, shareholders, and society at large. DSM and accelerating a shift to a delivers innovative solutions circular economy. We refine for human nutrition, animal waste, residues and nutrition, personal care and innovative raw materials into aroma, medical devices, renewable fuels and

green products and applications, and new mobility and connectivity. DSM and its associated companies deliver annual net sales of about €10 billion with approximately 23,000 employees. The company was founded in 1902 and is listed on Euronext Amsterdam. More information can be found at www.dsm.com.

ABOUT NESTE

Neste (NESTE, Nasdaq Helsinki) creates solutions for combating climate change

sustainable feedstock for plastics and other materials. We are the world's leading producer of renewable diesel and sustainable aviation fuel. developing chemical recycling to combat the plastic waste challenge. We aim at helping customers to reduce greenhouse gas emissions with our renewable and circular solutions by at least 20 million tons annually by 2030. As a technologically advanced refiner of high-quality oil products with a commitment to reach carbon-neutral production by 2035, we are also introducing renewable and recycled raw materials such as waste plastic as refinery raw materials. We have consistently been included in the Dow Jones Sustainability Indices and the Global 100 list of the world's most sustainable companies. In 2019, Neste's revenue stood at EUR 15.8 billion, with 82% of the company's comparable operating profit coming from renewable products.

Read more: neste.com & www.neste.com



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Getting to the root of cleaner skincare



Calls for ingredient transparency are getting louder. With many terms – clean, all-natural, organic, vegan, no-nasties, cruelty-free etc. - bandied about often interchangeably, no wonder it's tough for consumers to make informed Clean Beauty product choices. Can Clariant's active ingredients help brands build trust beyond efficacy alone? The 2020 industry awards certainly say yes!

Getting to the root of cleaner skincare

Beauty is in the eye of the beholder, said Plato. Perhaps nowadays we can apply it to "Clean Beauty" too, since it means different things to different people. All-natural, organic, vegan, no-nasties, cruelty-free, green... with many terms bandied about, often interchangeably, little wonder these trend followers can get confused when it comes making informed product choices.

As consumer calls for more transparency on ingredient information and labeling get louder and stronger, Clariant Active Ingredients is on a mission to make a positive difference and equip formulators and brands with sustainable active ingredients that get what consumers want. It's an approach that's attracting wide industry praise. Sustainable ingredient sourcing, greater extract efficiency and a customer-oriented approach were key factors in Frost & Sullivan's decision to award its 2020 European New Product Innovation Award to natural anti-aging active PrenyliumTM, for example. One award of many in 2020.

We asked Clariant Active Ingredient's Head of Marketing, Alexandre Lapeyre for some quick insight and how successfully answering growing customer demands goes beyond efficacy alone for modern skincare.

Alexandre, the beauty industry has always relied on building loyalty between brand and consumer. Trust is central to that. How do today's active ingredients fit in to the picture?

Active ingredients are crucial to bringing care-related

performance to a skin care formulation mix. Ideally, delivering a benefit consumers are after, such as anti-aging properties, from plant-based extracts. And with proven efficacy through evidence-based results. Skincare consumers the world over now expect proof of promises. It's vital to the trust building process.

Today's active ingredients however have the chance to do more than just being effective at doing a job. They present an opportunity to deliver transparency when it comes to ingredient sourcing and compliancy with ethical labels. Filling the demand gap here as well, can give a brand a credible trust-building differentiator for developing standout products.

What are the challenges to producing such active ingredients?

The Personal Care industry may be experiencing momentous growth, but stringent regulation procedures and fast-paced shifts in consumer preferences mean that maintaining a price/performance balance while developing natural active ingredients is a challenge. It's restricting the innovation rate and market growth.

It takes significant expertise and capabilities to overcome the cost- and time-intensive challenges of getting a new ingredient on the approved list, complying with strict regional regulations, surviving potential raw ingredient shortages, and ensuring full traceability, from cultivation right up to when the extract finally gets added to the mix. In the current climate, that's an uphill struggle for many active in gredient

What's Clariant Active Ingredients' award-winning approach?

