

Cans recycling

(by Martina Kyselá)

The Czech Republic especially the place where I am living now, city called Olomouc people are really respectful to nature, to the environment and to the planet as well. It's hard to think about things that are not working here at all, because in my opinion we are really good in the sense of taking care of the environment. We already have a lot of projects that are helping the environment of the specific place, city and the whole Czech Republic as well.

Instead of cars people in the cities are using a bicycle path and shared bicycles or electric scooters. So many phone apps are offering them for a special price or some specific groups of people can use them just for a little payment. You can park them almost everywhere or on specific places. It's pretty same for bicycle owners, because there is a lot of places where you can park them, close to the shopping malls, parks, school, universities, offices and so on.

The Czech Republic is one of the most popular country in the sense of recycling and waste sorting. In The 2022 we celebrated a 25 years anniversary of the first waste sorting. Thanks to the EKO-KOM system, 99% of the population of the Czech Republic already has access to sorting containers, and each person sorts an average of almost 67 kg of paper, glass, plastics, beverage cartons and metals into them per year.

Recycling in the Czech Republic

The idea of establishing a system that would take back and sort packaging waste was born as early as 1994. The impetus for the creation of the system was the effort of the beverage industry to build a system that would enable every company producing packaged goods to sell what the consumer demands, but at the same time ensure that increasing consumption will not increase the mountain of waste at the landfill. The system itself, called EKO-KOM, was founded in 1997 by 10 shareholders as a non-profit joint stock company. He started the

implementation of pilot projects and tested various options and options for collecting packaging waste with the mayors of several municipalities outside the Czech Republic.

In 1999, 20 companies producing packaged goods voluntarily decided to join the EKO-KOM system and participate in the creation of a nationwide solution for the collection of sorted packaging waste. EKO-KOM then operated on the basis of a Voluntary Agreement between the packaging industry and the Ministry of the Environment. In 2002, EKO-KOM received its first authorization and two years later the second. In 2020, this authorization was extended to December 31, 2024, and thanks to this, he can provide take-back and recycling of packaging waste for his clients.

Through the non-profit EKO-KOM system, companies producing packaged goods fulfill their legal obligation to ensure that their packaging is sorted and processed into usable secondary raw materials. Municipalities receive a financial reward from the system for the sorted amount of waste, which they report regularly through quarterly reports.

Present

Today, the EKO-KOM system serves 21,223 companies and 6,160 municipalities in the Czech Republic. During its existence so far, the company has managed to increase the share of packaging waste, which is handed over for use and recycling within the system, to 76% and to convince almost $\frac{3}{4}$ of Czechs that sorting waste makes sense. In 1999, when statistics began to be systematically monitored, only 28% of the population of the Czech Republic sorted. We also have a high-quality network of colorful wheelie bins and smaller containers for sorted waste located right next to the houses. There are currently over 558,000 of them. On average, there are around 100 residents per collection point, who do not have to walk far to get there. On average, we only have to walk 90 meters from our homes to the nearest colored containers - that's roughly 130 steps.

The average resident of the Czech Republic produces 562 kg of municipal waste per year. From the point of view of the requirements of the waste legislation, it is desirable to reduce the production of mixed municipal waste from municipalities below 150 kg per citizen per year.

From 2024, bio-waste, which still makes up 30 to 40% of the share in containers for residual waste, must be consistently sorted. The minimum amount of waste we must sort is set by law.

How much waste do I have to sort?

From 2025, municipalities must sort at least 60%, from 2030 at least 65% and from 2035 at least 70% of mixed municipal waste. Mixed municipal waste must not contain bio-waste, starting in 2024. From 2025, municipalities are obliged to ensure the sorting of textiles.

What I think we miss in the Czech Republic about recycling?

But there is still something that I miss the most and that's a chance to recycle cans the same way as paper, plastic bottles and glass bottles can be. Or much better way to get some money from cans that we used. We can see that there are a lot of places with special bins for almost every type of trash. But the one that I miss the most is a special bin for cans. Czech Republic is the country that drinks the most beer in Europe up to some statistics in the world as well. The average Czech person has 138 liters of beer per year. The way how beer is selling is either in glass bottles, plastic bottles or in cans. Most of the people are buying the beer in the cans because it's not that heavy as a glass bottles.

Project cash for trash

In some countries around the Europe there is a program called "cash to trash" which is helping to the eco system. This program tries to motivate a people to collect and keep a waste. The idea is to collect plastic bottles or drinks cans that have a specific logo on the cover. Those bottles or cans you can bring back to the store where you bought them and put them into the deposit machine that will give you a coupon with a money that you will get from. Then you can simply go to the store or supermarket and when you will pay you can just use the coupon.

In my opinion this project is good in the sense that people are motivated to sort waste and put most of the waste separately and not only to the one regular rubbish bin. Most of the countries already use this deposit system for a glass bottles. The deposit system in the Czech

Republic is working very well. You can just simply bring a glass bottles back to the stor. There are just few types of of beer, water or syrup bottle that you can bring back to the supermarket. On every bottle that you can bring back to the store you probably have a sign on the cover where is written something like “vrátný obal” that means that if you will those bottles back to the store you will get money from. This deposit system is alreday working for a many years.

