

THE WINNERS AND BEST ENTRIES FROM THE WORLD'S PREMIER CIRCULAR ECONOMY AWARD PROGRAM

CO-CHAIR **THANK YOU**

On behalf of the Young Global Leaders (YGL) Circular Economy Taskforce, we would like to extend our sincere thanks to all participants of The Circulars 2019. Over the last five years, The Circulars program, which recognizes individuals and organizations making notable contributions to the circular economy, has flourished - exceeding all our expectations. The Circulars 2019 was by far the strongest and most diverse year, receiving close to 450 applications from 45 countries, a 50% increase from the 2018 program.

As the Co-Chairs of this unique initiative, it has been fascinating and exciting to see the unrelenting progress and growth of the program. We have been on an inspiring journey, growing year on year, e.g. to amass 1,500 applicants from 70 countries across 7 award categories. The Circulars has succeeded in profiling how diverse organizations can harness circular economy principles to steer their organization towards creating tangible circular advantages, while also driving societal and environmental impact.

The Circulars have had the privilege of both celebrating and elevating circular economy leaders that are truly paving the way in creating a global circular economy. At the end of our fifth award cycle, it is now fitting that we pause at this significant milestone to reflect on what is next for the circulars and how we can continue to leverage this important platform to ensure practical advancement of the circular economy.

We are proud to present The Circulars 2019 Yearbook, which features a collection of short summaries of the extraordinary work of The Circulars' Winners, Runners Up, Finalists and Highly Commended entries from 2019. We hope you find their stories inspiring as they shine a light on the important progress that has been made to date in making the circular economy a reality.

We wish to express our sincere thanks to all who have been involved in The Circulars 2019.

Sincerely,

PETER, IDA, DAVID AND RAIN

THE YGL CIRCULAR ECONOMY TASKFORCE CO-CHAIRS



PETER LACY Senior Managing Director Accenture Strategy





IDA AUKEN Danish Parliament





DAVID ROSENBERG CEO and Co-Founder AeroFarms



RAIN NEWTON-SMITH Chief Economist

San Rosaly Fin the H

A FEW WORDS FROM OUR SPONSORS

"FOURTH INDUSTRIAL REVOLUTION
TECHNOLOGIES ARE UNLOCKING
OPPORTUNITIES FOR BUSINESSES TO GAIN
A CIRCULAR ADVANTAGE. WE MUST NOW
CAPITALIZE ON THOSE OPPORTUNITIES
AT SPEED AND SCALE, TO DRIVE TANGIBLE,
SUSTAINABLE VALUE FOR BOTH BUSINESS
AND SOCIETY."

SENIOR MANAGING DIRECTOR ACCENTURE STRATEGY

PETER LACY

"WE BELIEVE IN THE POTENTIAL TECHNOLOGY HAS TO SOLVE SOME OF THE GREATEST CHALLENGES FACING HUMANITY. IT WILL PROVIDE THE CONTROL, CONNECTIVITY AND DEEP INSIGHTS NEEDED TO ACCELERATE ADOPTION OF MORE CIRCULAR PRACTICES AND DECOUPLE GROWTH FROM PHYSICAL ASSETS. IT'S AN EXCITING TIME IN TECH."

EXECUTIVE VICE PRESIDENT & CHIEF CUSTOMER OFFICER DELL

KAREN QUINTOS

"A CIRCULAR ECONOMY IS WITHIN REACH. WHAT WE NEED NOW IS A SHARED BELIEF THAT WE CAN DO IT. WITH AMBITIOUS GOALS AND THE BEST MINDS ON THE CASE, THE NEXT GENERATION OF BREAKTHROUGHS WILL FOLLOW."

CHIEF EXECUTIVE OFFICER ECOLAB

DOUG BAKER

"WE HAVE SEEN EXAMPLES
OF GOOD INTENTIONS AND A
CONCERTED EFFORT TO CLOSE
THE LOOP BY SOME. NOW
TO TRULY SCALE WE MUST
SHARE BEST PRACTICE AND
MAINSTREAM CIRCULARITY
FOR THE BENEFIT OF MANY."

CHIEF EXECUTIVE OFFICER
GULF INTERNATIONAL BANK (UK) LIMITED

KATHERINE GARRETT-COX

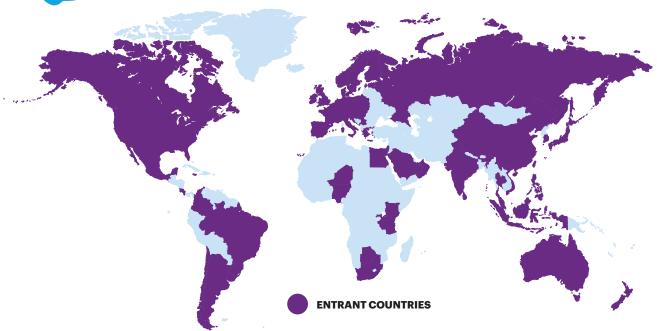
CELEBRATING 5 YEARS OF THE CIRCULARS

GLOBAL PRESENCE



~1500 ENTRIES

From **67 countries**





\$4.5 TRILLION

Global Circular Economy opportunity **by 2030**



FMCGs could realize \$30-110

BILLION

in profit through circular packaging



\$30-70

BILLION

in net revenue for tackling waste streams in the fashion industry



\$10-20

BILLION

in increased sales and material cost reduction for refurbishing electronic devices

Accenture Strategy Research



BUSINESS MODEL & TECH ADOPTION ACROSS 5 YEARS OF CIRCULARS ENTRIES







RESOURCE RECOVERY

is an extension on traditional waste management, and therefore, unsurprisingly, the most adopted business model to-date



CIRCULAR SUPPLIES

is the fastest growing model and consists of two distinct models: renewables and circular material



PRODUCT LIFE EXTENSION

models require intensive design for longevity, take-back solutions, and new customer engagement methods



Disruption to business-as-usual is required for **SHARING PLATFORMS** and **PRODUCT-AS-A-SERVICE**

models, so these models have seen most limited uptake



4TH

INDUSTRIAL REVOLUTION TECHNOLOGIES MAKING THE BIGGEST IMPACT TODAY





PHYSICAL



Robotics

BIOLOGICAL





Internet of Things

Machine learning



Energy harvesting



Bio-based materials



Bio-energy

A CIRCULAR FUTURE?

THE WORLD HAS 12 YEARS TO ACT BEFORE FACING THE CONSEQUENCES OF EXCEEDING 1.5 DEGREES OF WARMING.



E-WASTE IS THE WORLD'S FASTEST GROWING WASTE STREAM – 50 MILLION TONNES OF ELECTRONICS WORTH US\$ 55 BILLION WERE DISCARDED IN 2016. THIS IS EXPECTED TO INCREASE BY 17% BY 2021.

> 8 MILLION TONNES OF PLASTIC ENDS UP IN THE OCEAN EVERY YEAR; EQUIVALENT TO DUMPING A GARBAGE TRUCK OF WASTE EVERY MINUTE.

HOW WILL THE TECHNOLOGIES OF THE FOURTH INDUSTRIAL REVOLUTION HELP US SOLVE OUR BIGGEST WASTE CHALLENGES? ARE ORGANIZATIONS LEAVING VALUE ON THE TABLE BY NOT CAPTURING THE OPPORTUNITIES FOR COMPETITIVE ADVANTAGE THROUGH CIRCULARITY?



WILL REGULATIONS AND CONSUMER PREFERENCES SHIFT FAST ENOUGH TO SUPPORT A SYSTEMATIC PIVOT TO THE CIRCULAR ECONOMY?

CONTENTS AWARD CATEGORIES



Award for individuals who have demonstrated inspirational leadership journeys within the circular economy

THE FORTUNE AWARD FOR CIRCULAR ECONOMY LEADERSHIP



Award for established international organizations, with global reach and over US\$ 100 million in turnover, which are demonstrating circular innovation in their existing businesses

THE ACCENTURE STRATEGY AWARD FOR CIRCULAR ECONOMY MULTINATIONAL



Award for small-to-medium sized enterprises (SMEs) with US\$ 10 to 100 million in turnover, which are transforming their businesses towards the circular economy

THE YOUNG GLOBAL LEADERS AWARD FOR CIRCULAR ECONOMY SME



Award for the cities, regions, education establishments, NGOs, local or national government bodies or programs which best enable an environment for the circular economy to develop and flourish

THE WORLD ECONOMIC FORUM AWARD FOR CIRCULAR ECONOMY PUBLIC SECTOR

Award for investment bodies which are providing financial backing for the circular economy to become mainstream



THE GIB AWARD FOR CIRCULAR ECONOMY INVESTOR

Award which recognizes organizations using technology to enable the circular economy; chosen from entries across public sector and all business categories



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THE ECOLAB AWARD FOR CIRCULAR ECONOMY TECH DISRUPTOR

Award for early-stage organizations, with US\$ 1 to 10 million in booked revenue, which are at the forefront of the circular economy, demonstrating innovation and market disruption



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THE DELL CIRCULAR ECONOMY PEOPLE'S CHOICE AWARD





















Award for individuals who have demonstrated inspirational leadership journeys within the circular economy

PROFESSOR FLEMMING BESENBACHER WINNER OF THE FORTUNE AWARD FOR **CIRCULAR ECONOMY LEADERSHIP**

As circular economy principles become more widely adopted, what are the next steps all leaders need to action in order to drive further circular impact and scale?

As the principles of circular economy become more widely acknowledged and start to materialize, strong and agile partnerships across the value cycle are vital. Business leaders should not simply consider how their own business can turn circular, but how they can engage the whole ecosystem within which they operate, with circular principles. This requires closer collaboration with suppliers, new ways of interacting with customers, and innovative reverse cycle solutions.

Another critical enabler in the transition to the circular economy is regulation. Politicians must continuously adapt legislations and regulations to make sure that unintended barriers do not hinder further innovation and investments within the circular economy. Again, this requires a close dialogue and focus on a shared goal, namely, to move from linear to circular-for-good models. A case in point is the Danish Business Authority, that offers companies a one-channel response to regulatory questions related to sharing and the circular economy.

What key piece of advice would you give to emerging leaders within the circular economy movement?

The road towards the circular economy is a learning journey. By that I mean, that you must always be curious, take chances, and collaborate. I have met with hundreds of people to discuss the circular economy, studied relevant publications and worked with the circular economy in practice, and I keep learning. My key piece of advice to emerging leaders is therefore to stay open-minded and never believe that you have 'cracked it'. My motto is Semper Ardens - always burning, always passionate and always challenging your organization and yourself to do things better tomorrow than you do today.

