

# **THE IMPORTANCE OF UNIVERSITIES FOR SOCIETY AND ECONOMY THE EXPERIENCE OF RESEARCHERS FROM THE VISEGRÁD GROUP**

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## CHAPTER 5

### A Case Study of Czechia and Poland Towards a Sustainable Future: The Crucial Role of Reuse Centres in Circular Economy Implementation

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**Abstract:** This comparative case study explores the concept and operational dynamics of reuse centres in Czechia and Poland, facilities dedicated to extending the life cycle of products through repair, refurbishment, and redistribution. These centres are integral to sustainable waste management and the circular economy, aiming to reduce waste volumes, conserve resources, and decrease reliance on raw material consumption. The study investigates how reuse centres contribute to these goals by examining their operational frameworks, impacts, and integration within local and national waste management strategies. Both countries, driven by distinct policy environments and community engagement levels, have developed unique approaches to implementing these practices.

**Keywords:** circular economy (CE), reuse centres, sustainable practices, Czechia, Poland



### 5.1. Introduction

As the urgency to address environmental sustainability intensifies globally, the circular economy (CE) emerged as a transformative approach to traditional waste management systems. This study focused on reuse centres located in Czechia and Poland, which serve as vital instruments in advancing CE principles. They are

dedicated to extending the life cycle of products through repair, refurbishment, and redistribution, thus promoting resource conservation and waste minimisation.

Employing a mixed-methods approach that blends qualitative interviews with quantitative data analysis, this comparative case study examined the operational frameworks, societal impact, and the multifaceted challenges encountered by reuse centres in these two countries. Their current state reveals a significant evolution from their inception, driven by changing policy landscapes and growing public awareness of sustainability issues. In both nations, these centres not only contributed to substantial waste reduction but also enhanced community education and spurred economic development through job creation.

However, despite these advancements, the implementation of reuse centres faces several challenges. These include variability in consumer awareness, differing levels of government support, and logistical constraints, all of which influence the effectiveness and scalability of reuse initiatives. By analysing the distinct strategies of Czechia and Poland, shaped by their unique policy environments and community engagement levels, this research provides valuable insights into the adaptable models of CE practices that can be customised to regional necessities.

This study underlines the critical role of reuse centres in the CE, suggesting that they are not merely waste reduction facilities but crucial elements of a sustainable future. As more countries consider CE models, the experiences of Czechia and Poland offer practical guidance for integrating reuse centres into broader national waste management strategies, thereby enhancing environmental sustainability and fostering economic resilience.



## **5.2. Literature Review**

In the context of sustainable development, the repair and reuse of materials and products become key elements of strategies to reduce waste and promote ecological consumption. These practices not only limit the amount of waste going to landfills, but also reduce the demand for new raw materials, thereby contributing to the protection of natural resources and the reduction of greenhouse gas emissions associated with the production of new goods. Faced with growing environmental challenges, reuse and repair gain new significance as ways to achieve the goals of European environmental policy, including regulations aimed at achieving a circular economy (European Union, 2015, pp. 2-4).

The circular economy (CE) is a combination of reduction, reuse, and recycling aimed at systematically reducing the negative impact on the environment while simultaneously attempting not to decrease the quality of life of consumers (Kirchherr et al., 2017, p. 229). This concept is the opposite of the model of mass and intensive

consumption based on the principle of 'take – produce – consume – dispose', which constantly introduces new sources of raw materials for production, leading to their continuous depletion from the production resources (Elisha, 2020, p. 497). A circular economy requires that products are designed in a way that allows for their continuous use while maintaining constant value (Yuan et al., 2006, p. 6).

Reuse, defined as the process in which products or their parts which are no longer needed by one user but are still in good condition, such as computers or furniture, are passed on to other individuals who can use them, highlights the value of extending the life of products. Thus, repair and reuse serve as an alternative to consumerism, promoting a more conscious and responsible approach to resources.

However, applying this approach requires transformation in the waste economy sector, so that activities related to repair and reuse become an integral part of it. This requires not only regulatory changes but also the development of infrastructure enabling the collection, repair, and redistribution of used products, as well as promoting public awareness and acceptance of such practices. Achieving these goals is crucial for the realisation of sustainable development principles and building an economy that does not negatively impact the environment (Ellen MacArthur Foundation, 2015, pp. 6-12).

