

# CIRCULAR CZECHIA

*A circular economy as an opportunity  
for successful innovations of Czech firms*

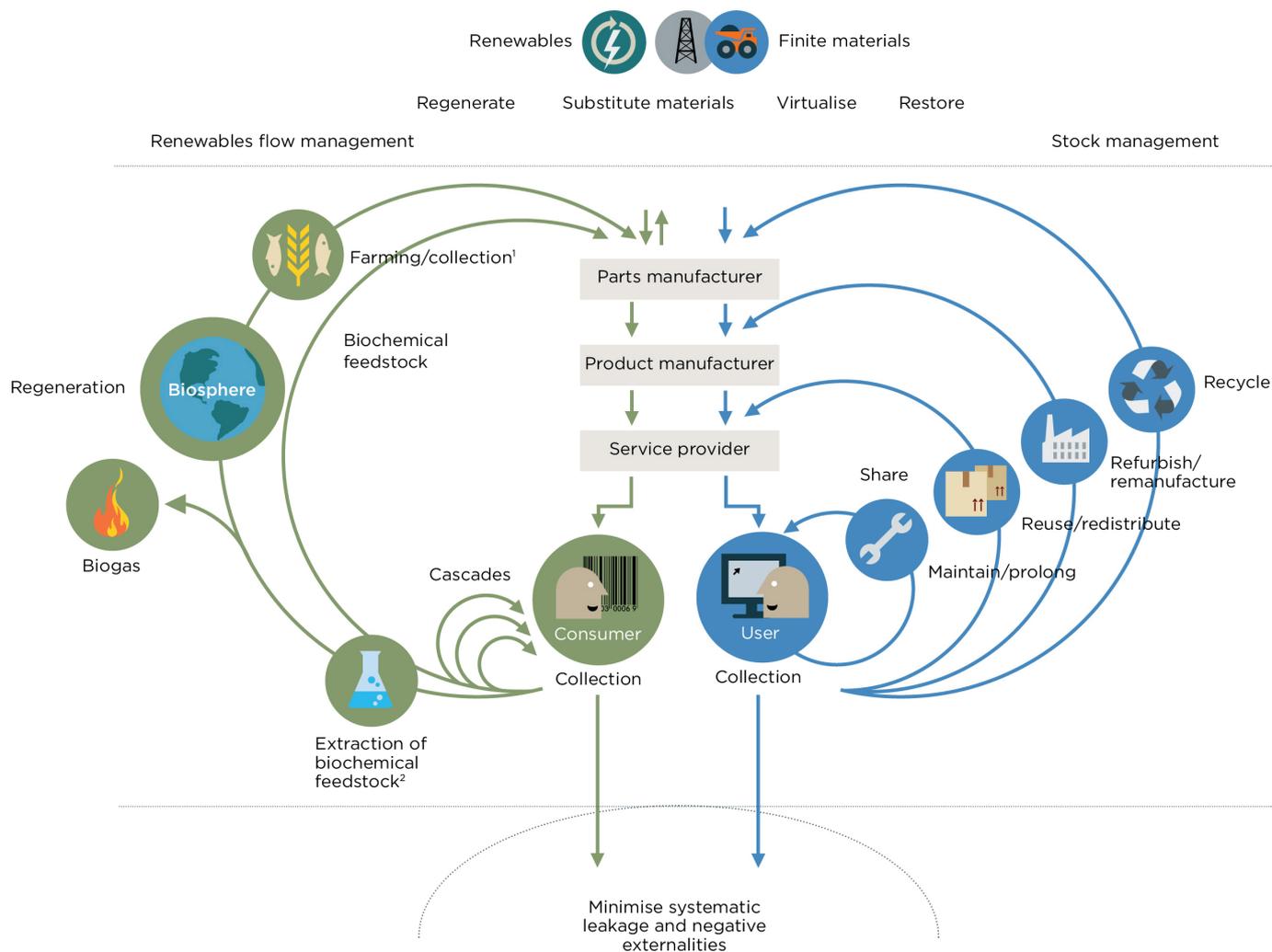
# WHAT IS THE CIRCULAR ECONOMY?

The circular economy is not merely a trendy catchphrase thrown about by the European Union and a few savvy firms. The circulation of resources is something that has functioned in nature since time immemorial, but we humans have forgotten it. We have suppressed the common sense that cautions us to be economical and provident, and instead created a linear economy that plunders, produces and discards at breakneck speed. Even if it may satisfy human whims, it stands on weak foundations. With disappearing resources we will struggle to maintain the current tempo of growth. This is one of the reasons why several firms and individuals are now orienting themselves toward the so-called “circular economy”.