Professor Flemming Besenbacher Chairman, Carlsberg Foundation and Carlsberg Group

















As Chairman of the Danish advisory board for the circular economy, Professor Besenbacher has exhibited very strong leadership and played a decisive role in setting concrete goals for Danish companies, municipalities, and organizations in the transition towards a circular economy. He has given numerous presentations where he argues that it is time for Denmark to take a leading role in the transition to a circular economy - evolving into what can be called a "State of Green."

Chairman **Carlsberg Foundation and Carlsberg Group**

IMPACT

The recommendations from the Advisory Board's report on circular economy, which Prof. Besenbacher chaired, have now been converted by the government into a Danish Strategy for circular economy. Furthermore, Prof. Besenbacher was invited as a circular economy expert to Norway and South Korea. In addition, he opened the circular economy track at the first international P4G summit in Copenhagen in 2018.

carlsberggroup.com | 💆 @Besenbacher2012 | in Flemming Besenbacher



Founder and CEO **Miniwiz**

Arthur Huang is the CEO and Founder of Miniwiz and an advocate of circular economy. He is a structural engineer, architect, innovator of loop economy building material solutions and specializes in post-consumer trash recycling applications to help to accelerate the shift to a closed-loop economy. Huang is particularly active in creating smart machines that turn recyclable materials into reusable materials.

IMPACT

Miniwiz has saved over 17 million kg CO₂ with its construction projects alone. With the introduction of the mobile upcycling plant *Trashpresso*, recycling can be done anywhere in the world, thereby further reducing the emission of CO₂ related to logistics and waste processing. Huang was able to gain recognition on a global stage, working together with renowned actor Jackie Chan and having the project showcased through a documentary on National Geographic.

miniwiz.com | in arthur huang



CEO **Worn Again Technologies**

Over 10 years ago, after learning about the global problem of textile waste, Cyndi knew she had to set up a business to tackle it. Cyndi identified prominent technical and commercial challenges with today's recycling methods, most notably, that current methods prevent the reuse of less than 1% of existing textiles in new textiles. She and Technical Director, Nick Ryan, partnered with Dr. Adam Walker (now Worn Again's Chief Scientific Officer) who had the scientific and technological expertise to develop a solution.

IMPACT

Worn Again Technologies is leading the new generation of chemical recycling. It's pioneering process can separate, decontaminate and extract polyester and cellulose from cotton to produce two outputs that replace the use of virgin inputs. Polyester and cotton represent over 80% of all textiles. Worn Again Technologies' solution is the only one that can deal with pure and blended textiles to deliver virgin-equivalent quality outputs at comparable prices. The process is entirely repeatable and therefore a truly circular solution.

wornagain.co.uk | @cyndirhoades | Cyndi Rhoades



















Kimmo has played a key role in negotiating and writing Finland's current governmental program, which aims to make Finland a global forerunner in the circular economy. He co-chairs the Finnish national roadmap for the circular economy. Kimmo works actively with his EU colleagues to foster the circular economy in the EU. As a member of the Bureau of the 4th United Nations Environmental Assembly (UNEA4) he advocates for the circular economy globally.

Huanzheng Du is a Professor at United Nations Environment Programme - Tongji Institute of Environment for Sustainable Development, the director of Tongji Circular Economy Research Institute, an expert in the World Bank consulting panel, and the founder of China Plastics Reuse and Recycling Association. His publication of "The Development of Resource Recycling Industry in China" led the development of the circular economy in China.

Minister of the Environment, Energy and Housing **Finland**

IMPACT

Under Kimmo's leadership, the Ministry of the Environment has supported over 60 trials and pilots focusing on nutrient recycling, more efficient recycling of municipal waste and the rehabilitation of contaminated land. The most important strategy and legislative processes he initiated included a national strategy on plastics and reforming Finnish waste legislation. Kimmo has led cleantech and the circular economy business delegations to over 10 countries, thereby supporting new circular economy partnerships.

ym.fi/en-US | 9 @Tiilikainen



Professor UNEP-Tongji IESD

IMPACT

Huanzheng was engaged by the government as the key expert to promote the legislation and policy-making around circular economy, such as the Circular Economy Promotion Law in 2009. His book titled "Extended" Producer Responsibility" guided the implementation of EPR in China. Huanzheng created an innovative systematic thinking approach, which combined the innovation of policy, technology, and business models. He has set up 15 innovation sites to develop new recycling methods and facilitated the establishment of 49 urban mining bases and 50 resource recycling sites.

> tongji.edu.cn in - Huanzheng Du



DR. -ING. DANIEL C. F. KÖHLER

Vice President TruckServices Technical Solutions Knorr-Bremse

Daniel is head of TruckServices Technical Solutions at Knorr-Bremse's Systeme für Nutzfahrzeuge (SfN)'s Aftermarket department for remanufacturing. Since 2017, he has been chairman of APRA EU (Automotive Parts Remanufacturers Association). He has been invited as a highly recognized expert to symposiums, for example to the German Federal Ministry of Transport with regards to legislation concerning remanufacturing of brake calipers. Furthermore, he has also contributed to specialist literature, for example "Remanufacturing of Heavy Duty Vehicle Components" by Fernand Weiland.

IMPACT

Daniel was paramount in developing the KB remanufacturing strategy, setting up a specialized remanufacturing plant and developing its remanufacturing brand "EconX". In 2017, over 1.4 million kg CO₂, the equivalent of over 0.4 million kg material and over 5 million kWh energy was saved. With his team of experts, he continuously works on enlarging the EconX portfolio. His remanufacturing efforts do not stop at Knorr-Bremse, as can be seen in his work as chairman of APRA EU.

knorr-bremsecvs.com | in Dr. Daniel Köhler



CEO **Circle Economy**

Harald is a passionate advocate and global leader for the circular economy. He is motivated by the disruptive potential of radical collaboration, shared knowledge and technology, to power the required system changes. Under his leadership. Circle Economy has harnessed open source collaboration to forge new alliances, including the world's biggest knowledge hub for circular economy, and crowd-sourced innovative solutions to key circular challenges across the globe.

IMPACT

Under Harald's leadership, Circle Economy has doubled in size and pioneered close collaboration between its membership of multinationals, SMEs, startups and public sector actors. Harald has championed circular economy thinking at the World Economic Forum and ICLEI. As co-author of the annual Circularity Gap Report, Harald launched the first global metric for circularity, and is scaling the organisation's global impact with like-minded organizations and individuals globally.

circle-economy.com

















Architect Flock

Léa is an architect and urban planner who is passionate about circular economy and Cradle to Cradle® principles. At her office, Flock, which represents EPEA GmbH, she built the first circular house in Brazil. Moreover, she co-created Ideia Circular – a platform for the discussion and dissemination of circular economy. She has also advocated and taught circularity all over the country and is a founding member of the circular economy Platform of the Americas.

IMPACT

Léa worked for a number of architecture projects applying circular economy and Cradle to Cradle® concepts, which have boosted their uptake in the local construction sector. Furthermore, Ideia Circular launched an online course which reached more than 3,000 followers on their website and social media channels. Léa was also a curator for circular economy in a major local innovation festival, where she brought together the main national stakeholders and an audience of 15,000 people.

flockcircular.com.br | in Lea Gejer























Award for established international organizations, with global reach and over US\$ 100 million in turnover, which are demonstrating circular innovation in their existing businesses

SCHNEIDER ELECTRIC

WINNER OF THE ACCENTURE STRATEGY AWARD FOR CIRCULAR ECONOMY MULTINATIONAL

How has prioritizing a move to circularity generated impact and competitive advantage for **Schneider Electric?**

Circularity at Schneider Electric is all-encompassing. It is key to our lasting success and touches everything we do in three ways. Firstly, it touches upon Circular Resources and Product Development through eco-design of products with minimum use of primary raw materials. Secondly, it touches upon Circular Supply Chain with reverse logistics, repair and upgrade centers, as well as waste minimization and monetization leading to bottom-line gain. Lastly, our Circular Value Propositions include Modernization and Digitization services on Internet of Things objects changing the interactions we have with our customers to full lifecycle relationships. This is underpinned by a corporate governance around four circular economy indicators in the quarterly non-financial Schneider Sustainability Impact barometer, impacting remuneration of thousands of Schneider Electric managers.

What's next for Schneider Electric as you continue to shape a circular future?

Circularity improves performance for our customers, is essential for the planet, helps governments and countries because of the local jobs it creates, and is strategic for us because it leads to sustainable relationships with our customers. It is a transformation in which we re-think the whole equation with a business prism. The most important aspects of circularity are innovations centered on our customers' interests - for example through Digitization and Internet of Things with the information we have through connected products, we would know when to apply which circular loop for value maximization - whether this is to modernize, repair, refurbish or recycle.

To enable this for our customers, everything we do needs to be more circular - within Schneider Electric and the eco-system around us, including our suppliers, partners and integrators of our technology. We expect tangible business value from circularity.

Jean-Pascal Tricoire, CEO and Chairman, Schneider Electric

















Schneider Electric leads the digital transformation of energy management and automation. Their objective is to assist buildings, industries, electric grids and data centers to use less resources in order for the global economy to become 'Climate and One-Planetcompatible'. Their solution is the circular economy.

SOLUTION

Schneider Electric designs and implements three forms of Circular innovations. Firstly, their circular value propositions prolong products' lifespans through leasing, pay-per-use models, refurbishments or modernization, leveraging the power of connectivity and digitization. Secondly, their circular supply chain promotes take-back schemes, aiming for zero-waste through the avoidance of landfill. Finally, their products are designed with circular criteria such as recycled content, recyclability of resources and end-of-life guidance.

IMPACT

Schneider Electric's circular business models have resulted in 12% circular revenues and continued growth. 100,000 tonnes of primary resource consumption will be avoided due to retrofits, refurbishments, and takeback systems from 2018 to 2020. Schneider Electric offers a mySchneider app which provides information on their eco-designed products and provides clear instructions for responsible end-of-life disposal. Schneider Electric aims to double recycled plastics in their products by 2025 and 100% of their cardboard, and all pallets for transport packing will come from recycled or certified sources by 2020.

schneider-electric.com | ♥ @SchneiderElec | In Schneider Electric



As a company of owners, AB InBev (ABI) takes responsibility for delivering measurable results and lasting change. Its operational and commercial teams develop and deliver circular goals together, working across the full value chain to embed circular decision-making across its operations, within its product portfolio, and with its ecosystem of partners.

SOLUTION

ABI focuses continuously on innovation for circular impact. They are upcycling spent grains into protein-rich drinks, like Canvas, and identifying circular solutions with innovators through their 100+ Accelerator program. In packaging, ABI is a leader in light-weighting one-way glass and finding new ways to make returnables easy for consumers. ABI works collaboratively with suppliers and partners to bring infrastructure to markets that enables the recovery and recycling of otherwise lost materials.