We made a conscious decision to cut through the noise with strong, clear positioning - trend-setting nature-derived solutions that target and match growing beauty performance needs with proven quality and reliability and full traceability. We offer robust clarity on efficacy and responsible sourcing to support our customers in making clearer claims. Whether they are going 100% "Clean Beauty" with their product or taking steps in that direction. We even suggest formulation concepts via our Sc[ai]turalist brand for formulators, to inspire them to combine actives in a recipe that meet with consumer requirements, demands and trends. Get inspired by our latest RetroFuture formulations.

We're very committed to filling demand gaps and improving the whole customer experience. And are proud to be receiving recognition from the industry for our prominence as a customer-oriented brand. Our focus on delivering innovative, consumer- and trend-oriented products with substantiated claims is helping us to stand out from our peers. And was fundamental in Frost & Sullivan's decision to



Plastic & Packaging Directory

2022



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place us Best-in-Class with their 2020 New Product Innovation Award in the European sustainable anti-aging active ingredient industry.

What's the secret?

In the spirit of transparency, we're proactively open. We use the science of technologically-advanced sustainable cultivation and extraction techniques to empower nature's own regenerative and protective active compounds found in plants. Many of which have been used for centuries in plant-based Traditional Chinese Medicine, Ayurveda and other traditional uses in Asia and the Americas. And create unique extracts rich in beneficial molecules that in turn empower formulators and brands in developing superior products.

Like catering to the growing demand for anti-aging, natural and sustainable products with well-aging skincare award-winners Prenylium, Rootness $^{\rm TM}$ Energize and Epseama $^{\rm TM}$. or addressing hormonal aging with highly-sustainable skin sensitivity fighter Eosidin® and many more. All with a keen eye on balancing economic and performance value and sustainability commitments.

How can customers be sure of your claims, be that efficacy, origins or traceability?

Scientifically-backed evidence and engagement are key. We use many platforms to engage with the industry and communicate an ingredient's effectiveness, proven using multiple in-vitro, ex-vivo and clinical tests, as well as the origins.

We ensure full traceability from seed to active, sharing details on cultivation and extraction processes designed to reduce waste, limit environmental impact and be non-food competitive. Plus we'll always give clear guidance on label or protocol compliancy. Whether it's a stem cell extract or plant culture-derived. Like our premium root power labeled products for skincare trends based on our partnership with French PAT. Here too, we bring clarity. A dedicated label helps customers recognize and easily find the products.

At the end of the day, we want formulators and brands to create trend-setting solutions to consumer needs. The best way to do that is for us to enhance our own customers' experience. Give them the actives they need to stand up to consumer scrutiny on traceability and efficacy. To help build that trust.

Visit Clariant's blog hub 'The Moleculist' for more trending stories.

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FOR MORE DETAIL www.clariant.com



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A market first: Avery Dennison launches recycled direct thermal paper labels



Avery Dennison has introduced rDT, the first commercially available direct thermal paper labels to

contain recycled post-consumer waste.

Direct thermal (DT) paper is a popular material due to its ease of use, high print speed, high image resolution, and wide range of compatible printers. Avery Dennison's new rDT is the first recycled uncoated direct thermal paper label material available on the market.

"We've seen a sharp rise in demand for sustainable direct thermal solutions, especially in the logistics and eCommerce space." says Vincenzo Palumbo, product manager direct thermal Paper at Avery Dennison, "That such a widely used material didn't have a recycled option available showed a big gap in the market, and we're excited to introduce rDT to meet the clear demand for sustainable labels as well as push the



labelling industry towards more regenerative practices."

rDT is a BPAfree, FSC certified direct thermal uncoated paper that contains post-

consumer recycled waste. The material's performance is on par with standard DT paper, including visual appearance, conversion, printability, and barcode readability.

"Avery Dennison is continuously researching and developing ways to increase the sustainability of our products, and rDT is the latest innovation in our rRange portfolio of recycled papers." says Vincenzo, "The demand for sustainable materials will only grow from here, and we plan on continuing to expand the rRange portfolio as well as work to maximize the recycled content percentages of our available materials."