*A circular economy is a system in which we take considerate approach to nature, but at the same time generate profit thanks to the reuse of valuable materials, which we keep in circulation for as long as possible.*



**Soňa Jonášová**  
director, INCIEN



Source: Ellen McArthur Foundation



# WHY FIRMS ARE TAKING AN INTEREST IN THE CIRCULAR ECONOMY

Ever more companies today are taking an interest in circular innovations. Many realise that, figuratively speaking, no producer can be successful on an unsuccessful planet, and are accepting their moral responsibility for the state of the earth. In addition, however, firms are also assessing the situation entirely pragmatically, and asking themselves: *“To what extent will global changes influence my production and target markets? Will I still have buyers for my goods and services? What effect will a carbon tax have on my production?”*

Firms planning ahead over a longer time frame see a large window of opportunity for a change of their business model. They are aware that a change is taking place in the behaviour of consumers, who no longer feel the need to own goods but rather to use them or hire them for a certain period of time. Due to the shrinkage of primary raw materials, companies are also noticing a growing need for material self-sufficiency, and as a result are beginning to use recycled products, to utilise waste materials for production and offer new goods and services which not only improve people’s lives, but also have a positive impact on the surrounding environment.

# WHY SOCIETY IS TAKING AN INTEREST IN THE CIRCULAR ECONOMY

At a time when the Czech Republic is hit by drought, the circular economy is taking on an entirely new dimension. Principles such as prevention of wastage, reuse and recycling, which we apply when working with materials, are now dramatically increasing in importance also with regard to water. We are gradually realising that natural resources are an immensely valuable asset, and that neither a drop of water nor a gram of raw materials should go to waste.

A considerate and responsible approach to our own consumption is therefore ever more topical, especially if we realise that our society is living on debt. It is estimated that Czechs exhaust the resources allocated to them every year by August. From that time onwards, we are drawing upon resources at the expense of future generations. The circular economy is therefore becoming essential not only in ecological, but also in economic respects. Living on debt indefinitely is simply not possible.

# WHY THIS PUBLICATION?

In the publication Circular Czechia 2 we are following on from the first ever printed material on the theme of the circular economy in the Czech Republic, which we published in July 2018. **The fact that we have decided to continue with the next issue after such a short time demonstrates how quickly innovation is developing in this field, and also attests to the magnitude of the reception generated by the previous publication.**

SUEZ is becoming a circular waste company, the NAFIGATE Corporation has introduced new products from recycled materials onto the market, and ERC-TECH together with SKANSKA are now co-operating on the utilisation of used construction material. KOMA Modular, with its modular constructions, is competing successfully on the market, while other companies from last year's list of examples of good practice such as JRK, IKEA, COPYMAT and PLASTIA are showing very good results and confirming the trend of the circular economy.

**The aim of the publication Circular Czechia 2 is to provide inspiration for firms, organisations as well as towns and municipalities, and to offer them a helping hand in introducing circular principles into practice.** For this reason we are pleased to report that the original authors – the Institute for the Circular Economy and the innovation agency Direct People – have been joined by the JIC (South Moravian Innovation Centre), which has been engaged in the field of innovations for 16 years. We are confident that we shall contribute to the use of principles of the circular economy in the Czech Republic and thereby enable local firms to become global leaders in the sphere of circular innovations.

**Together we can succeed, for our business, for our planet and for our future.**

**WHAT EXPERTS THINK**  
**ABOUT THE CIRCULAR**  
**ECONOMY**

Some might see the circular economy as a regulatory burden, artificially forced upon us from the EU. Others are glad that ecology is becoming the norm, while others still can see its potential for creating competitive advantages. The main question is as to which firms will be able to put this triangle together in such a way that a circular approach doesn't merely lead to increased costs, but also generates greater profit. I am confident that such firms are already present on the market, and that their number will increase, because today's consumers have a preference for products which are environmentally friendly, and they're prepared to pay for them.



**Petr Šídlo**  
Co-founder of Direct People



**Petr Konvalinka**  
Director, Technology Agency  
of the Czech Republic

It is the endeavour of the Technology Agency of the Czech Republic to support innovative ideas that increase our country's competitiveness and secure a better future for us all. We therefore consider it important to implement the principles of sustainability and the circular economy. According to experts, the circular economy is the business model of the future. However, in the Czech Republic up to now its expansion has been prevented especially by cheap landfilling and insufficient legislative support. For this reason, we view support for projects with a circular theme as our personal responsibility toward the generations that will follow us.

I see the circular economy as a great business opportunity and challenge simultaneously. Precisely for this reason, at the JIC (South Moravian Innovation Centre) we support entrepreneurs who through their products or services wish to contribute to a positive change in society and to finding a solution to global problems. It is our view that only people who believe in what they are doing can be successful in business, and at the same time can gain satisfaction from life.



**Petr Chládek**  
Director, JIC (South  
Moravian Innovation Centre)

The circular economy is a great opportunity and at the same time a challenge for industry and business in the Czech Republic. The condition for ensuring security in terms of raw materials is effective utilisation of resources, and as a result this is one of the priorities of the Ministry of Industry and Trade, which is responsible for the state's raw material policy. The strategic goals and tasks in this sphere are set by the Raw Material Policy of the Czech Republic in the area of mineral raw materials and their resources, and especially the updated Secondary Raw Materials Policy of the Czech Republic.