IMPACT

43% of ABI's volume globally is packaged in returnable glass bottles, which are eight times less carbonintensive than one-way glass. ABI are also investing in returnable and recycling infrastructure across six continents in which they operate and have committed to 100% returnable packaging for all products by 2025. ABI understands the impact that they can have and they challenge themselves to go further.

ab-inbev.com | **Y** @abinbev | **In** Anheuser-Busch InBev



DSM adopts a multi-faceted circular approach across its entire value chain and has embedded innovation into its sourcing, operations, sales and product portfolio. DSM has developed new business models to advance 'closed-loop' solutions via partnerships whilst showcasing strong growth and share price increases.

SOLUTION

Dedicated to securing the future availability of natural resources, DSM is pioneering bio-based solutions and circular materials, unlocking more value from the limited resources that are available. DSM has successfully designed durable bio-based alternatives to plastics, fully recyclable thermoplastics and developed a revolutionary technology based on a reversible adhesive that could potentially transform the carpet, mattresses and furnishing industry.

IMPACT

Reaching 2.5 billion people, DSM's contribution to society is significant. Brighter Living Solutions account for 62% of DSM's sales and are expected to rise to over 65% by 2021. DSM's ever growing sustainable product portfolio also includes promising circular innovation projects that have wide societal impacts and drive future growth.

dsm.com | 9 @DSM | in DSM



















At Eileen Fisher, the focus is on designing a new way of doing business that's both profitable and beneficial—for Eileen Fisher but also for the global community the company is connected to. Eileen Fisher's commitment is to build a circular design system and create a future without waste.

SOLUTION

Eileen Fisher creates system that preserves the value of materials and clothes — at any stage, in any condition. It makes simple, timeless products that are on a path toward circularity. Eileen Fisher take responsibility for what they make by reselling pieces that are in good condition, remaking items into new designs and testing innovative technologies that create fibers from waste.

IMPACT

Since 2009, Eileen Fisher has collected over 1 million pieces of Eileen Fisher clothing. In 2017, it sold 70,000 wellbeing units. Through online and in-store experiences, Eileen Fisher is helping the customer adapt to a new way of thinking about clothing, both old and new.

eileenfisher.com | @EILEENFISHERNY | in EILEEN FISHER, Inc.



Essity is a global leader in sustainable solutions for hygiene and health, dedicated to improving wellbeing through products and services, essential for everyday life. Sustainability is an integral part of Essity's business, focusing on value creation for people, nature and society, critical to success and profitability. Essity engage customer channels through its brands using three sustainability platforms: 1) wellbeing, 2) more from less, 3) circularity.

SOLUTION

Essity's success stems from its deep understanding, knowledge and insight of consumers' needs coupled with its ability to transfer this into sustainable and innovative offerings. Driven by their mission, Essity take a complete life cycle approach to its business – including the sourcing, production, development, distribution and management of products after use in a responsible and environmentally sound way.

IMPACT

At least one third of all Essity's innovations improve society or the environment each year. In 2017, 42% of its innovations yielded social and/or environmental improvements. In 2017, 62% of all production waste was recovered in materials or energy. Innovations and new business models such as Tork PaperCircle (world's first paper towel recycling service) reduce carbon footprint by at least 40% and generate value and new ways of innovating between customers, partners, government, business and consumers throughout the value chain.

essity.com | @essity | in Essity



International Flavors and Fragrances Inc. (IFF) is a leading innovator of sensory experiences that move the world. IFF is currently implementing an ambitious sustainability strategy that aspires to incorporate circular economy principles throughout its value chain.

SOLUTION

A central platform of IFF's strategy is regeneration of products, bolstered by a commitment to intentionally design products that support wellbeing, society and the environment. IFF is embedding circular economy principles in their organization's culture by incorporating five aspects of circular design; material health, material recirculation, renewable energy, water and waste minimization, and responsible sourcing. IFF hold themselves accountable through circular design metrics.

IMPACT

Executing against a checklist of its circular design principles and metrics will accelerate IFF's contribution to a circular economy. Specifically, it will assist in the reduction of its reliance on fossil fuels for energy and materials, eliminate the concept of waste, preserve nutrition in the food system, and improve the lives of people across its value chain.

iff.com | **y**@IFF | in International Flavors & Fragrances Inc.

















3 Step IT offers technology-as-a-service: they help clients run their IT more sustainably, provide a more effective IT service, and do so at a lower cost. Using regularly refreshed technology that works well helps customers improve their IT services, while also reducing the total cost of IT as these devices require less support. 3 Step IT manages nearly 2 million devices for some 4.000 customers.

SOLUTION

3 Step IT is a product life extension specialists, with its service based on leasing IT devices. Its clients use the service to acquire and manage IT devices, and then refresh them after a planned life (typically two years for smartphones, and three years for laptops). 3 Step IT reduces lease rental costs by recovering value from used devices when they are replaced. First it securely erases clients' data, then it refurbishes and resells 98% of returned devices for a second life.

IMPACT

In 2018, 3 Step IT's sustainability service handled nearly 500,000 devices. Selling devices for re-use displaces new production. For a laptop, this reduces its carbon footprint by 47%. Re-use also provides affordable technology for markets where performance is less important than price.

3stepit.com | @3StepIT | in 3 Step IT



Mahindra Accelo is a 100% subsidiary of the US\$ 20.7 billion Mahindra Group with a core business of steel processing; it is a pioneer in the customized processing of flat steels, with steel service centers set up across India and the UAE. Recently, it has forayed into new businesses of purlins and recycling. The company truly believe that agility is the key to achieving excellence. It has ranked 6th in *India's Great Mid-size Workplaces 2018*.

SOLUTION

CERO is built on the underlying principle of circular economy and focuses on recycling of older vehicles in line with environmental and legal compliances. CERO means Zero in Spanish and it aims to move India towards a zero pollution nation. This is a first of its kind initiative in the country and a step towards the creation of organized vehicle recycling sector in India.

IMPACT

CERO provides circular supplies in the form of secondary steel (as steel scrap) which helps reduce dependence on scrap imports. It focuses on resource recovery and leads to savings of energy and other natural resources. It aims to cut down vehicular pollution hence leading to the reduction in carbon footprints. CERO helps to complete the circular economy loop for Mahindra Group – from being the producers of vehicles to the recyclers. CERO's services have led to the generation of employment, the creation of safer work environments and provided enhanced customer value.

cerorecycling.com | @CeroRecycling | in CERO Recycling



The Lenzing Group is an international company that produces high-quality fibers and filaments from wood using environmentally friendly and innovative technologies. These fibers form the basis for a wide range of textile and nonwoven applications, used in work and protective wear and in industrial applications. Sustainability is the guiding torch for all R&D and innovation initiatives at Lenzing, driving systemic change through forward solutions.

SOLUTION

Lenzing tackles the textile industry's waste problem through its pioneering REFIBRA™ technology, which involves upcycling a substantial proportion of cotton scraps, for example from garment production, in addition to wood pulp sourced from certified sustainable forestry. These raw materials are transformed to produce new virgin TENCEL™ Lyocell fibers that are used make fabrics and garments. This innovative method makes a significant contribution to efficiency and environmental protection.

IMPACT

The textile industry operates in a linear way that even at the manufacturing stage, around 12 percent of material is lost. TENCEL™ × REFIBRA™ Lyocell reuses parts of this lost material to produce a virgin Lyocell fiber, saving resources in the process. Since its launch, TENCEL™ x REFIBRA™ Lyocell can be found in more than 15 collections. "Together, we're proud to pave the textile industry's way towards a circular economy."

lenzing.com | **y** @LenzingAG | **in** Lenzing Group



Tarkett is a worldwide leader of innovative flooring and sports surface solutions, selling 1.3 million square meters of flooring every day and offering products made of vinyl, linoleum, carpet, rubber, wood, laminate, among others. Tarkett reuses and recycles postindustrial and post-installation waste as well as used products, participating in waste avoidance, reducing the need of virgin raw materials and promoting a new life cycle with quality materials.

SOLUTION

Tarkett eco-designs products based on Cradle to Cradle® (C2C) principles that contribute to people-friendly spaces while respecting the planet's natural capital. In 2018, Tarkett launched iQ One, a new generation of resilient flooring which is 100% recyclable and C2C Gold certified, alongside their iD Revolution, the first C2C Gold-certified modular resilient flooring, made with bio-based and recycled materials, such as recycled PVB from end-of-life windshields. In addition, Tarkett has launched the mineral tiles collection, Cementi Click, made of 95% natural mineral elements.

IMPACT

99,000 tonnes of flooring was collected from 2010 to 2017 through ReStart®, Tarkett's flooring collection program in Europe and North-America. 96% of raw materials were assessed by a third party organization, based on their impact on health and the environment, according to Cradle to Cradle® criteria. Consequently, 71% of the raw materials they use do not contribute to resource scarcity, being abundant, rapidly renewable or recycled.

tarkett.com | **9** @TarkettGroup | in tarkett





















Award for small-to-medium sized enterprises (SMEs) with US\$ 10 to 100 million in turnover, which are transforming their businesses towards the circular economy

LEHIGH TECHNOLOGIES WINNER OF THE YOUNG GLOBAL LEADERS AWARD FOR CIRCULAR ECONOMY SME

What value does the SME community bring to the circular movement and what unique role do they have to play?

Small and medium sized companies play a very key role in driving scalable growth of new and frequently disruptive technologies. SMEs maintain a long-term view, have the needed resources have the ability to focus on one area of the circular economy, becoming real leaders and experts. SMEs can also subjugate the existing norms and within supply chains and create real value.

What are the key advancements needed to drive large businesses to input more recycled feedstocks into their value chains?

To encourage large businesses to input more recycled feedstocks into their value chains, there needs to be a constant focus on driving down costs and improving performance. This is business as usual and the circular economy is not immune. Shortening the supply chain, improving the conversion technology and focusing on feedstock availability and quality are key for a Circular SME.

Big business recognizing the value in recycled materials, even in the case where they are not immediately cheaper, is important. This allows for future improvements, in terms of both cost and performance, in the knowledge that it is good long-term for both the economy and the environment. Big business can help SMEs through direct investment and/or joint development programs.

What are the top three competitive advantages that circularity has helped you secure for your organization?

Participating fully in the circular economy has allowed Lehigh Technologies the ability to offer 30-50% cost reduction versus using raw materials in addition to frequent performance advantages. It has also provided access and credibility to a wide range of industries, governments and companies. Circularity has aided Lehigh Technologies to become the recognized global leader in the circularity of rubber-based feedstocks in several markets including tire, asphalt and construction.

Paul Crehan

President and CEO, Lehigh Technologies

















Lehigh Technologies is employing resource recovery and circular supply models to its strategy by recovering valuable raw materials from end-of-life tires and using that material to create a more sustainable feedstock for the manufacturing of new tires.