The simple idea about the project or program “Cash to trash” is to make the same system of the deposit for the cans as well. Durring another next years to also add a most of the plastic bottles as well. Not to simply put them to the specific rubbish bun with the yellow color but to also give a try to make a program for plastic bottles deposit. But at least recycling is very important here and a lot of people follow it. There are specific rubbish buns for a paper, plastic, glass and the regular one almost everywhere. Especially in public places you have a chance to sort waste, places as train station, schools, shopping malls, offices and others are.

Project “Cash to trash” can better motivate a people to put more intention into a sort waste. The amount of regular waste is super high and even the system of sort waste is working very well there are still things that are not recycled. For example cans. The project will help to reduce a waste, motivate people to buy drinks more in a cans and also to dont throw the cans somewhere on the street.

“Cash to trash” can be also a motivation for some group of people. Kids can take it as a prevention to collect some types of rubish that later on they can sort waste and get money from. Also other people will be more motivated to sort waste or to care about a nature more. This system of deposit is already working in countries as UK and Sweden is. You can bring there cans and bottles with a Swedish deposit marking.

Deposit system in Sweden

All cans and bottles with a Swedish deposit marking are included in the Swedish deposit system. These packages have passed our inspection before they were connected to the system and are thus guaranteed to be recycled into new cans and bottles. The fact that a package can be recycled means that you pay a deposit for it at the time of purchase, which you get back when you return the package.

A package that is deposited can be recycled into food-approved aluminium or plastic. This means that the material can be used for new cans and bottles again and again and again. In addition, the closed material recycling means that we save enormous amounts of carbon dioxide. According to a life cycle analysis that we carried out in 2018, we saved as much as 150 000 tonnes of carbon dioxide during the 2017 recycling year.

Swedish deposit levels

The deposit on cans and small PET bottles are SEK 1 and SEK 2 on big PET bottles. For you to get back the deposit on your cans and bottles it demands that:

- - it is included in the Swedish deposit system. Look for the deposit marking.
- - that the barcode is undamaged and readable (in the machines, all approved codes are registered and the register are updated every week).
- - that the package remains intact and not flattened (that way it does not meet the correct dimensions).

How does it work with these?

Aluminium cans without a Swedish deposit marking - "imports"

Every reverse vending machine - with a few exceptions - now also accepts foreign aluminium cans so that they can be recycled into new cans. It is important that the barcode is undamaged. However, you do not get paid a deposit for them, as you did not pay a deposit when they were purchased.

Why is it important to recycle cans?

Both steel and aluminium can be recycled time and time again without losing any quality and more and more people are recycling their cans which helps to conserve non-renewable fossil fuels, reduce the consumption of energy and the emission of gasses like carbon dioxide into the atmosphere.

Aluminium

Aluminium is a resource that forms about 8% of the earth's crust. It is mined and extracted from bauxite, which contains the compound alumina, in an energy-intensive electrolytic process. Four tonnes of bauxite contains two tonnes of alumina, which yields one tonne of valuable aluminium. The metal is used in buildings, transport and other industrial applications, as well as packaging. Aluminium is the most cost-effective material to recycle, using around only 5% of the energy and emissions needed to make it from the raw material bauxite.

In addition, all the scraps left over from the aluminium production process can be melted down and used again and again. For this reason, recycling is part of the normal lifecycle for large industrial products - around 75% of all the aluminium ever made is still in circulation. Aluminum takes more energy to mine and produce than any other metal so it is worth paying for these cans. Recycling aluminum not only prevents more resources from being extracted from the Earth but it also saves energy as well. This is the classic example of cash for trash that's been around for years.

When collecting aluminum cans for profit, crushing them saves a lot of space for storing even more cans. A common way to store these cans is in a commercial trash can, or a plastic bag. Then you just have to bring them to your local recycling or scrap metal center to get paid. Depending on your local recycling facility, if you are tossing individual cans into your outdoor recycling bins it's not advised to crush them as they can get caught in the sorting machine and slow things down.

How are cans recycled?

Aluminium cans

Aluminium cans are shredded, removing any coloured coating. They are then melted in a huge furnace and the molten metal is poured into ingot casts to set. Each ingot can be made into around 1.5 million cans. Aluminium foil is a different alloy and is usually recycled separately with other aluminium scraps to make cast items such as engine components.

Steel cans

Steel cans are put into the furnace where molten iron is added. Oxygen is then blasted into the furnace which heats up to around 1700°C. The liquid metal is poured into a mould to form big slabs which are then rolled into coils. These coils are used to make all sorts of steel products. In some countries in the world there is a deposit, where you are putting a cans, plastic bottles and glass bottles as well. Then you are getting a coupon that you can use in the supermarket or show where the deposit was used.

What we hope will change

There was a chance to see what is working in the Czech Republic and what is not or not that good in the moment. The project topic with “Cash to trash” program is the way how to reduce rubbish and help more to the planet. Motivate people to help eco system and dont “use” the planet more then is necessary. There are some project that want to support an idea of giving a new life to the cans. The proces of bringing a new can back to the customer can take only 2 months. This 2 months proces will take a steps as taking a can from customers is, bringing to the factory, making a recycled aluminum and then a new can again. This new recycled can will already have a logo and brand name on the cover and will hold a new drink inside. There are some plans and project for “Cash to trash” and factories that will make a recycled aluminum from the cans and I really hope that it will work as soon as is possible.

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