**Karel Havlíček**  
Vice Chairman of Government and  
Ministry of Industry and Trade

The aim is to continue within the trend of increasing the share of reused raw materials in the Czech economy as a proportion of the total consumption of raw materials. Increasing the share of secondary raw materials as a replacement for non-renewable resources is a fundamental tool for securing long-term sustainable production. Our vision is: SMART INDUSTRY – SUSTAINABLE INDUSTRY. As a result, the circular economy has its place in the forthcoming economic strategy for the Czech Republic.

EXAMPLES OF **SUCCESSFUL**  
**FIRMS** THAT HAVE  
INTRODUCED THE  
CIRCULAR ECONOMY  
INTO PRACTICE

# TIERRA VERDE

Tierra Verde is a Czech-Slovak company, which since 2008 has been offering ecological hygiene products and packaging-free and plastic-free household goods. It sells its own branded products in the DM drugstore chain, e-shops and wholefood stores, and also exports its goods abroad, primarily to Scandinavia.

## CHALLENGE

“When I saw how much waste was generated in production, it was clear to me that it was necessary to do something about it,” states company founder Nataša Foltánová. Accordingly, from the very beginning she made it company policy that nothing that entered its supply chain would later be needlessly discarded. As a result, the packaging in which the input raw materials are delivered is used to produce bags and covers for notebooks.

## RESULT

On first appearances it seems entirely simple, nonetheless it was necessary to resolve a range of technical problems, to devise a logistical system, to convince employees and overcome the fact that this manner of waste management demands a great deal more time and money. For example, paper packaging is twice as expensive as plastic, because plastic today is very cheap.

Despite this, according to Nataša Foltánová such an approach pays off. The company as a whole is growing in all the indicators, while packaging-free sale has increased by 200 percent. In its far-sighted approach to packaging, Tierra Verde has gained a substantial head start over other firms that are only just beginning to consider the idea of zero-waste.

“The idea that we should view waste as a resource has been part of our company philosophy from the outset. Even despite the fact that this approach is far more demanding, we want to show that world that it’s possible to build a functional model. It always depends on inner conviction and determination.”

## SOLUTION

However, in addition to waste generated in production it was also necessary to resolve the issue of the wrapping in which the products travel from the company to our households. Tierra Verde therefore began to package its products in paper, thereby reducing the quantity of plastic in its packaging. For example, products previously sold in five litre canisters are now sold in cardboard boxes, in which a plastic bag corresponding to the volume of goods is inserted. This saves 100 grams of plastic. In addition, two years ago the company began to supply its products to packaging-free retail outlets in order to prevent the generation of new waste.



**Nataša Foltánová**  
Founder of Tierra Verde

# ASIO GROUP

ASIO GROUP (ASIO) is an association of firms that develop and supply technology for cleaning waste water, water treatment and atmospheric cleansing. The group operates in 32 countries worldwide and employs more than 150 people.



## CHALLENGE

In 1993, when Karel Plotěný and Oldřich Pírek founded the ASIO company, they had a vision of building a firm for treating waste water that would be reliable and capable of establishing itself on an international level. As the company grew, they began to follow new trends abroad and progressively introduce them to the Czech Republic. *“We were restless and we constantly wanted to do something new, and so we were the first on our market to offer products for managing rainwater, infiltration, separation of waters, utilising energy from rainwater and membrane technologies,”* states Karel Plotěný.

However, always being three to four years ahead of the competition makes business quite a tough nut to crack. For example, today everybody knows that we have a problem with drought and insufficient groundwater. Despite this, in the field of water management the Czech Republic is very conservative, and some state bodies do everything they can to ensure that water isn't recycled. As a result, breaking onto a market with products which encroach upon the spheres of interest of various institutions has its pitfalls.

## SOLUTION

When ASIO first presented membrane cleaning, the majority of professionals in the field looked for reasons why it wouldn't work. After 15 years, this method of water treatment is used as standard. Evidently it was simpler to gain markets without a pioneering approach, i.e. a strategy of creating one's own market, but for ASIO this approach is its hallmark. *Over the last 10 years ASO firms have been oriented to water separation and recycling, and since 2014 they have supplemented their vision with the NEW programme, the aim of which is to conserve nutrients, energy and water.*

## RESULT

Surprisingly, the new, more sustainable direction has not had a large impact on the companies' business. Annual turnovers within the range of 245 million Czech crowns represent a slight increase, and the firm can therefore afford to continue experimenting. Nevertheless, in marketing terms the revolutionary approach of ASIO is a huge benefit. *When you are the first to do something, people remember you, and you don't need to spend so much on marketing. The fact that everyone compares themselves to you is promotion in itself.*



**Karel Plotěný**  
Co-founder of ASIO

*“Before I didn't know what to think about the word sustainability. Today I know that it means using as little new resources as possible. I also know that in practice sustainability has a number of verified patterned regularities. For example, the closer to the source I address a problem, the better it is for the environment and therefore also for us as people.”*

# MUNICIPAL BUSES, THAT RUN ON ENERGY FROM BIO-WASTE

A joint pilot project of the Institute for the Circular Economy (INCIEN), the Brno Public Transport Company (DPMB), Brněnské vodárny a kanalizace (Brno Water and Sewerage Authority) and the MemBrain company has demonstrated that where there's a will, there's a way. The result is that in Brno we now have a bus that has run 5000 kilometres on energy from bio-waste.