SOLUTION

Lehigh's micronized rubber powder (MRP) is used as an additive in a wide range of consumer and industrial products, from tires to plastics to asphalt and more, and can improve the performance of many materials. Compared to other processes, Lehigh's patented cryogenic process produces a far more versatile material that can effectively replace and improve upon oil-based feedstocks.

IMPACT

To date, Lehigh Technologies has manufactured over 500 million tires using its circular model. Seven of the top ten tire companies in the world currently use MRP. Lehigh's parent company, Michelin, plans to use MRP as a standard ingredient in global tire development and meet its bold sustainability goal.

lehightechnologies.com | **У** @LehighADC | In Lehigh Technologies



Olleco was created 12 years ago to deliver technically advanced circular economy solutions for businesses across the food industry. Working with organizations of all sizes, Olleco ensures that they derive maximum financial and energy values from their waste organic resources.

SOLUTION

Taking a uniquely holistic approach, Olleco is the catalyst that brings food businesses together to embrace the circular economy, answering their needs through provision of both sustainable waste processing and renewable fuels. By investing in national collection and processing infrastructure, and deploying advanced anaerobic digestion and biorefinery facilities, Olleco completes the loop for businesses, helping them promote sustainability agendas.

IMPACT

Olleco's visionary approach and expertise in maximizing the value of materials throughout the value chain has earned it a hugely significant share of the UK food industry. Consequently, Olleco has an unmatched impact on greenhouse gas emissions and these will grow exponentially if their methodologies are exported around the planet.

olleco.co.uk | ♥ @Olleco_SCC | in Olleco

















Close the Loop's zero waste to landfill brand promise engenders innovative thinking; the result of which is the development of a highly unique product. Its polymer modified binders utilize waste toner and waste soft plastics diverted from landfill.

SOLUTION

Close the Loop has created an asphalt additive that significantly improves the characteristics of asphalt, making superior quality road surfaces that have a 65% increase in fatigue life and improved resistance to deformation. The additive is for use in asphalt mixes using waste printer toner and waste soft plastics.

IMPACT

Globally, soft plastics are a major environmental issue. For every kilometre of road, Close the Loop use the equivalent of 530,000 plastic shopping bags and waste toner from more than 12,500 printer cartridges. From a circular economy perspective, these road surfaces are infinitely recyclable, meaning they can be scraped off, regurgitated and re-laid forever.

closetheloop.com.au | in Close the Loop



HYLA Mobile applies sustainable circular economy principles to the mobile device market by extending their life. Thanks to HYLA's technologies and processes, pre-owned devices, instead of polluting the earth in landfills, have life-changing impacts on the previously unconnected people of the world.

SOLUTION

HYLA has created a viable model for circular economy by repurposing mobile devices. HYLA collects, analyses, processes and redistributes refurbished devices from developed economies giving them a new life in emerging economies. This approach delivers economic, environmental and social benefits to the partners, consumers and communities it serves. An 'everyone wins' value proposition, this has increased participation from the mobile eco-system.

IMPACT

Since inception, HYLA has re-purposed over 50 million devices, resulting in nearly US\$ 4 billion in value for their owners. HYLA has encouraged sustainable practices to help save 6,500 tonnes of e-waste from going to landfill, avoided nearly 227 billion litres of groundwater pollution and brought connectivity to over 30 million unconnected people.

hylamobile.com | **y** @hylamobile | in HYLA Mobile



MINIWIZ is a trash materials technology company that turns postconsumer waste into high-performance buildings, retail fixtures, and consumer goods. Following an asset-light and financially profitable circular business model, MINIWIZ has delivered over 300+ sustainable turnkey solutions.

SOLUTION

MINIWIZ provides customized solutions that brings together project management, waste consulting, material RandD, design and engineering, and the manufacturing of products to design. Ranging from plastics, textiles, e-waste, bio-waste, metals, and paper, MINIWIZ works with trash directly gathered from its clients and its own collection of recycled materials.

IMPACT

Following a proven circular business model, MINIWIZ has saved over 17 million kg CO₂ with its construction projects alone. With the introduction of the mobile upcycling plant, Trashpresso, recycling can be done anywhere in the world, thereby further reducing the emission of CO2 related to logistics and waste processing.

www.miniwiz.com | in Miniwiz Co. Ltd.



Taking "Each City is a Mine" as the strategic goal, Tianjin Citymine strives to build a complete supply chain from the waste producer to the resource user, in order to achieve a reverse logistics system of urban waste.

SOLUTION

Tianjin Citymine has formed an online-offline integrated business. The offline business features both a movable recycle station and an intelligent management system. The online management system can provide data support for the comprehensive management of waste urban mines.

IMPACT

By establishing a standardized "urban mine" exploration pattern, Tianjin Citymine realized huge savings for the recycling industry with production, operations, logistics and warehousing costs. It also achieved large reductions on reported cases of fraud, safety hazards and secondary pollution.

citymine.com.cn

















CoreCentric Solutions has been a leader in the repair, remanufacture and returns management industry since its conception in 1995. Its business model is built around circular economy principles, providing brand owners with a sustainable returns management solution.

SOLUTION

CoreCentric provides a circular economy solution for broken and returned parts and products. Using a rigorous remanufacturing process, CoreCentric brings broken and unwanted parts and products back to life.

IMPACT

In 2017, CoreCentric recovered more than 2 million service parts and 700,000 products. its yield is over 97% with parts and over 75% with products. 2018 has seen significant growth in both areas.

corecentricsolutions.com | in CoreCentric Solutions, inc.



Finlayson is a 200-year-old home textile brand from Finland. Finlayson's brand values are responsibility, interest towards new phenomena, and courage. These are the same values that originally made Finlayson successful. Finlayson has strived to implement these values to its operations. For example, Finlaysons's objective is to increase the share of more sustainable materials to at least 30% by 2020.

SOLUTION

Finlayson only makes products that are of high quality. The majority of its products have a 5-year-warranty and one even has a 50-year-warranty. Finlayson increasingly replaces conventional cotton with recycled materials. For example, Finlayson collects old bed linen and worn jeans from customers and turns them into rag rug products and denim towels.

IMPACT

In 2017, Finlayson collected 12 tonnes of jeans and 28 tonnes of bed sheets. Altogether, since 2016, Finlayson has collected 70 tonnes of material for recycling. The CO2 footprint per product decreased by 30% in 2017 and denim towels saved over 10 million litres of water in total – equal to over four Olympic-size swimming pools.

finlayson.fi | 9 @FinlaysonSuomi | in Finlayson Oy



TerraCycle is an innovative waste management company with a mission to eliminate the idea of waste[®]. Operating across 21 countries, TerraCycle partners with leading consumer product companies, retailers, cities and facilities to recycle products and packages that would otherwise end up being land filled or incinerated - ranging from dirty diapers all the way to cigarette butts.

SOLUTION

TerraCycle works with leading consumer product companies to integrate hard-to-recycle waste streams, such as ocean plastic, into their products and packaging. TerraCycle also sells Zero Waste Boxes that are purchased by end users to recycle items in offices, homes, factories and public facilities.

IMPACT

TerraCycle has diverted more than 4 billion pieces of waste from landfill, won over 200 awards for sustainability and donated almost US\$ 25 million to schools and charities since its founding 15 years ago.

terracycle.com | @TerraCycle | in TerraCycle



Vegware is a manufacturer and visionary brand: the global specialist in plant-based compostable food service packaging. Its plant-based catering disposables are made from renewable, lower carbon or recycled materials, and can all be commercially composted with food waste where accepted. Vegware has operational bases in the UK, USA, Australia and Hong Kong, with distribution networks across Europe, the Middle East and the Caribbean.

SOLUTION

Vegware's business is built around reduced waste and increased recycling in foodservice. Where food contamination stops plastic-card packaging being recycled, compostable disposables offer a practical solution. Vegware takes producer responsibility seriously, going beyond packaging to actively encourage composting. This includes the launch of its Close the Loop composting collection service in the UK, available in Bristol, Worcester, Gloucester, and most of Scotland.

IMPACT

Since 2012, Vegware's full-time Environmental Team have been working on routes to commercial composting, actively driving change to UK recycling. Since June 2017, Close the Loop has collected and composted over 110 tonnes of used Vegware packaging - the equivalent of 9.7 million coffee cups. Its clients' catering 'waste' is turned into high-grade compost used for agriculture, horticulture, and landscaping purposes.

vegware.com | **y** @vegware | **in** Vegware





















Award for the cities, regions, education establishments, NGOs, local or national government bodies or programs which best enable an environment for the circular economy to develop and flourish

EUROPEAN COMMISSION

WINNER OF THE WORLD ECONOMIC FORUM AWARD FOR CIRCULAR ECONOMY PUBLIC SECTOR

What are the top three changes you would like to see in international regulations and policy that would best support the global uptake of circularity?

The European Union is a global leader in circular economy, but individual efforts are not going to ensure fast change if they are not combined with an ambitious plan to make international markets more circular.

It is crucial to establish bilateral and multilateral structured channels of communications and coordination with key international actors, such as the recent agreement on circular economy the EU has signed with China in 2018 or the promising work we would wish to see advancing on common global standards for plastics waste and recycled plastics, for example.

We need to engage more with the private sector at the international level so that businesses can contribute to the transition to a circular economy. We live in a world where supply chains are global and complex private sector cooperation is crucial to ensure international markets take up the benefits of more sustainable development. The financial sector and private capital engagement also need to be catalyzed through public finances with an appropriate framework for sustainable finance. And this is precisely what we are working on.

Jyrki Katainen

Vice-President for Jobs, Growth, Investment and Competitiveness, European Commission

What key takeaway can other public-sector bodies could learn from the European Commission as they drive their own transitions to the circular economy?

Circular economy is a complex and far-reaching concept. Therefore, establishing a comprehensive strategy, looking at closing the loop and targeting strategic sectors as well, is the best way to ensure effective change. Our circular economy action plan introduces measures covering the whole lifecycle of products - from design and production, through to consumption to waste management, and then back into the economy as secondary raw materials.

Circular change is faster when economic actors and civil society are directly involved. When we create the conditions for the best ideas to thrive, we advance our common understanding, and we share benefits with our communities. The Plastics Strategy is an example of where we have seen unprecedented interest and support from citizens, having established successful cooperation with the private sector through voluntary commitments and other instruments, all the while keeping close relations with sectorial NGOs dealing with the circular economy.

Karmenu Vella

Commissioner for Maritime Affairs and Fisheries, European Commission

















The European Commission is the executive branch of the European Union. It promotes the general interest of the Union, proposes and enforces legislation, develops and implements policies, and executes EU budget. The promotion of the circular economy falls within its competences for economic development and environmental protection.