FOR MORE DETAILS www.averydennison.com

DOMO's ECONAMID® for the Office - Comfortable, Stylish and Sustainable



- The Kirn office task chair takes sustainability to a new level
- The Kirn, designed with circular economy thinking has

the lowest carbon footprint at 37.5 kg and weights just 12 kg – that's 10% less than any other task chair Orangebox have ever manufactured

- It is made primarily from ECONAMID® a 100% recycled polymer feedstock
- ECONAMID® produces up to 97% less CO2 in its processing than virgin plastics

Leuna, January 14, 2021 - As the design and plastics industries strive towards a circular economy, Orangebox, a workplace design company focused on innovation, has launched a new office task chair designed for sustainability and to be 99% recyclable at the product's end of life.

The Kirn, fabricated using DOMO's ECONAMID® polyamides, provides great comfort while being truly environmentally smart. Polyamides are plastics that are versatile, light, tough and resistant, making them a great fit for many industrial and design needs, and with ECONAMID® they are also more sustainable.

Developed from recycled post-industrial textile fibres, ECONAMID® polyamides provide significant sustainability credentials compared to virgin polymer-based solutions. DOMO's Distribution Manager Andrea Rizzo says, "By using unique fibre feedstock, monitoring our energy consumption and using renewable energy sources, we have managed to produce this top-quality 'green' range of products. ECONAMID® can

reduce CO2 emissions by up to 97 % vs. virgin plastics and offers significant water savings in production."

The comfortable Kirn offers an improved range of seat height. The intuitive design and the soft-touch fibres have been engineered to provide continuous, hard-wearing three-dimensional support for all shapes and sizes.

In addition to product longevity and material efficiency, the architecture and engineering design of the Kirn has resulted in a simpler product, made from fewer parts, and using less material.

At the end of its working life, the chair's material selection and design for disassembly will allow 99% of it to be recycled, with its large parts carrying material identifier marks. The Kirn office task chair was developed by Orangebox with support from its favoured plastic moulder, Linear Plastics, and DOMO's Pan European distributor, Ultrapolymers.

At the forefront of plastic industry commitments towards the sustainable development of the sector, including leveraging the potential of a circular economy, DOMO Chemicals has cemented its position as market leader in the recycled engineered polyamides PA6 and Pa66.



FOR MORE DETAIL www.domochemicals.com



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2021

JANUARY

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2021 HOW THE PLASTIC FRATERNITY WALKS THE TALK OF THE NEW NORMAL



Plastic is the material of use and abuse as also of the material of the pandemic times. It has been critical in the COVID-19 emergency response through its use in the manufacture of personal protective equipment (PPE). Yet plastic pollution is a major global crisis.

There appears to be a growing change in public perception and preference toward sustainable consumption. These factors will likely continue to drive companies to develop new sustainable products and business models.

In 2021, many US companies are expected to add mechanically recycled and renewable feedstock-based polymers to their product offerings and invest in chemical or advanced recycling to bring potentially game-changing recycling technologies to a commercial scale.

The OECD (37 member countries group) chemicals and environmental policy group are exploring sustainable plastic product-design criteria and considerations from a chemicals' perspective. "Sustainable plastics" are defined in that process as plastics that can be

managed within a sustainable materials system, including recycling.

Policies are limited worldwide, meanwhile, on labeling recycled plastics. There should be greater harmonization and agreement on what constitutes recycled plastic and how to label it is needed to increase recycled plastic use.

The absence of traceability and data shortages creates uncertainty on what materials are wherein the market, especially for recycled content. Whereas there is typically information on virgin plastic quality, performance characteristics, and near-term availability, the same is not true for recycled plastic.

Part of the challenge in building a circular plastics economy lies in investments upstream and downstream in emerging and advanced economies alike. Circular plastics investments can be slowed down or sped up based on several factors, not least the regulatory environment, local infrastructure and skills, incentives, government procurement policies, and overall investment facilitation.