## CHALLENGE

Although bio-waste is a valuable raw material, in the Czech Republic we have not yet learned to utilise it. Every year, millions of tons of bio-waste end in landfills, incinerators or in sewerage, and its energy and material value comes to nothing. And there is no reason whatsoever why this need be the case. If bio-waste is processed by the method of anaerobic fermentation (in which bacteria break down the waste in a sealed vessel), energy is produced – biogas – as well as digestate, which can be returned to the soil as a natural fertiliser.

With regard to the fact that effective management of bio-waste is a complex problem which encroaches upon a number of different fields, INCIEN decided to take the initiative. It organised a pilot project with the aim of demonstrating that thanks to mutual co-operation between companies we can make good use of bio-waste.

## SOLUTION

The preparation of the project alone was not simple. It took two years before the companies came together, made an agreement, signed contracts and arranged all the necessary permits. However, the result exceeded expectations. Brněnské vodárny a kanalizace produced biogas from waste treatment sludge, MemBrain supplied the technology for its treatment to attain the quality of natural gas, in a form known as “biomethane” or renewable natural gas, and DPMB provided one bus that ran on biomethane instead of CNG. During November and December 2018 the bus operated in Brno, travelling 5000 kilometres without any technical problems.

## RESULT

It might appear that an experiment with a single bus could not have a very large impact. The opposite is true. As the project initiator Petr Novotný states: “The aim was not to save 2000 kilograms of CNG, but to raise awareness, to spark a discussion and gain political support, which we succeed in.” Also thanks to the project, the National Action Plan for Clean Mobility is now addressing the use of biomethane, politicians have found greater courage to negotiate operational subsidies, and the City of Prague has had a study commissioned on the potential of bio-waste.

*In the past, the Brno Public Transport Company replaced 160 diesel buses with buses run on CNG. The use of biomethane produced from bio-waste as fuel for these buses would be an apposite culmination of the ecological conversion of bus transport in Brno.*



**Miloš Havránek**  
Managing director, Brno Public  
Transport Company

SKANSKA is one of the largest construction companies in the world, providing services in the field of civil engineering, commercial and residential development.

## CHALLENGE

In the last few years the price of primary raw materials has increased markedly. Old quarries are gradually being exhausted, and there is no foreseeable prospect of opening new ones, among other factors because this is a difficult measure to push through in society. As a result, construction firms are beginning to consider a new solution – the reuse of existing resources.



## SOLUTION

For example, for the construction of a section of the D4 motorway (Skalka u Příbrami) SKANSKA made use of 490 000 tons of aggregate from former local uranium mines, and for the repair of the D1 and D2 motorways it used crushed cement concrete covers directly from repaired sections of the roadways for the new concrete layer. However, out of the total number of repaired roads, products from recycled materials form only a fractional percentage, which is due to the fact that it is difficult to win administrative support for the manufacture of products from secondary resources. Another frequent problem is insufficient information about the materials from which old constructions, or any buildings in general, are composed.

Knowledge of the life cycle of products is of key importance in order for the recycling of building demolition wastes to become mainstream. For this reason also, SKANSKA is conducting a thorough examination of the life cycle of its concrete, and wishes to achieve a situation in which secondary raw material has the same value as primary. Skanska is now developing concrete which will be produced from 100% recycled material.

## RESULT

A more environmentally friendly approach to resources is financially more advantageous, and is therefore easily accommodated into the company's value orientation. The position of the public administration is also gradually changing, with a positive response to the need for reuse of secondary resources. SKANSKA is supporting and negotiating the best possible solutions for the environment in the construction industry in the transition to a circular economy.



**Karel Fronk**

Head of department for sustainable development, SKANSKA

“In order for materials to be better utilised and not to lose their value but rather retain or increase it, it is necessary to know the precise composition of materials. Without knowledge of the life cycle of materials, the circular economy will be a mere platitude.”

# SONNENTOR

Sonnentor is a Czech-Austrian firm that sells bio-tea, bio-spices and bio-coffee. It was established in Austria in 1988, and since 1992 has had its headquarters in the Czech Republic. From the outset it has functioned on the principles of ecological farming, direct trade with local growers and a high proportion of manual labour.



## CHALLENGE

Every year the Sonnentor plant in Čejkovice sells 300 tons of dried herbs, which are used to produce tea, either loose or in teabags. A large quantity of material is consumed in the packaging of herbs – bags, boxes and wrapping – which is then removed in our homes and often ends in incinerators or landfills.