SOLUTION

In 2015, the European Commission developed a framework to engage public authorities, businesses, and citizens in the circular transition. It has committed to its full implementation by 2019. The Circular Economy Action Plan identifies 54 specific and innovative actions to "close the loop" - from production and consumption to waste management and the market for secondary raw materials. The framework behaves as strategic guidance for the European Union and its 500 million citizens, and is a global call to action.

IMPACT

Public authorities at all levels are increasing their ambitions, setting frameworks and investing in infrastructure to promote the transition. Business leaders are more aware about opportunities and are prone to invest and innovate to move away from the linear model. In addition, the Commission engages with international partners to promote the transition at a global level.

ec.europa.eu | 💆 @EU_ENV | in European Commission



Governing a diverse population of 2.8 million people, the City of Toronto aspires to achieve zero waste and become the first city in the province with a circular economy, as set out in its 2016 **Long Term Waste Management Strategy.**

SOLUTION

To drive innovation and the growth of a circular economy, the City of Toronto established a circular economy business unit and working group, creating a framework to integrate circular economy principles into City purchasing. In addition, the City has committed to developing a circular economy roadmap by working with a range of stakeholders and key economic sectors.

IMPACT

The City of Toronto is one of the first in North America to invest in infrastructure that turns organic waste into renewable natural gas that can be used to fuel collection trucks. It is also implementing five new community programs that provide opportunities for bike and clothing repair, and redistributing surplus food.

toronto.ca | **Y** @cityoftoronto | in City of Toronto

















Circular Glasgow influenced the Scottish Government's policy shift to driving the circular economy through cities, and Glasgow City Council's commitment to a task-driven Circular Route map by 2019. Best practice piloted through Glasgow's work is now being implemented across Scotland and shared across 20 countries through #CEHotspotScotland.

SOLUTION

Circulars Glasgow methodology encourages cross-sector collaboration by implementing a range of pioneering support mechanisms, designed by Circle Economy, including Circle Lab and Circle Assessments, as well as initiating a design service for businesses.

IMPACT

Over 550 businesses have been engaged, with Circular Glasgow helping to increase revenue streams, realize financial savings and enhance competitive advantage using a range of practical tools. Next steps will be to build on wider business engagement, alongside academia and public sector.

circularglasgow.com | @CircularGlasgow | in Circular Glasgow



The Ministry of Environment and Food of Denmark is responsible for the areas of environmental protection, farming and food production. In collaboration with a broad majority of the Danish Parliament, the Ministry is working to promote a circular economy throughout all of Denmark's sectors.

SOLUTION

The Ministry has created the Strategy for Circular Economy. In this, 116 million DKK has been allocated, which is divided into 16 concrete initiatives that promote a circular economy in Denmark. The circular initiatives in this strategy were developed in close collaboration with the government's Advisory Board for Circular Economy to secure support from a broad range of major interest groups and organizations in Denmark

IMPACT

Through promotion of the circular economy, the Ministry supports companies to harness more value from the same materials through better product design and reproduction, and selling products as services. Together, it is hoped that this approach can ease the pressure on natural resources and improve the environment for the benefit of future generations.

en.mfvm.dk | w @MFVMin | in Ministry of Environment and Food



The Ministry of Infrastructure and Water Management is the coordinating ministry for the transition to a circular economy in the Netherlands. The Ministry plays a key role in anchoring the objectives for a circular economy in government-wide policies and supporting stakeholders in scaling up circular solutions.

SOLUTION

The Ministry initiated the nation-wide Circular Economy Programme, aiming to halve the use of primary resources by 2030 and become fully circular by 2050. It laid the innovative foundations for five sectoral transition agendas: food and biomass, construction, plastics, manufacturing industry and consumption goods, developed with all relevant stakeholders, totaling over 390 individuals, including knowledge, social and investment agendas, concrete policy interventions and monitoring.

IMPACT

As the Transition Agendas have been approved by government, an Implementation Plan (2019-2022) with concrete actions from both government, local authorities, knowledge institutes and the private sector is now underway. It includes collaborative actions, such as the development of a National Plastic Pact, as well as concrete projects and programs, financial incentives and budgets, including allocation for circular government procurement that will transform the value chain.

government.nl/topics/circular-economy | @MinInfraWaterNL



Shandong Association of Circular Economy (SACE) leads promotion of the circular economy agenda in the region of Shandong, China through a wide range of activities. Its members engage in circular economy research efforts, promote awareness of the circular economy among citizens, assist government in devising legislation and support businesses through provision of technical guidance to assist their transition to circular economy business models.

SOLUTION

SACE encourages effective innovation through its circular innovation evaluations across the province. The most disruptive and effective technologies are highlighted through an awards process, after which their roll-out through Shandong is supported. SACE's members engage in collaborative opportunities with international circular economy technology leaders with the aim of knowledge sharing and increased business engagement across the province.

IMPACT

As the oldest, 5-A system graded, circular economy non-profit organization in China, Shandong Association of Circular Economy has made a significant impact to move Shandong towards a more circular economy. There are currently over 200 highly commended circular economy member enterprises across a multitude of industries that originally stemmed from SACE.

sdcyc.com

















Circular Economy Club (CEC) is a leading international network of over 3,100 circular economy professionals and organizations, from over 85 countries. CEC is a global, non-profit organization, offering free membership to anyone interested in joining. CEC aims to connect professionals to foster opportunities and collaboration on circular initiatives and provide them with the tools and resources needed to bring the circular economy to life.

SOLUTION

CEC seeks to achieve its goals through its online platform and three main programs: CEC Mentors, CEC Organizers and CEC Global Events. Connecting circular economy experts to young students, professionals, innovators and start-ups is essential to successfully embed circular principles in projects and initiatives. CEC launched the Mentors program to facilitate this circular advancement, linking CEC Members who have vast experience in implementing circularity with those who can benefit from such expertise. The CEC Organizers program is a collection of city-based hubs which facilitate links between circular leaders in the same geography, ensuring circularity can be achieved at city-level scale. In addition to facilitating individual and city-level circular connections, Circular Economy Club Global Events are opportunities for CEC members to come together to solve both local and global sustainability challenges, harnessing the array of talent and experience available within CEC.

IMPACT

150 young researchers and entrepreneurs have been mentored by CEC Mentors and are implementing circular economy in their projects. 3,000 initiatives were identified by over 2,000 members during the Circular Economy Mapping week - one of CEC's global events organized to collaboratively solve challenges.

circulareconomyclub.com | @CircularEClub | in Circular Economy Club



Through its Sustainability Advantage program, the New South Wales (NSW) Office of Environment and Heritage helps businesses reduce costs, build their reputations, gain competitive advantage and grow sustainably, whilst improving environmental outcomes and creating social capital. It is a trusted authority, honest broker and incubator for innovative technology and new business models, helping over 650 participating organizations enjoy US\$ 120 million in collective savings annually.

SOLUTION

Sustainability Advantage is accelerating the transition to a circular economy in NSW by facilitating collaboration and innovation between 23 existing and separately funded industry Product Stewardship Organizations (PSOs). For the very first time, these organizations now share knowledge and resources to address problematic waste materials like, electronics, mattresses, nappies, textiles, carpets, cigarette butts, tyres, paint, crushed glass and soft plastics.

IMPACT

Sustainability Advantage's product stewardship cluster is an incubator for project development between major brands, retailers, manufacturers, recyclers and consumers. Current projects include more responsible design/ manufacturing, repair, reuse, shared logistics, technology innovation and new market development. Project outcomes include 200,000 tonnes of waste resources kept in the productive economy, creating over 200 new jobs targeting long-term unemployed, disadvantaged and homeless.

environment.nsw.gov.au/sustainabilityadvantage | 💆 @OEHmedia | 🛅 Office of Environment and Heritage (NSW)



VTT is a visionary research, development and innovation partner. It drives sustainable growth, tackling the biggest global challenges of our time, turning them into growth opportunities. VTT paves the way forward, assisting society and companies to grow through harnessing technological innovations. It has over 75 years of experience of top-level research and science-based results. VTT is at the focal point where innovation and business come together.

SOLUTION

Some of the key innovations VTT has created include cellulose-based multilayer materials to replace plastics in food packaging, technology to recycle cotton without losing its quality, turning carbon dioxide into nutritional protein, producing egg white and dairy proteins without animal involvement, thermochemical conversion technologies to refine biomass and, finally, transforming industrial side streams into fuels, chemicals and food ingredients.

IMPACT

One of VTT's paths to impact is through the support of start-up companies such as Spinnova who produces textile fibre from wood in a disruptive, environmentally sound process. Other companies who have collaborated with VTT include: Paptic, who make durable and flexible bags from cellulose that can replace plastic bags; Solar Foods, who use a microbial system to brew nutritional protein from carbon dioxide, making a leap in sustainable food production; and Infinited Fiber Company, who developed VTT's technology to allow textile waste to be used again and again while preserving 100% quality.

vttresearch.com | 9 @VTTFinland | in VTT





















Award for investment bodies which are providing financial backing for the circular economy to become mainstream



What has driven the investor community's increasing interest in the circular economy?

The global economy has enjoyed decades of strong growth, but that growth is slowing. Investors are looking for attractive returns and the materials and waste sector, which is expanding rapidly, is attracting their attention. This is a sector where the benefits of 'circular economy' thinking in action are clear to see, with a wealth of opportunity on offer to investors, such as new product designs focusing on the use of materials that are easier to recycle and the application of AI technology to improve waste management logistics.

With the recent sea-change in regulation in this area, we are now presented with new local challenges for no longer can you ship waste to another country. As the cost of these traditional routes for waste disposal have jumped up, the economic incentives for 'circularity' have become much more attractive.

In addition, policy makers around the world have been strengthening regulations that support further development of the circular economy, for example the EU's Circular Economy Action Plan. Consumer interest in this area has also increased, in no small way thanks to documentaries like the BBC's Blue Planet, Together these factors create a perfect storm. The recent scale of new policy developed and implemented, aimed at reducing the use and environmental damage caused by plastics has been unprecedented. Impax expects these investment conditions to continue to improve in these areas.

What more needs to be done to bring greater investment into this space?

To bring greater investment into the area, clear, long term incentives are needed. Impax believes that policy intervention is best directed at market design and optimization, such as reducing or eliminating barriers to the trade in materials and establishing long-term, stable targets for reuse or recycling. In addition, more ambitious requirements for producer responsibility to recover or recycle are needed. Collaborative government is also necessary in this area.

Ian Simm

Founder & Chief Executive, Impax Asset Management

















Impax Asset Management is a global investment firm managing specialist strategies with US\$ 11.5 billion assets under management focused on Resource Efficiency and Environmental Markets through global, listed companies since 1998. Companies within Impax's portfolio provide environmental solutions across **Energy Efficiency, Water, Waste and Resource Recovery, Food and** Agriculture sectors.