In this context, the development of repair and reuse centres, supporting community and business initiatives in this area, and the implementation of public policies encouraging such actions, become essential to transform the reuse sector into a key element of the waste management system. Only through an integrated approach, combining regulatory, educational, and economic actions, can broad adoption of repair and reuse practices be achieved, which is essential for achieving sustainable development goals and the implementation of EU environmental policies.



### 5.3. Methodology

In the comparative analysis of reuse centres in Czechia and Poland, a mixed-methods approach was employed to capture both the quantitative impacts and qualitative insights into their functioning and outcomes within the circular economy framework. The methodology integrated three primary components.

1. Quantitative data collection: utilising both government and non-government databases, statistical data related to waste management, resource savings, and economic impacts of reuse centres were collated. These data points provided a foundation for evaluating the effectiveness of reuse centres in achieving environmental sustainability goals.
2. Qualitative assessments: case studies were conducted to gather in-depth perspectives from stakeholders, including centre managers, local government

officials, and community members. These case studies explored the operational challenges, success stories, and community impacts of reuse centres. Additionally, observational visits to selected facilities offered firsthand insight into daily operations and interactions between them and their users.

3. Comparative analysis: the study employed a comparative framework to analyse the differences and similarities in the implementation and outcomes of reuse strategies in Czechia and Poland. This involved assessing the policy environments, stakeholder engagement, and community responses in each country.

The research aimed to provide a comprehensive understanding of how reuse centres contribute to waste reduction, resource conservation, and social and economic benefits within their communities. This approach highlighted the potential scalability and adaptability of reuse practices in different regional contexts within the broader EUs circular economy objectives.

## 5.4. Research Results: The Case Study

### 5.4.1. Reuse Centres in Poland

As part of the sustainable development strategy in Poland, a pilot project on Circular Economy (CE) was initiated, targeting selected municipalities including rural and semi-urban areas such as Łukowica (Małopolskie province), Tuczno (Zachodniopomorskie province), Wieluń (Łódzkie province), and Sztum (Pomorskie province). The aim of this initiative was the comprehensive implementation of CE principles, designed to minimise raw material losses and maximise their reuse (Kostikov & Szramowski, 2023, p. 162).

This project encompassed a broad spectrum of activities focused on various aspects of the economy and social life, aiming not only at reducing the amount of waste generated but also at more efficient management of existing resources. These elements include the development and optimisation of selective waste collection systems; the goal was not only more effective waste segregation but also the prevention of waste generation through the promotion of practices that reduce municipal waste production.

Key initiatives within the project include:

- 1) local waste treatment facilities: modernisation and expansion of waste infrastructure to enhance recycling and reuse capabilities;
- 2) development of infrastructure to reduce waste production: implementation of technological and organizational solutions aimed at decreasing waste generation during production and consumption phases;

- 3) promotion of environmentally friendly transport: encouraging the use of public transport and developing infrastructure for electric vehicles and bicycles to reduce CO<sub>2</sub> emissions;
- 4) energy efficiency: implementing solutions that save energy in residential buildings, public utilities, and enterprises;
- 5) application of CE principles in households: education and promotion of practices that enable the closing of resource loops in everyday life;
- 6) sustainable agriculture and food processing: introducing resource-efficient production and processing methods that minimise environmental impact and promote the recycling of organic waste;
- 7) water saving: implementing technologies and practices that reduce water consumption in households, public sector, and businesses;
- 8) resource-efficient local business economy: promoting practices among entrepreneurs that reduce the consumption of primary resources and limit waste production;
- 9) rational land management: efforts to reverse land degradation processes and explore new, sustainable ways to utilise land.

This initiative, through a comprehensive approach to waste management and sustainable resource management, aims to achieve key objectives related to environmental protection and sustainable development. By engaging local communities, governmental authorities, and businesses, the project strives to create an economic model that can serve as an example not only in Poland but also on a broader European level. By promoting the principles of the CE, the project supports not only local ecosystems but also contributes to global efforts to protect the environment and combat climate change.

A critical aspect of the project's implementation is the engagement and education of the residents of participating municipalities, whose daily choices and practices can significantly contribute to achieving the set goals. The introduction of selective waste collection systems, the promotion of energy efficiency, and water-saving measures require active participation and a change in habits.