## SOLUTION

The company always seeks ecologically acceptable solutions, and for this reason in 2011 it took the decision to use compostable materials. Today teas are packed in bags made of banana fibres and corn starch, and boxes are placed in biodegradable wrapping made of 100% natural cellulose, which has the appearance of cellophane. The company also attempts to avoid generating waste by selling selected blends in packaging-free retail outlets and using multi-purpose packaging directly in the plant. The entire production process would naturally be simpler and cheaper if the firm used plastic, but Sonnentor prefers to seek long-term solutions.

This can be seen also in the utilisation of waste from the plant and work with renewable resources. Thanks to an ingenious idea of the company employees, herbal powder generated in the tea processing is used to produce pellets and provide heating for half of the plant. The stores are then heated by waste heat from the compressor room, and cooled with night air. It will probably come as no surprise to anyone that the two roofs are fitted with solar panels, and one of them is also embellished with vegetation and an apiary.

## RESULT

To the question of what impact these pioneering ideas have on the firm itself, director Josef Dvořáček answers: “Do you know what? I don’t even know. We haven’t calculated whether it’s cheaper or more expensive. We do it because we believe in it.” However, considering the fact that company turnover is increasing (314 million Czech crowns in 2018/2019), as well as the number of employees (150 employees in 2018), there can be little doubt that the impact is positive. This is also attested to by the crowds of visitors who flood to the superb complex of the former cowshed, into which life was breathed by the company founder Tomáš Mitáček.

“When I was out walking in the forest and saw a plastic bag that milk was sold in from the times of my childhood, I asked myself how I’d feel if 500 years from now I found plastic packaging from Sonnentor in such a natural setting. As a result we decided to radically change our approach to packaging.”



**Josef Dvořáček**  
Company director, Sonnentor

# OPRAVÁRNA

*Opravárna is a company which operates a web portal affiliating repair and service businesses. Via the campaign "Opravme Česko" (Let's Fix Czechia) it also attempts to motivate Czech firms to make products that can be repaired.*

## SOLUTION

*"In 2014, when I wrote about the Dutch initiative Repair Café, which once a week provides a forum for contact between repair businesses and customers, I was enthused by the idea. I was very surprised to learn that Repair Café operated virtually throughout the whole world except for the Czech Republic, and so I decided to establish something similar here," states Opravárna company founder Jan Charvát.*

Today Opravárna co-operates with more than one thousand individuals and companies, which include the largest service firms on the market, small repair shops and amateur handymen. With the aid of the website, customers can easily reach repair businesses in their area. Customers can simply pay a fee of 49 Czech crowns, and as a rule within a few hours they will receive several offers by e-mail. On the basis of the user evaluation and price, they can then choose a suitable repair service and have their product repaired. Over the course of a month Opravárna processes 200 orders, but within two years plans to increase this to 3000 orders per month. This should also be helped by investments from Martin Rozhoň.

## CHALLENGE

These days washing machines, dishwashers, refrigerators, as well as computers, mobile phones and cameras have a far shorter service life than previously. Ironically, they mostly last only until their warranty runs out. As soon as a malfunction occurs, consumers have two options – have the product repaired or replace it with a new model. Due to the fact that in most shops they will be told that the appliance isn't worth repairing, they usually discard it and buy a new one. The result is a large quantity of electro-waste, pressure on valuable resources, unnecessary financial expenditure and frustration.

## RESULT

Although the Czech Republic is a nation of domestic handymen, according to Jan Charvát, in the last 30 years we have been increasingly under the pressure of the consumer mantra that dictates: "Buy and discard." Convincing customers, firms and investors that it is better to have a product repaired than to buy a new one therefore requires considerable effort. At the beginning Opravárna was seen as a firm that could appeal to only a small group of people, but today the situation is changing. Big brands and retailers are trying to market themselves as sustainable, and are showing a greater interest in co-operation.



**Jan Charvát**  
Founder of Opravárna

“The world isn't a single-use product. The sooner firms realise this and start to think in circular terms, the better for the environment and for the firms themselves, because it'll provide them with a competitive advantage on the market.”

# IKEA

IKEA is a multinational group which designs and sells furniture, kitchen appliances and household accessories. It was founded by the Swedish entrepreneur Ingvar Kamprad in 1943. At present it is the largest furniture vendor in the world, operating in more than 50 countries, and it co-operates with hundreds of suppliers worldwide.

## CHALLENGE

Sustainability is a value that has long been a part of the IKEA company vision. However, the increasing depletion of resources is one of the key factors in its further transformation. The company does not want to contribute further to climate change, which is linked with environmental pollution. For this furniture giant, conversion to circular business is therefore one of its greatest ambitions and challenges simultaneously. This has impacts on the company business in all aspects.

In its Sustainability Strategy, IKEA has set itself targets and commitments up to the year 2030: to offer 100% circular products; to use only renewable or recyclable materials; to offer them to customers, look after them and return them into circulation; to be a market leader and join forces with others.