SOLUTION

Impax first created and defined the "Environmental Markets" classification system in 1998 and has continued to develop it since. Impax has identified 1,600 listed companies globally that provide environmental solutions, including circular economy business models, such as reverse vending machinery for container recovery, food waste recovery for transformation into new feeds and products, and providers of reusable trade logistics crates.

IMPACT

Environmental investing has provided strong financial returns. Since 2015, Impax has been annually measuring and reporting the positive environmental impact of the products and services of its companies, across four metrics: 1) net carbon avoidance, 2) renewable energy generation, 3) water treatment and savings, 4) materials recovery and waste treatment. Methodology is externally assured.

impaxam.com | 🛩 @ImpaxAM | 🛅 Impax Asset Management



The European Investment Bank (EIB) is the long-term lending institution of the European Union owned by its Member States. It makes long-term finance available for sound investment in order to contribute towards EU policy goals, including promoting a circular economy.

SOLUTION

EIB's support for the circular economy is based on three mutually reinforcing actions. Firstly, awareness raising through knowledge development, dissemination, and mobilization of key stakeholders, aimed at catalyzing circular investments. Secondly, advisory support seeking to improve the bankability and investment-readiness of circular economy projects. Finally, finance, where needed is provided using 'risk sharing' instruments benefitting from EU guarantees.

IMPACT

Over the last five years, the EIB provided EUR 2.1 billion in co-financing for more than 100 circular projects in the industry and services sectors, including for water management, agriculture and the bio-economy and product-to-service projects, with positive impacts on climate change and economic growth.

eib.org/circular-economy | **Y** @EIB | **III** European Investment Bank (EIB)

















Generate Capital is a diversified infrastructure company that operates at the center of the circular economy. It owns and operates roughly US\$ 500 million of clean energy and sustainable infrastructure assets across power, waste and water and transport markets.

SOLUTION

Generate Capital facilitates the adoption of circular economy infrastructure by turning expensive up-front costs into everyday customer savings. Generate's model enables customers to benefit from the compelling economic value proposition of these sustainable solutions by driving lower equipment, services and capital costs. Facilitating this market development requires the alignment of interests of multiple stakeholders plus a long-term mindset that its business model uniquely provides.

IMPACT

Generate Capital is the only organization specifically focused on deploying circular economy infrastructure at scale, processing nearly 700,000 tonnes of organic waste per year to power roughly 10 GW of electricity capacity.

generatecapital.com | ♥ @GenerateCapital | In Generate Capital, Inc.



Intesa Sanpaolo is the leading financial institution supporting the systemic transition towards the circular economy. Since 2015, Intesa Sanpaolo is the only Financial Services Global Partner of the Ellen MacArthur Foundation and circular economy is a key strategic pillar within the Group 2018-2021 Industrial Plan.

SOLUTION

The bank is fully engaged in re-thinking financial instruments to support the re-design of the industrial ecosystem. On September 2018, a EUR 5 billion plafond has been launched to circular economy-compliant finance transactions, with a potential portfolio de-risking benefit. Intesa Sanpaolo also launched its CE Lab in Milan for open-innovation programs between corporates, SMEs and start-ups.

IMPACT

The bank is active in enhancing knowledge on circular economy and it is a core partner in the "Cities and CE for Food" initiative launched by the Ellen MacArthur Foundation. Additionally, Intesa Sanpaolo engages in advocacy activities related to circularity with national and international institutions.

group.intesasanpaolo.com | 💆 @intesasanpaolo | in Intesa Sanpaolo



Taaleri's mission is to enable sustainable ownership. Taaleri sees itself as the pioneer of sustainable investments including circular economy, renewable energy and impact investments. It combines ideas, entrepreneurship and capital in order to create sustainable growth.

SOLUTION

Taaleri's solution helps investors to invest in a circular and sustainable economy. It enables circular economy innovations and business models to become mainstream reality by providing equity and active ownership. Taaleri's portfolio includes several solutions, like a water saving company, sustainable work wear company and various renewable energy companies.

IMPACT

Taaleri Circular Economy Private Equity Fund is an excellent model of impact investing. It combines economic, environmental and social values and impact. Taaleri's investments have direct and measurable impacts - for example in cutting CO₂ emissions, saving resources, reducing waste and creating jobs.

taaleri.com | 🛩 @Taaleriteam | in Taaleri



YES BANK has identified climate-aligned businesses as sunrise sectors. In India, these present the tremendous investment potential of up to US\$ 3.1 trillion until 2030 and bearing the potential to become the entire backbone of this emerging economy.

SOLUTION

The bank's knowledge driven and targeted approach towards climate-aligned sectors helps it understand and explore transformational models, including models aligned to the circular economy. It is also demonstrating leadership through pioneering instruments, such as green bonds and green retail products, developing domain experts, while also creating value for innovative start-ups in the climate-aligned sectors through induction and accelerator support.

IMPACT

The projects funded via YES BANK's green bonds avoided roughly 2.3 million tonnes of CO₃ emissions in FY18. Focus on circular sectors also contributed to the bank figuring on key ESG indices such as DJSI, MSCI, and FTSE4Good, and receiving 'Prime' status by OEKOM AG.

yesbank.in | W @YESBANK | in YES BANK

















BlackRock is one of the world's leading providers of investment, advisory and risk management solutions. BlackRock's purpose is to help more and more people achieve wellbeing through wealth. And as a fiduciary to its clients, BlackRock is dedicated to protecting and growing the value of its clients' assets by incorporating businessrelevant sustainability issues into its investment research, portfolio construction and stewardship processes.

SOLUTION

BlackRock helps clients achieve their twin goals of sustainability and financial performance through four broad approaches: exclusionary screens by divesting from companies involved in controversial activities; ESG strategies that base investment decisions on companies based on their ESG profile; thematic strategies offering exposure to transformative enduring trends such as climate change and inclusion and diversity; and finally through impact investing that targets defined and measurable social and environmental outcomes alongside financial objectives.

IMPACT

BlackRock has built out a global suite of over 90 sustainable investment strategies, ranging across asset classes, vehicles, and investment styles that deliver targeted financial and sustainability outcomes. Due to its unique size, BlackRock recognizes and embraces its responsibility to engage with clients, investors and companies to foster long-term value and develop innovative sustainable investment solutions that also contribute to the advancement of the circular economy.

blackrock.com | @blackrock | in BlackRock



Closed Loop Partners (CLP) invests in building a circular economy through below market rate project finance (Closed Loop Fund) and venture investment (Closed Loop Ventures). It identifies and invests in infrastructure projects that accelerate the development of more circular supply chains as well as catalytic technologies and business models to drive circularity across a range of material categories.

SOLUTION

Since 2015, Closed Loop Partners has invested over US\$ 44 million across 30 investments and unlocked an additional US\$ 105 million in co-investment.

IMPACT

Across its portfolio, Closed Loop Partners has diverted more than 8 million cumulative tons of waste from landfill and eliminated more than 16 million tonnes of greenhouse gases. For every dollar invested, it returns 100 kg of recycled material back into the supply chain, avoiding 298 kg of GHG and bringing US\$ 2.40 of economic development to communities.

closedlooppartners.com | @LoopFund | in Closed Loop Partners



NY Green Bank (NYGB) is a US\$1 billion state-sponsored investment fund that invests in clean energy and sustainable infrastructure within New York State. Unlike other state backed initiatives that offer grant or incentive payments, NYGB funds are invested at market rates, ensuring that the organization can cover its own costs while preserving its capital base for continued deployment.

SOLUTION

NYGB provides financing to project developers, energy service companies, and other sustainable infrastructure market participants for economically and technically viable projects, especially where financing from traditional capital providers is not readily available. NYGB has utilized innovative approaches to financing structures to mobilize clean energy activity and private capital in New York, reducing the need for further ratepayer funding.

IMPACT

As of September 30th 2018, NYGB has committed US\$ 580.2 million to sustainable infrastructure, driving total clean energy investments across New York State of up to US\$ 1.68 billion. These investments are expected to reduce greenhouse gas emission of between 7.2 and 9.2 million metric tons - equivalent to removing as many as 88,300 cars from the road for 24 years.

greenbank.ny.gov | @NYSERDA | in Ny Green Bank



Social Impact Ventures is a hands-on impact investment partner. providing Dutch social enterprises - often active within the circular industry — with financial resources and active support to help achieve their social mission. Its vision is a world where everybody contributes to a circular and inclusive economy, and Social Impact Ventures believes that the power of entrepreneurship can address challenges facing our society, driving sustainable and inclusive growth.

SOLUTION

Social Impact Ventures provides social enterprises venture capital funding, focusing on opportunities where investments help passionate entrepreneurs solve pressing social or environmental challenges and generate healthy and fair investor returns.

IMPACT

With its circular investments, Social Impact Ventures targets reduction of CO2, SO2, NO2 emissions, water usage, water pollution, chemical usage, electricity usage, and greenhouse gas emissions. It combines capital investments with active hands-on venture assistance on key strategic challenges, networks, recruitment, commercial activities, impact defining/measuring and raising additional funding.

socialimpactventures.nl | in Social Impact Ventures NL





















Award which recognizes organizations using technology to enable the circular economy; chosen from entries across public sector and all business categories



How important are Fourth Industrial Revolution technologies, such as AI, in advancing the circular economy?

Building a circular economy requires gathering massive amounts of data and putting it to work to solve some of our big challenges. This is a big transition to make from the technologies of previous generations – but Al can be a powerful tool to enable this transition.

There are a lot of operational complexities around reverse logistics. Yet, some of the most common things we do to put products back into the economy - through activities like recycling - are vastly improved through simple sorting technology that can identify pure streams of product through visual recognition. This is Al's sweet spot, and it will gain in importance as time goes on.

What are the most impactful ways disruptive technology can transform businesses' cultures and operations towards circularity?

As we all know, we are a long way from achieving circularity. On the flip side, this means that there are many opportunities for businesses to fill this need and have a big impact. For instance, only a small fraction of used materials are put back into the system again - around 9%. This means that 91% of all materials go to landfill - a market that is ripe for new technology to come and can make a big difference.

Policy change is important, but disruptive technology has the potential to really move the needle. For example, at Winnow, we provide tools to give transparency to waste flows, allowing insights that help chefs drive significant operational changes - all in the interest of saving costs. The technology provides the basis to underpin the operational change needed in kitchens, and we see an average waste reduction of over 50%. Collectively our users are preventing 23 million meals a year from the bin which is a great achievement, but we still have a long way to go to solve this problem at a system level.

Marc Zornes Founder, Winnow















TECH DISRUPTO



Winnow develops technology to help chefs achieve greater visibility in their kitchens and make better decisions that lead to dramatically reduced food waste and costs.

SOLUTION

The Winnow system is a smart meter which connects commercial kitchens to cloud software allowing it to record and analyze exactly what is put in the bin. This gives chefs the information necessary to drive improvements in their production processes to cut food waste in half, saving money and reducing their environmental footprint at the same time.