The latter is the subject of ongoing negotiations among 101 WTO members to make investment frameworks more transparent, predictable, and efficient. While not exclusive to any sector, several companies have suggested that general improvements to investment processes would be welcomed, particularly in developing countries where new technologies are needed to deal with growing domesticwaste, including plastic rubbish. Such steps, combined with responsible trade facilitation measures, could also result in regional economies of scale for plastic waste management.

From 2021, most plastic waste trade across borders will be subject to the Basel Convention





prior informed consent (PIC) procedure as controlled waste. The PIC procedurecontains four key stages involving:

1) notification by the state of the

export or by the exporter to the appropriate authorities of export, import, and transit;

- 2) written consent by transport or importing states;
- 3) the use of transboundary movement documents from point of export to disposal; and
- 4) confirmation of disposal. Parties are legally obligated to ensure plastic waste for exports will be managed in an environmentally sound manner (ESM). There is a requirement to

demonstrate the existence of a contract between the waste exporter and importer according to ESM conditions. The state of transit or import may add conditions to the movement, request additional information, or deny movement.

First, trade and investment can be tools to help technology deployment, spread product innovations, and generate economies of scale for recycling.

Second, trade has not been used to advance recycled plastics markets either in terms of processes or products.

Third, some barriers exist in terms of plastic waste trade, recycling processes, recycled content use, reuse, and take-back business models, as well as technology and manufacturing investment.

There are many different regulatory areas and

stakeholder groups working to address plastic pollution and move to a more circular system. Meaningfully scaling the circular economy for plastics requires systemic change beyond the areas of waste



management and recycling, which have been a predominant focus of this paper. Critical downstream needs, however, could likely be supported by trade policy as it acts on the levers influencing production and consumption patterns. example, Indonesia's strategy for tackling plastic pollution offers an example of a practical strategy involving actions across the three Rs - envisaging an acceleration of recycling in the first phase followed by reduction and substitution.

And in India.....

- 1) Simply banning single-use plastics might not result in eliminating plastic waste challenges from society: Strengthening the waste management practices (segregated collection and processing waste through material recovery facilities in cities) can help put plastic waste back to the circular economy loop. The manufacturers and producers operating in India have agreed under the EPR mandate to collect the equivalent amount of plastic waste that they put out in the market on annual basis. There is a need that packagingfor a specific product is designed in a manner that is easy to recycle and has standard characteristics (via BIS standards).
- 2) Upcycling the plastic waste, rather than down cycling, help obtain sustainability in management: This would need substantial design and functional improvement to make these alternatives viable. As a last resort, cities should work towards using non-recyclable plastics to make roads or recover energy from non-reusable and non-recyclable



plastics, using them as alternative fuels to replace fossil fuel.

- 3) Appropriate and effective awareness among various stakeholders ranging from waste generators, collectors including city managers, recyclers, till consumers for recycled/upcycled products to be strengthened: A design benchmark will have to be developed by the Bureau of Indian Standards (BIS) for quality control and creating market for products produced from the recycled feedstock.
- 4) Interventions are required for strengthening the reverse logistics chain, and mainstreaming informal recycling with formal recyclingas per the circular economy approach:
- 5) EPR implementation through PROs that help deliver the produced plastic waste back to recycling chain need to be strengthened—appropriately implemented and monitored: The Indian government will have to leverage finances in mechanisms that allow segregation and segregated waste collection from cities and strongly apply EPR policies in consensus with state urban development bodies.

6) Increasing the sustainability of plastics can bring new opportunities for modernization, competitiveness, and job creation, consistent with global economic, energy, and environmental objectives. We will have to adopt strategies that align with the socio-economic upliftment of our informal sector and transit plastic waste management from a challenge to an opportunity.

In conclusion, use of technology, ethical waste plastic management, commitment of brands to use recycled content in products, the policy and standards for using recycling content, will see our nation walk the talk and move towards 2021 for a future more exciting and brilliant than our past.

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CIRCULAR ECONOMY AND PLASTIC RECYCLING - 2021

I NTRODUCTION.