In recent years there has been a dramatic change in customer habits. Customers now prefer to buy goods than travel to large stores. They are more interested in the origin of the furniture and do not wish to create waste. They live within a small space and are not able to own a large amount of items. At the same time, however, they want their households to reflect their identity.

## RESULT

A unique linkage has been established between IKEA and its partners, who wish to produce and sell furniture ecologically. Suppliers offer interesting tips, test materials and invent new technologies based on circularity. It is already possible to obtain fully recyclable spray bottles produced from recycled material, or a woven lamp made of unused parts of bamboo. People can also buy a storage system that will last them throughout their lives thanks to simple switching of its components.

*It might appear that our goals are ambitious. And they are. We view transformation from a linear business model to a circular one as the only way to be a responsible firm towards the planet and to people, who we can influence through our business, and the only way to fulfil the IKEA company vision in the long term. We value close co-operation above all with our suppliers, who enable us to achieve these goals.*

## SOLUTION

On the Czech and Slovak market alone, IKEA co-operates with dozens of suppliers. Some of these are part of a platform on which they jointly create new, innovative approaches in production and logistics, in a direction towards circularity. However, a condition is to do all of this with maximum consideration for the environment as well as for customers. As a result, working groups are presenting ideas for how to manufacture from renewable or recyclable resources. They share ideas and provide mutual support on the market. They wish to extend the life span of products and materials so that they can be reused, renovated, refurbished or recycled. It is also important for them to produce a design that customers won't soon tire of. The owners themselves simply modify furniture or give it a "second life" by other means. Not one item will be for single use.



**Eva Malá Beluská**

CEO of Prague service organisation for purchasing and Sustainability Compliance, manager for Central Europe

# BRENS EUROPE

## CHALLENGE

People from BRENS in Slovakia have become familiar with the recycled product STERED, which makes use of synthetic textiles from old cars. The physical and mechanical properties of the recycled material have enabled the firm to begin developing new products and to include them in its portfolio. For a long time the company has been aware that it is not possible to constantly draw upon non-renewable resources. Instead of these, it has started to use waste for its production.

*The Brens Europe company from Plzeň develops and manufactures products for the construction of rail tracks, railway crossings and soundproofing measures. The firm supplies its products mainly to Europe, but thanks to its subsidiary company it also offers products and technologies on the American market.*

## SOLUTION

BRENS works on the design and construction of rail tracks, tram and railway lines with recycled materials from concrete or tyres. It returns into circulation and reuses waste raw materials: scrap iron, crushed concrete and pulverised rubber. Experts from BRENS have also utilised the excellent technical and utility properties of material from the automobile industry. The result is that one of the company's most recent products is a rail sound absorber for tram lines produced from recycled shreds from car seats, carpets, filters and pulverised rubber from used tyres.



## RESULT

The firm functions on circular principles mainly in the use of waste raw materials, which serve as an input for production. An example is a water retaining, soundproofing and vegetation surface made from recycled material. The company first installed it more than two years ago in Ostrava, and then last year in the Slovak city of Košice, resulting in a reduction of tram noise by as much as nine decibels. The surface of the track is made from synthetic and rubber recycled materials, i.e. from waste from the automobile industry, and also has excellent properties for retaining rainwater. The water does not drain directly into the sewerage system and instead evaporates where it falls. This cools the urban environment and provides plants by means of irrigation. All BRENS products are recyclable and can be reused. They have also proven themselves as material for vegetation panels for green roofs.



**Jan Eisenreich**  
Statutory director, BRENS EUROPE

*I regard our activities in connection with the circular economy as something meaningful and beneficial for the present, and with a view to the future as the only possible option. I'm only sorry that more people don't share that opinion. Especially those who are running the state.*

# BIOPEKÁRNA ZEMANKA

Biopekárna Zemanka (Zemanka Bio-Bakery) produces sweet bio-biscuits and savoury bio-crackers. The Czech company was established in 2006 in the village of Oříkov u Sedlčan. All its products are prepared according to its own recipe. The company bakes products which are subject to bio quality certification. It uses only ingredients from controlled ecological farming. At the same time, in its operation it uses ecological cleaning materials, recycled cartons and uses energy only from renewable resources.

## CHALLENGE

The spent grain and the idea for processing it originated in the Plzeňský Prazdroj brewery, which addressed Jan Zeman, the owner of Biopekárna Zemanka. The brewery supplies the remainder, by-products of the malt used in beer production, for example to farmers as animal feed, or uses it for green energy. In comparison with regular types of flour, spent grain has a higher protein and fibre content, and a lower content of carbohydrates. "These properties are exploited to perfection by a number of start-ups in the USA, which use it to produce special flour or muesli bars. We decided to find a partner which would join us in an experiment to produce something similar here," states project initiator Tereza Kamal from Plzeňský Prazdroj.

Jan Zeman first of all considered the idea unrealistic. "I couldn't imagine how it would be possible to process the spent grain, produce something from it and in the process abide by all the mainly hygiene regulations. At the same time, however, I was enthused by the idea of adding a further innovative element to our bio-products. It was therefore a challenge to try to bake something from waste ingredients," says Jan Zeman, recalling the moment when he eventually agreed to the proposal.