IMPACT

To date Winnow has demonstrated significant impact. It has cut food waste in half in thousands of kitchens globally. It has also delivered US\$ 25 million in savings to its customers – that's 18 million meals per year and a waste equivalent of preventing one meal from going to waste every seven seconds.

winnowsolutions.com | @WinnowSolutions | in Winnow



Cambrian Innovation is a globally-recognized, industrial biotechnology company committed to helping the industrial sector economically and simply close resource loops by extracting clean water and clean energy from wastewater streams using revolutionary, robust, and resilient proprietary technologies.

SOLUTION

Cambrian's award-winning EcoVolt® Reactor is a cutting-edge biological process that efficiently converts wastewater to renewable energy. Through its proprietary membrane bioreactor and data-analytics systems, Cambrian Innovation offer modular, pre-fabricated, and scalable wastewater treatment plants. Cambrian's business model, the water-energy purchase agreement (WEPA, like the power purchase agreement in solar) is catalyzing deployment, enabling customers to minimize risk and pay per litre.

IMPACT

With nine operating plants across the United States and a tenth under construction, Cambrian Innovation has grown from a 50 mL cell in a MIT lab to treating 322 million litres of wastewater, recycling 95 million litres of water, and creating or saving 1 GW energy per hour.

cambrianinnovation.com | ** @CambrianInno | in Cambrian Innovation Inc

















Enerkem produces advanced biofuels and renewable chemicals from waste. Its disruptive proprietary technology converts nonrecyclable, non-compostable solid waste into methanol, ethanol and other widely-used chemicals. Enerkem's facilities are built as prefabricated systems based on the company's modular manufacturing infrastructure that can be deployed globally.

SOLUTION

Enerkem's patented technology chemically recycles the carbon contained in non-recyclable waste (i.e. garbage). In less than five minutes, Enerkem's process first converts this carbon into a pure synthesis gas (also called syngas), which is then turned into biofuels and chemicals, using commercially available catalysts.

IMPACT

Enerkem's breakthrough technology helps increase waste diversion and promotes the circular economy through fuels and chemicals derived from waste. Enerkem helps diversify the energy mix and make greener everyday products while offering a sustainable and economical alternative to landfilling, incineration and traditional fuels and chemicals.

enerkem.com | 9 @Enerkem | in Enerkem



MaaS Global is the first true Mobility-as-a-Service (MaaS) operator with its award-winning Whim service.

SOLUTION

The Whim is an all-inclusive, commercially available MaaS solution providing users with all of their transport services under a single monthly subscription. With Whim, customers can plan, book, and pay for all their mobility needs at a push of a button. With a fully digital experience and backbone, Whim scales fast, as the infrastructure investments to mobility already exist.

IMPACT

With over 2.1 million trips done and removing friction through a subscription model, Whim is starting to shape users' travel habits, in favour of circular modes. Its users are already showing a modal shift towards shared and active mobility.

maas.global | 🖤 maas_global | in MaaS Global Ltd



Wasteless is a turn-key food waste reduction solution for food retail, unleashing the power of dynamic pricing, based on expiry dates. It offers mark-down optimization - enabling clients to achieve a 60% reduction in food waste, boost top line revenues by 6% and the opportunity to raise actionable consumer waste awareness.

SOLUTION

With Wasteless's solution, supermarkets sell more and waste less with mark-down optimization, while, in parallel, they can leverage Reinforcement Learning through its AI technology. Consumers see mark-downs on products, which enables them to take sustainable purchasing decisions, by paying less for perishable products with shorter expiration dates. Depending on the number of stock keeping units, the SAAS continuously monitors stock levels to alert for stock-issues and recaptures lost revenue opportunities including cost of waste and out-of-stock items.

IMPACT

Drawdown.org finds reducing food waste is the third most impactful measure to reverse climate change. Food makes up 22% of discarded municipal solid waste. The single largest source of GHG, it causes 8% of emissions - with 5% due to retail expiration date waste. Through reducing food waste, Wasteless saves over US\$ 1,500 trillion in CO₂ cost annually.

wasteless.co | @WasteLess | In Wasteless - Reducing Food Waste



ZenRobotics is a leading supplier of intelligent sorting robots for the waste industry. With the help of robots, ZenRobotics provides modern waste management solutions to its customers using the most advanced technology to sort waste, while reducing costs and health risks.

SOLUTION

ZenRobotics is a robotic waste sorting system that combines modern sensors, industrial robots and Artificial Intelligence to identify and sort mixed waste into valuable recyclables. Unlike traditional sensor-based technologies, ZenRobotics' robots rely on object recognition, enabling that enables more versatile sorting. The robots can be trained to recognize new fractions that allow more flexible waste sorting when the composition of waste changes.

IMPACT

Robotic waste sorting maximizes the efficiency of waste sorting, increases the purity of recyclables and reduces risks for injuries. New, smarter and more efficient technologies are a necessity to reach higher purity requirements and recycling rates. Advanced technologies could also have a positive impact on the attractiveness of the waste industry.

zenrobotics.com | @zenrobotics | in ZenRobotics Ltd.

















DSM-Niaga is a group of redesigners, outsmarting complex combinations of toxic and non-recyclable ingredients in everyday stuff. DSM-Niaga holds a non-negotiable design philosophy to make products healthier and fully recyclable. DSM-Niaga does not compromise on performance, even if it takes a radical change in manufacturing and business models.

SOLUTION

DSM-Niaga enables new products and business models through circular economy design principles and technology innovations. In the last four years, DSM-Niaga has re-designed products deemed heavy contributors to landfill by volume – such as carpet, mattresses and furniture – together with like-minded business partners.

IMPACT

Over 1.5 million square meters of carpet has been manufactured using its technology, with a reduction of 8 kg CO₂ equivalent per m² when compared to mainstream production processes. DSM-Niaga's work has enabled the re-use of materials that otherwise would go to waste, with a strong focus on materials and healthy and environmental stewardship for a healthy circular economy.

dsm-niaga.com | 9 @DSM_Niaga | in DSM-Niaga



The Excess Materials Exchange (EME) is an online secure software platform that acts like a dating site for secondary materials, including waste. It matches the supply and demand of materials with their highest reuse potential. EME actively facilitate cross-industry and cross-sector matches, finding new destinations with the highest financial return, and lowest environmental and social footprint.

SOLUTION

The Excess Materials Exchange uses a combination of tools and services to facilitate the exchange of secondary materials. Through its resource passport, it gives resource flows an identity. Materials are tracked and traced using EME's blockchain-based platform and, using a toolbox of artificial intelligence/machine learning tools, EME identifies high-value matches and quantifies the environmental and financial value of these matches.

IMPACT

Together with a number of pioneers including DSM, Philips, Sodexo, Tarkett, ABN-AMRO, EY and Schiphol, EME identified high-value destinations for 30 material flows with a combined weight of 70 metric tonnes. This led to a reduction of ${\rm CO_2}$ emissions equivalent to 850,000 car rides from Amsterdam to Copenhagen – enough energy to light the streets of Amsterdam for 15 years and the annual water use of 11 million Dutch people.

excessmaterialsexchange.com | in Excess Materials Exchange



Topolytics is a data aggregator and analysis business that is exposing the generation, movement and fate of secondary raw materials in an industrial and commercial context. Topolytics is, according to Cleantech Group, at the forefront of the growing 'smart waste' sector. In 2017, Topolytics was invited to join the Ellen Macarthur Foundation CE100, as a leading circular economy innovator.

SOLUTION

Topolytics is a smart grid for secondary raw materials use. Its 'WasteMap' and 'WasteTrack' platforms draw in data from producers of secondary raw materials and the recycling or reprocessing sector. This generates the most accurate, verifiable dataset on these materials and their movements locally and globally. Machine learning and geospatial analytics then generate insights and reports for these materials users and processors.

IMPACT

Typically, secondary raw materials are generated in one location, then moved for sale, re-manufacture, disposal or reuse. This complex system is opaque and sub-optimal and significant value is lost. By building location intelligence into this system, Topolytics supports commercial decisions in a processing capacity, and arms investors and policy makers with insights and decision support that ultimately enables a circular economy at scale.

topolytics.com | @topolytics | in Topolytics



Zero Mass Water's mission is to make drinking water an unlimited resource. SOURCE is a Hydropanel that creates drinking water by combining sunlight and air — made possible by the application of advanced materials science, thermodynamics, and controls technology. With SOURCE Hydropanels, Zero Mass Water puts the power of safe. high-quality water production into the hands of every person in nearly every climate and corner of the world. Zero Mass Water is headquartered in Scottsdale, AZ, USA with installation partners across the globe.

SOLUTION

SOURCE is a Hydropanel, a solar powered technology needing only sunlight and air to make drinking water. Installed on your roof or on the ground, SOURCE extracts water vapor from the air to make, mineralize, and deliver drinking water to your tap. Uniquely independent of infrastructure, SOURCE is the only technology capable of making high-quality, delicious drinking water without plugging into an additional electric or water supply. While SOURCE looks similar to a solar panel, its purpose is to make water from the air.

IMPACT

Zero Mass Water's purpose is to perfect water for every person in every place. Its technology, SOURCE Hydropanels, ensure its customers have the best water possible, right at the tap. Whether at a home in the US or at a remote Pacific island, Hydropanels make the world's only off-grid, renewable drinking water. In a world where every person experiences water stress, SOURCE gives you drinking water peace of mind.

zeromasswater.com | @zeromasswater | in Zero Mass Water





















Award for early-stage organizations, with US\$ 1 to 10 million in booked revenue, which are at the forefront of the circular economy, demonstrating innovation and market disruption



What value does the entrepreneurial community bring to the circular movement, and what unique role do they have to play?

Entrepreneurship brings fresh ideas, concepts and business models to accelerate the shift towards a circular economy. This happens through disrupting new markets, engaging in design sprint consultancy and in-house work with established companies - bringing a new circular mindset to the upcoming talent that is entering the job market. The role is to pivot and prove, as soon as possible, real and scalable solutions with enhanced impact.

What support do entrepreneurs need from more established businesses to increase and scale the impact of their circular solutions?

Entrepreneurs need more collaboration from established businesses, to share risks when the outcome is uncertain and to ensure entrepreneurs remain unique to larger organizations. When this does not happen, there is a risk that their real potential to compete against non-circular solutions that, perhaps are performing better, is ieopardized.

What are the top three competitive advantages that circularity has helped you secure for your organization?

We have secured a competitive advantage through anticipating the "what's next" in a plethora of industries, allowing us to design added value propositions for our clients, to convey a powerful message that is based in facts and not in negativism, and to drive a real wave of change.