The population of the world is estimated to be 9.8 billion by the year 2050. Worldwide, w aste generated per person per day averages 0.74 kilogram but ranges widely, from 0.11 to 4.54 kilograms1. Maintaining the same rate of waste generation in 2050, the total waste generated would amount to a staggering 7.9 million tons per day. Considering the waste generated, Planet Earth will little place left for human inhabitation. Further, the chances of the discarded waste entering the human food chain is already staring at us. In such a situation, maintaining a circular economy is the need of the hour.

Circular economy or circularity is an economic system aimed at reducing waste and the continual use of resources. A circular system employs various means to create a closed loop system, minimising the use of resource inputs and creation of waste, pollution, and carbon emission2.

Solid Municipal Waste comprises of various material like paper, glass, organic, plastic etc. Further, the proportion of such fractions various from low-income areas to high income areas. Typically, low-income areas have a high fraction of organic waste whereas high income areas have a high component plastic waste.

Organic waste can be disposed relatively easily as it can be composted under controlled conditions or, if not mixed with other wastes will decompose on its own. Other waste however must be recycled, through varied processes which uses energy and water amongst other resources. Recycling methods therefore need to be examined thoroughly prior i mplementation. Notwithstanding the need for energy/ water in recycling processes, use of virgin material damages the eco system and

therefore there are good arguments in favour of reduction in use of such virgin material.

To examine the factors pertaining to plastic production and plastic waste affecting implementation of a circular economy let us compare the various aspects.

PRODUCTION

The production of plastics involves multiple steps which use resources from the environment. Plastics are derived from natural, organic materials such as cellulose, coal, natural gas, salt and of course, crude oil. Heavy crude oil is distilled in a refinery to separate it into lighter groups of lighter components called fractions. These fractions are a mixture of hydrocarbon chains differing in terms of size and structure of their molecules. The fractions are processed and made into Plastic. The whole process consumes not only crude oil, which is a limited natural resource but also large amount of energy generation of which also

- 1 Trends in Solid Waste Management (worldbank.org) (30 Jan 2021)
- 2 Wikipedia definition of Circular economy (30 Jan 2021)

consumes natural resources like fuel and gas. It is therefore apparent that production of virgin plastic consumes large amounts of natural resources.

The Plast India Foundation Report of 2018 states that the annual production of virgin plastic in India in 2016-17 was 14,088 Kilo Tons and projected production for 2019-20 is about 15,500 Kilo Tons3 (Which translates to about 15.5 million tons).

As per a report by IndiaSpend4 dated 05 Oct 2020 around 43% of manufactured plastic in India is used for packaging purposes and is mostly single-use plastic. The total plastic waste generated during the year 2018-19 as reported by the Central Pollution Control Board in its Annual Report5 is 33,60,043 metric tons per annum.



WASTE GENERATION

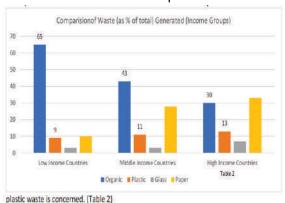
The world generates 2.01 billion tonnes of municipal solid waste annually. Worldwide,



waste generated per person per day averages 0.74 kilogram but ranges widely, from 0.11 to 4.54 kilograms. High Income Countries generate about 34 % of the total world waste though they comprise only about 16% of the population6.

From Table 17 it is evident that while the percentage of organic and paper/ cardboard waste varies from region to region, the quantum of plastic waste as a percentage of total waste remains largely the same.

A comparison based on income levels of countries8 reveals a similar picture in so far as



LINEARECONOMYVSCIRCULARECONOMY



RECYCLING PLASTIC WASTE AND CIRCULAR ECONOMY

Plastic waste can be managed through several different methodologies. Currently a large part of plastic waste is either incinerated or is littered / ends up in the environment.

Management of plastic waste can be best undertaken by reducing use and re-using.

However, since not all plastics can be re-used at commercially viable plastic waste management the general ways practiced are reduce, reuse, and recycle.