## RESULT

Since its foundation, Biopekárna Zemanka has had an ecologically configured operation and an environmentally friendly approach. The company philosophy supports the circular economy. Attempting to bake products from spent grain was a risk that paid off.

*We now have tasty crackers produced from brewer's grain in our assortment. They came out of an experiment, which to be frank I was initially sceptical about myself. I hope that by setting this example we can pave the way for others who might like to attempt similar projects in the foodstuffs industry using other residual ingredients.*

## SOLUTION

The head of production at Zemanka found a suitable procedure for processing spent grain, and created an original recipe. The entire process took approximately two months, and the end result was the bakery's tasty savoury crackers. Initially in the pilot phase these were presented only to a small group of people. In summer 2019 the new products passed through all the demanding audits and foodstuffs-hygiene inspections. The demands were stringent above all for collection, transit and processing. However, the firm ultimately succeeded in managing all the potential risks, and the first biscuits produced from spent grain were released for distribution.



**Jan Zeman**  
Owner, Biopekárna Zemanka



**CIRCULUS FUTURUS:**

HOPE FOR THE

CIRCULAR ECONOMY

*Global climate changes mean a historic challenge for humanity. Will we cope with the threats posed by decreasing supplies of water, temperature fluctuations or drought? It is precisely the circular economy that represents one of the key principles that can help us substantially in alleviating the impacts of our activity on planet Earth. For this reason also, more and more ideas are emerging for how to introduce the principles of the circular economy in various branches of industry. And it would be a shame not to say at least a few words about them.*

## CIRCULAR CONSTRUCTIONS

Every hall and warehouse occupying a piece of the Czech landscape is at the same time another dose of fuel on the fire of climate change. One of the most important properties of the sheet metal from which these constructions are mostly produced is its incredible capacity to accumulate heat. Instead of retaining water within the landscape, we let it fall upon an incandescent surface from where it immediately evaporates. This is something that occurred for example to Libor Musil, a proud native of Slavkov and owner of the family firm **LIKO-s**, who came up with the idea of building living, green halls, functional structures that do not impair the capacity of the Czech landscape to retain water. “*We developed a system that’s able to cool not only the interior, but can also rapidly reduce the temperature in the surrounding area of the buildings,*” explains the company owner, outlining the advantages of living halls. Among other matters, his company boasts the title of Family Firm of the Year.

It is precisely construction and architecture that may have a key impact on our future, since they have a fundamental influence on our landscape and dwelling. An example worth following in this area is the path pursued by the young architects from **Next Institute**. “*Construction is a sector which is highly demanding in terms of energy, and which creates a large quantity of waste and emissions. Our goal is to present technologies and prototypes which will return this branch of industry back to its natural form,*” states Vojtěch Lekeš. Together with other of his colleagues and in co-operation with the architecture studio **KOGAA**, in Lekeš has developed for example the “City Cell Prototype”, which is an urban cell, a wooden shed with greenery which absorbs rainwater and thereby cools the surrounding environment.

## WASH, CLEAN, SEPARATE

One of the pillars of the circular economy is the idea of making waste into a resource and as such returning it back to the life cycle. It is precisely this that is the focus of the relatively small Ostrava firm **Plastic Union**. As the name indicates, the company deals in plastics. Thanks to advanced technologies it is able to recycle those types of plastics that have hitherto been unusable in the Czech Republic. “*In waste recycling we see purpose, potential and opportunity,*” explains company representative Robert Antoš.

A similar approach is shared by Michal Křiška Dunajský, founder of the **ConWe** company. “*Our endeavour is to create products from waste, whether this concerns obtaining nutrients from waste water or applying recyclable construction material in the process of waste water filtration or the construction of a water treatment plant,*” Michal describes the essence of the company activity. The firm was founded as the first ever spin-off of the Faculty of Civil Engineering at the University of Technology in Brno. These young academics devote themselves to the design, implementation and running of water treatment plants both for municipalities and for family houses.

# CIRCULATION AS A FUNDAMENTAL PREREQUISITE OF LIFE

It is clear that the circular economy is a principle to which we must return in our consumer habits. And firms must set an example. However, there are still few companies that have the circular economy as part of their own DNA. For this reason, it is necessary to draw attention to them.

One of these is the producer of cloth nappies **Bamboolik**. If you ask the company founder Zuzana Hloušková what the circular economy means to her, she'll reply laconically: *"A natural configuration."* And the company activity makes clear what she has in mind. Bamboolik sends consignments packaged in a box from oat flakes, offers lending of nappies and supports the sale of its products second hand. Zuzana also presents a further case: *"When we launched our ecological washing powder onto the market, we arranged in advance with our supplier that we would reuse the wrapping from the powder, since according to the law this has to be plastic."*

Limiting the consumption of packaging or its reuse has now become part of the mainstream. Large retail chains are limiting their consumption of polythene bags and are motivating customers to bring their own bags, while packaging-free shops are also gaining a foothold. A further dimension of this trend is provided by **RepeteBox**, a start-up which has invented a reusable transit package for online purchases. According to company founder Richard Bystřický, the best waste is waste that is never produced. *"Our packaging doesn't belong in the bin, but should go back into circulation, and if it's broken we know how to repair it. RepeteBox is therefore circular, body and soul, and we are confident that it can also have economic advantages."*

All of us can live on the planet in such a way that we are not an ecological burden, but instead bring a benefit. It is precisely such people that the circular economy needs most of all – just as the human organism needs its heart. Fortunately, more and more of these people are emerging.