Gonzalo Muñoz Founder and CEO, TriCiclos

















TriCiclos is an engineering circular economy BCorp focused on consumer good processes, services and products. They believe waste is nothing but an error of design, that can and must be solved.

SOLUTION

From the experience gained through the operation of the largest network of recycling stations in South America, TriCiclos offer a multitude of products and services both upstream and downstream of the waste generation stream. These products and services include recycling stations, logistics, educational programs, public policies, high-end consultancy, sustainability strategies, recyclability indexes and lifecycle assessments, new product and services development, design and technologic development.

IMPACT

Through TriCiclos' operations, 33,145 tonnes of recyclable material has been diverted from landfills, over 140,000 tonnes of CO₂ emissions have been saved, over 4 million people have been reached through recycling stations and education programs, and in excess of 15,000 businesses' packaging solutions have been analysed, with 60+ clients impacted through in-depth consultancy.

triciclos.net | 9 @TriCiclosB | in TriCiclos B



Geetanjali Woollens produces post-consumer mechanically recycled yarns, fabrics and throws from 100% post consumer textiles without the use of any harmful dyes, chemicals and very little water.

SOLUTION

By upcycling old discarded used clothing which is destined for landfill, Geetanjali Woollens strive to keep textiles away from landfill in an ethical and socially compliant manner. This is a proven, scaleable and very mature technology.

IMPACT

Its mechanical solution is a low impact answer to the fashion industry's environmental concerns. Since 1982, Geetanjali Woollens has been engaged solely in the recycling of used textiles, with inherently circular core functions and capabilities. Its feedstock is 100% comprised of recovered resources. For each kilo of fiber it produces, Geetanjali Woollens contributes to extending the life cycle of products that are often worn a limited number of times before being discarded.

geetanjaliwoollens.com 🔰 @geetanjaliwooll | 🛅 GEETANJALI WOOLLENS PRIVATE LIMITED

















DyeCoo is the world's first commercial supplier of water-free and processed chemical-free dyeing technology for. Its revolutionary CO₂ based dyeing process makes textile dyeing clean, sustainable, efficient and profitable. DyeCoo now has multiple customers running commercial production.

SOLUTION

DyeCoo completely remove the need for water and processing chemicals in the dyeing process, through the use of $\rm CO_2$. The $\rm CO_2$ is cleaned and 95% is recycled in the machine for re-use. Its $\rm CO_2$ dyeing machines are available for polyester fabric and yarn dyeing. The technology will soon be available for both nylon and additional stretch applications.

IMPACT

DyeCoo's vision is to lead the textile-industry towards a lean and clean future. DyeCoo believe its CO₂ based technology can replace water-based dyeing around the world. The impact for one DyeCoo dyeing machine is a saving of 32 million liters of water and 160,000 kgs of processing chemicals per year.

dyecoo.com | **Y** @DyeCoo | in DyeCoo Textile Systems B.V.



Ecoware is India's first and largest sustainable packaging company founded on the principle of regenerative design. Ecoware converts common agricultural waste that would otherwise be burnt into affordable disposables for food services and medical care. Ecoware is a biodegradable alternative to single-use plastic thereby contributing lasting societal and environmental impact.

SOLUTION

With increasing consumerism, fast growing economies such as India suffer from the most visible faces of pollution – poor air and plastic blight. Ecoware employs indigenously designed solutions to solve both these problems at scale. By using only the waste of crops, Ecoware incentivizes farmers not to burn their waste crops and smartly converts cellulosic plant fiber into strong packaging that is oil and waterproof, and heat and cold resistant.

IMPACT

Ecoware has completed a voluntary environmental and social audit that estimates US\$ 2.47 of impact created for every US\$ 1 employed. At its current scale, Ecoware saves 1,200 tonnes of plastic annually from entering India's landfills and, since inception, has offset 16,800 tonnes of CO₂ emissions through displacement of non-eco friendly alternatives. At a societal level, Ecoware contributes to improved economic resilience and reduced health risks from decreased usage of toxic plastics.

ecoware.in | 9 @ecowareindia



Through flexible, monthly subscriptions, Grover's customers gain access to a multitude of hi-tech products, including smartphones, laptops, cameras, virtual reality and gaming gear, with the option to use them as long as they please and simply send them back when they are done.

SOLUTION

Grover is the first FinTech subscription company to adopt circular economy principles. Grover's model breaks the link between ownership and use by purchasing products so people don't have to. This transforms tech consumption from a linear to a circular model. Since 2015, Grover has recirculated over 50,000 devices, keeping them in use longer and actively reducing the need for new device consumption, reducing the amount of e-waste.

IMPACT

Grover is the market leader in technology rentals and is bringing the freedom of renting to the huge consumer electronics market. Grover's circular model of refurbishing products and renting them to numerous users before selling or recycling them is boosting the circular economy to the next level by opening it to mainstream consumers.

getgrover.com | 9 @getgrover | in Grover



ZigZag is a returns solution for retailers. It provides a branded portal through which the customers can return new, used and end-of-life goods via a list of convenient returns options.

SOLUTION

ZigZag has built a network of 220 warehouses, 26 online marketplaces and 60 courier partners in 130 countries to help facilitate the exchange, return, resale, recycling and refurbishment of goods across the globe.

IMPACT

ZigZag is helping retailers to significantly reduce the costs and waste associated with returns by providing the tools and data, to increase the probability that returned goods are resold, donated, recycled or repurposed locally, rather than returned and sent to landfill.

zigzag.global | 💆 @ZigZagGlobal | in ZigZag Global

















CupClub™ is an innovative returnable packaging service for drinks that utilizes RFID technology to provide complete supply chain traceability. CupClub™ helps retailers reduce single-use plastic packaging through trackable products and an inbuilt loyalty scheme. The CupClub™ system is designed to collect, wash and redeploy packaging-as-a-service. CupClub™ can be used across cafés, canteens, restaurants, self-serve coffee/tea points and drinks vending.

SOLUTION

CupClub™ is first to market with a returnable packaging service that eliminates single-use cups, providing a zero waste alternative for brands, retailers and businesses to transition to the circular economy. CupClub™ combines RFID technology into every product packaging so that it can be tracked across the supply chain and optimized for reuse. The technology is designed to capture data and insights into consumer behavior and retail sales to better understand customer purchasing habits.

IMPACT

CupClub™ outperforms its peers by using only half the CO₂ to disposable cups, including PE lined paper, PLA compostable, Styrofoam and even ceramic cups. A single-use expanded polystyrene 12oz cup with lid has a 38% higher carbon footprint than the CupClub service. Plus, these items are most likely to go to landfill or energy from waste at end of life. Furthermore, based on a 1% recovery and recycling rate, a 12oz paper polyethylene lined coffee cup with lid has a 96% to 101% higher lifecycle impact than the CupClub service.

cupclub.com | 9 @cup club | in CupClub



Metabolic uses systems thinking to tackle global sustainability challenges and advance a circular economy. Through its consulting, think tank, and venture building arms, Metabolic provides strategic advice, develops open knowledge and tools, and builds new organizations that offer scalable solutions. Headquartered in Amsterdam, Metabolic has an international and interdisciplinary team that works with governments, businesses, and non-profits around the world.

SOLUTION

Metabolic's approach is based on what it calls the Seven Pillars of the Circular Economy. In addition to materials, Metabolic develops circular solutions for energy, biodiversity, water, societal value, health, and culture, ensuring that its approaches problems in a systemic manner. The framework also translates to quantitative tools, using metrics and indicators, to evaluate the circularity of products, projects, businesses and portfolios.

IMPACT

Metabolic has driven notable circular change within governments, non-profits and businesses across the globe with over 350 projects. One flagship project is circular living lab De Ceuvel, an Amsterdam-based workspace for closed-loop innovation and experimentation. It sees 35,000 international visitors each year, inspiring top organizational leaders and the general public to drive the circular transition.

metabolic.nl | 9 @MetabolicHQ | in Metabolic



Piñatex® is a sustainably produced textile that was developed for use as a sustainable alternative to both mass-produced leather and synthetic materials, offering a better choice for a better future. It is made from the leaves of the pineapple plant a by-product of the fruit industry. Adding value to this waste has created a new source of income for farming communities.

SOLUTION

Pinatex®'s production line is designed to reduce the generated waste and save raw materials and energy. All the production needs are based on circular economy principles and the assurance that each person involved in the creation of Piñatex is paid an equitable wage. The production of Pinatex® reduces the environmental impact generated by the textile industry, which mainly uses non-degradable materials and polluting chemicals throughout the supply chain.

IMPACT

The production of Piñatex® is based on Fair Trade principles. As such, one of the most important social benefits is the creation of job opportunities for farming communities; which then reflects onto and strengthens the local social networks and communities. Piñatex uses primarily natural materials that come from a waste, thus reducing the environmental impact caused by its production and valorising the waste generated in pineapple harvesting.

ananas-anam.com | 9 @PinatexOfficial | In Ananas Anam Ltd



E-Waste Exchange (EWX) is a digital tech platform enabling businesses and citizens to dispose of their e-waste online - right from the comfort of their home or office. EWX is published as a 'policy recommendation' in the 'Resource Efficiency Document for India', published by GIZ-CII-TERI- Adelphi for European Unions (EU)- Resource Efficiency India (REI) project, lead by NITI Aayog, **Government of India and Ministry of Environment, Forest and Climate Change, Government of India. In November 2018, EWX won the first** prize from Startup India, Department of Policy Promotion, Ministry of **Industry and Commerce, Government of India.**

SOLUTION

E-Waste Exchange is built with advanced tech at its core, strengthened four pillars of: Convenience, Transparency, Economic Benefit and Sustainable Development. EWX digital tech infrastructure is open for use by businesses as well as society, to directly transfer their e-waste to Government authorized, technically competent e-waste recyclers, solving the e-waste issues with respect the flow to informal recyclers, at the heart of the e-waste challenge.

IMPACT

Sanshodhan: An E-Waste Exchange is turning 'Waste Tech' into FinTech. It is attracting multinationals and smaller businesses, keen to showcase their ethical business and responsible production and consumption practices (aligning to SDGs 9 and 12). In addition, the data on the platform is useful for businesses, as well as Government, to inform decision making and enable sustainable development i.e. in convergence with SDGs 13 and 14.

e-wasteexchange.com | 💆 @EWaste_Exchange | 🛅 Sanshodan: An E-Waste Exchange Pvt Ltd

WHO WE ARE

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The Circulars, an initiative of the World Economic Forum and the Forum of Young Global Leaders, run in collaboration with Accenture Strategy, is the world's premier circular economy award program. In the 5 years of the program, The Circulars has offered recognition to individuals and organizations across the globe that are making notable contributions to the circular economy in the private sector, public sector and society. The annual awards were hosted at the World Economic Forum's Annual Meeting in Davos. Visit us at www.circulars.org

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