Recycling plastic can be broadly divided into four main classifications. Primary or reextrusion, Secondary or mechanical based, Tertiary, or chemically oriented, and quaternary orenergy recovery.

PRIMARY RECYCLING (RE-EXTRUSION) -

This involves the re-introduction of clean scrap plastic in the manufacturing process. This method is usually difficult as clean single type plastic waste is not easily available.

SECONDARY RECYCLING OR MECHANICAL RE-CYCLING

involves collection, cutting/shredding, cleaning, milling, washing, and drying followed by extrusion. The plastic so recovered is usually used in manufacture of products requiring fewer pressing attributes, in comparison with original material usage.

TERTIARY RECYCLING

also referred to as Chemical or Thermo chemical recycling involves using the waste plastic as feedstock in processes that generate fuel and chemicals. Segregation of plastics is not as essential in undertaking these methods.

QUATERNARY METHODS

may be described as methods of plastic waste disposal for energy recovery. Additionally, waste plastic is also increasingly being used as a mixture in bitumen road building as well as for co-processing in cement kilns.

CONCLUSION

Plastics have become an integral part of everyday life and while it may not be possible to live without plastics, there is a case for reduction in its use,



especially single use plastic which as discussed have a short life span, are difficult to recover and usually end up as litter.

Though, technology to sort waste into main streams of polypropylene (PP), high-density polyethylene (HDPE), low-density polyethylene (LDPE), PET and polystyrene (PS) using a series of rotary screen drums, near-infrared sorting and washing steps is available and can help in conversion of different types of plastic to their resins, the same is not a preferred method due commercial viability. Additional research must be carried out to devise methods to convert waste plastic into resins which can be re-used as virgin material.

Development of suitable environmentally friendly procedures for conversion of waste plastic into resin for use in virgin plastics are the need of the hour and must be pursued actively.

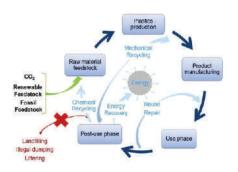
Packaging materials which comprise a very large portion of the plastic manufactured and have some of the shortest life spa should be made recycle friendly, or other materials developed for replacing such packaging material.

Return of packaging by end users must be encouraged and manufacturers must explore methods for re-use of such recovered material.

A better integration and collaboration of all stakeholders along the value-chain combined

with a forward-looking investment strategy, standardization, and legislation are recommended. Penalties or high rates of taxes for CO2 emission and suitable measures to integrate environmental costs, are essential to ensure market interest and faster adoption of efficient recycling methods. Further, stringent packaging design regulations to dictate full recyclability and strong regulations on waste disposal would pave the way towards a circular economy.

The figure below clearly depicts a truly circular plastic economy9



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Plastic – a Culture Problem or Material Problem?



to the human being at low cost, we tend to forget the value of the same. Had plastic been sold at the price of gold, would we throw it away? If internet was as expensive as it was a decade back, would we use it as much as we do today?

Could it not be that the problem is US, the PEOPLE – is it not that our habits are not aligned, and we have not been able to build an ecosystem.

It reminds me of Mahabharata's story of

For quite some time we have been "blaming" plastic as a problem, but can we take a step back and understand where is the real problem?

As a material, plastic has been an excellent find, with tremendous saving in resources with its unique properties of light weight, strength, flexibility and various forms – various shapes. To me personally plastic is one of the best things which happened to us.

Yes, plastic has a disadvantage of not being biodegradable, but that is when we dump it in the ground or land



filling or oceans. Did plastic tell Abhimanyu – he knew how to us to do so? NO break the chakrayyu but did not

Time has shown, that when resources are made available



Abhimanyu – he knew how to break the chakravyu but did not know the exit route. Did we realise the exit or recycling route of Plastic before it came in our life – no we did not. It is not very easy to think of an exit route as we cannot think so long, and in my view it is representing the way we have be en habituated. Till it comes onto us, we do not think.

But yes, we have been able to work on the problem at Rhino Machines & ACE



waste at source and establish a system to collect and bring to solutions such as SPB.