# A FEW WORDS IN CONCLUSION

We live in a time of **large societal and economic changes**, the circular economy and sustainable business are becoming the norm, and at the same time an opportunity in negotiations, both in the conference rooms of multinational corporations and within the framework of co-working forums for new start-ups. Such issues are being discussed across the business sector, and the companies we wrote about in our first publication are showing us that we are surrounded by many inspiring examples of meaningful enterprise. Enterprise that responds to the most pressing problems of today brings entrepreneurs both success and a feeling of satisfaction simultaneously. Climate change is an integral part of our lives. Whatever its causes, rather than seeking answers to hypothetical questions it is necessary to find concrete solutions, thus specific products, services and technologies. And these are exactly what you will find in Circular Czechia 2.

We all live on the same planet. Despite the distance that separates us from the antipodes, it is fascinating that due to globalisation problems on the other side of the world form an everyday part of our own challenges. The depleting resources upon which the European Union is dependent are a stimulus for the development of recycling technologies. Global warming and climate change provide an impulse for us to seek technologies and examples of good practice in the field of adaptation measures. Enormous pollution is one of the reasons for accelerating the developing new technologies for the treatment of water, soil and air. Our society has advanced by huge leaps in terms of digitisation and connectedness, but at the same time is increasingly losing contact with its own foundations – nature and the resources that are essential for satisfying our material and spiritual needs. And so the mega-trends on a global scale can be not only a threat, but if the challenge is suitably met, then above all an opportunity. And within the framework of the new partnership to which we have committed ourselves in drafting the second volume of our publications, we have decided to accept this challenge.

We realise that it is important not only to open up these themes, but above all to fulfil the goals they present us with. For us it is an invaluable education to work on specific projects and try out the most effective paths. We are then better able to respond to the aforementioned global issues. For example, the Cyrkl platform, established almost a year ago, addresses the pressing lack of resources and excessive wastage that face us. Unfortunately this is something that is typical of the Czech Republic at present. The level of reuse of materials is at an absurdly low 7.6%, and the remainder we are squandering to such a degree that it will soon be felt not only by the construction sector, which within seven years will begin to run short of fundamental resources of sand and stone, but also in agriculture. Already this sector is suffering from a huge deficiency of biomass returned to the soil. This instead ends in landfills, which, with a number of 530 fires per year, are becoming a time bomb. And all this time we have technological eco-innovations available which are capable of making maximum use of biological or construction wastes, using them as a substitute for primary resources or mineral fertilisers, or additionally for the production of green energy sources. It is only necessary to link producers of materials together with processors.

Thanks to these partnerships, wastage in the intermediary stages can be substantially reduced. It is essential to build functional relationships which respond to today's trends. These include digitisation and at the same time establishing co-operation between various subjects who are helping to bring good ideas to life quickly and with the highest possible success rate. And it is here that the idea of Cyrkl also meets up with the mission of the Institute for the Circular Economy and the JIC (South Moravian Innovation Centre). INCIEN has not only opened up the theme of the circular economy in the Czech Republic, but is actively helping new ideas to interconnect with important linking elements. The JIC has set out on a similar path. By providing support to entrepreneurs, it attempts to contribute to a positive change in society and a solution to global challenges. JIC believes that only people who believe in what they are doing can be successful in business and at the same time gain satisfaction in life.

In conclusion, if we are to highlight one important mission statement, then it would be the following: **we co-operate on local projects and follow global trends. We are not afraid to test out our own innovative ideas and do things differently than has hitherto been the custom. The present situation demands a disruptive approach, which will help business function in accordance with what we are all now experiencing for ourselves in the form of sudden changes in the weather or during walks through ghostly fields in which there is no longer birdsong to be heard.** At the same time, this represents an immense business opportunity. Within the framework of co-operation between various scientific disciplines, individual research centres, municipalities and above all firms, the most interesting business plans emerge, bringing the greatest benefit, a positive change in society and a solution to global challenges.



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# CONTACTS

## CO-OPERATION



# CO-OPERATION

*We believe that Czech firms have incredible potential, and it is our dream to help them develop this together. If you too are considering introducing the principles of the circular economy into your firm and do not know how to begin, let us know. We'll be happy to help you. Because the most effective way to succeed is to simply begin.*

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## **CIRCULAR CZECHIA 2**

**A circular economy as an opportunity for successful innovations of Czech firms**

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