Foundation. We realized very Biotech, AFS India, Shaligram as it was shown. It was only a question of changing habits. In the time when we started working on the Rhino Silica Plastic Block (SPB) Project, I had also started studying the reasons of why businesses may not succeed, and the impact of culture on business outcome with the UNCTAD -Empretec Program. The two elements synergized and it brought a lot of clarity in our approach to the mission - the problem was at our habits.



What we did over a period of time was to start investing in habit formation of collecting at source, engaging with ACE Foundation, Concept

soon that plastic was actually Greens, VUIA (Industries our enabler to take care of other association), employees of waste, and it was not as "BAD" Rhino Machines and two major for us, it is a solution for



contributors - Elecon Group & Krishna Hospital from Anand.

For us plastic is an asset and the beauty is that even the so called single use plastic can be converted to a multiple use plastic and recycled again and again. What we may need to look at is that the problem lies with the habits to separate



Plastic is not a problem addressing other wastes from industry. Don't blame it on plastic - blame it on our habits which are possible to improve. Join our mission and log on to rhinospb.in - we are ready to collaborate anywhere in India to help set up ecosystems which are self-sustained, scalable and manageable.



Manish Kothari -Social Entrepreneur rhino@rhinomachines.net

ગામદોડે, ત્યાંનાદોડો. જુદીદિશાપકડો.

આખું ગામ અત્યારેકક્તપીવીસીફ્રેમ્ડેબોર્ડબનાવવા માટે, છાશવારે ચાઇનાદોડી જાય છે. પ્લાયવૂડની કેટલી માંગ છે એ કોઇને ખબર છે? એની સામે આપીવીસીબોર્ડવેચવાના છે.

નાન-વોવનબનાવવા માટે મશીનલઇઆવનારાનીશીદશા થઇ એ ગામ આખુંભૂલીગયું છે.

માટાંકીભાંડો લોકોભૂલી જાય છે,એટલે આ વાત બહુસામાન્ય છે.

પણ લ્રેક્યુગમાંદરેકવાતનુંપુનરાવર્તન થયાંકરે છે.એટલે લ્વે, નોન-વોવન પછી પીવીસીક્ષેમ્ડેબોર્ડ નો વારો છે.

લોભીયા ક્ષેય ત્યાં ધૂતારા ભૂખેનામરે. એટલે છાશવારે, બેગ ભરીનેચાઇના ઉપડીજતી પ્રજાને લાલબત્તીબતાવવાનો આ પ્રયત્નસમજવો.ચાઇના, આપણાજેવાસસ્તંખરીદનારાલોભીયાંની રાક જોઇને, જાળ પાથરીને રાક જુએ છે. આપણીલગભગ અભણ અનેક્કેવાતી ભોળી પ્રજા ને એરપોર્ટથી લાવે, લઇ જાય, મસાજકરાવી દે, ક્ષેટલેથી લાવવા–લઇ જવાનીસગવડઆપે એટલે આપણી પ્રજા ભરાય.

ત્યાં જઇને, આપણને, પરોપજીવીવેલોનીજેમ,મક્તમાં ખાવા-પીવાથી લઇને, હરવા-કરવાં સુધીનું મળી જાય એટલે આપણા બાપ જન્મારેયકોઇ જાણકારીનહિંહોવાં છતાંયે, જે મળે એ ઉચકીલાવવુંએવીઆપણીબાલીશહરકતોનો,

ચીનાઓ લાભ ઉઠાવે છે, અને એ આપણને ભાન પડેત્યાં સુધી ઘણું મોડું થઇ ચૂક્યું ફ્રોય છે. સુધરી જાવ, આપનાપિતાજી એ બ્રહ્મેફનતકરીનેરુપિયાભેગાંકર્યાં ફ્રેશે. આલેખ, ગુજરાતીમાં ફ્રોવાનું કારણ ચોક્કસ છે. જ્યસ્ટિંદ.

The Author, Mr.Kamal Shah, is Ahmedabad based consultant, assisting to set up Lucrative and new projects.

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