This initiative also demonstrated the importance of integrating actions across various dimensions – from infrastructure to technology, to education and social engagement. Only a comprehensive and multidimensional approach can yield lasting and visible results in the long run.

The pilot project 'Circular Economy in Poland' represents an important step towards implementing sustainable development principles and building a closed-loop economy. By introducing innovative solutions and promoting responsible consumption, it aims to create a model that can serve as a benchmark for other initiatives both nationally and internationally.

In Poland, one can observe the emergence of reuse points aimed at extending the life cycle of items through their reintroduction to use. For example, in Zabrze there is a Reuse Point located within the Municipal Waste Selective Collection Point, where residents can hand over items suitable for further use. The range of accepted items is broad, including furniture, toys, sports equipment, children's accessories, kitchen utensils, carpets, panels, tiles, and other household furnishings in good technical condition. This initiative not only helps to reduce the amount of waste sent to landfills but also supports the closed-loop economy idea, promoting reuse and recycling as key elements of sustainable development (*W Zabrze działa...*, 2022). These points are often located at Municipal Waste Selective Collection Points (PSZOK) and are frequently managed in cooperation with non-governmental organizations. A crucial part of their operation is ensuring that the items are functional and safe for use, which requires appropriate testing and possible repairs.



#### 5.4.2. Reuse Centres as New Opportunities

Reuse centres, also known as centres for reusing items, are organizations or facilities dedicated to increasing the reusability and extending the lifespan of products and materials. They play a crucial role in sustainable material management and the fight against wastage and excessive waste production, as well as fulfil several functions: environmental, social, and economic.

In contrast to reuse centres, reuse points are designated spots within waste collection plots, usually a large container, where items that can still be useful are deposited instead of ending up in landfills. These items can be taken for a nominal fee or free of charge, thus given a new life (Reuse Federace, n.d.).

Regarding the further utilisation of products, one can also encounter the concept of a furniture bank, which functions as a social service for people in financial distress. This service operates in cooperation with the city or region. Through the social department, an individual or family can request specific items. This service is utilised in setting up starter apartments, social housing, and other necessary situations, such as the Ukraine refugee crisis, which required outfitting numerous accommodation facilities in just one month (Reuse Federace, n.d.).

The last two terms directly related to reuse issues are swap and upcycling. Swap is an English term for exchanging items. It is often a community event where people exchange clothes, books, toys, and sometimes even plant swaps are organized. The principle is the same: what one person does not need, they bring to the event, and another person takes it for free. Swaps are usually one-time and very popular events that allow items to be donated and acquired (Reuse Federace, n.d.). Upcycling refers to the process of adding value to unwanted items by creatively repurposing

and redesigning them. Even an unwanted and unneeded item does not have to be condemned to disposal (Reuse Federace, n.d.).

### ***Environmental Function of Reuse Centres***

The main goal and mission of establishing reuse centres are to coordinate and control waste reduction and extend the lifespan of products. Reuse centres or points are places where items are not thrown away but are reintroduced into the usage cycle, and their use offers several advantages:

- preserving the value of materials and energy contained in products and maintaining their original function,
- reducing the amount of waste destined for recycling, energy recovery, or land-filling,
- increasing public awareness and creating a relationship to the values preserved in used items, thereby protecting nature through a more sustainable lifestyle,
- reducing overproduction.

### ***Social Function of Reuse Centres***

Another function of reuse centres is social. Within this function, local employment opportunities can be created for individuals with lower education levels; support for requalification training aimed at socially excluded persons, long-term unemployed individuals, and those in disadvantaged social situations. Other benefits include:

- ensuring quality products that are affordable for households with low incomes,
- supporting reintegration and improving the quality of life for disadvantaged groups,
- developing self-sufficient and resilient local communities.

Reusing can have a significant social impact, especially when operated with a clear social objective, such as a social enterprise. Activities associated with reuse have a high potential for creating jobs since they require manual labour such as collection, sorting, cleaning, and repairs and do not require high education. This potential is much greater than in other waste management sectors, such as recycling, landfilling, or incineration. Some estimates show that for every 10,000 tons of waste products and materials, one job can be created if they are incinerated; six jobs if landfilled; 36 jobs if recycled; and up to 296 jobs if they are renewed and reused (RREUSE, 2015).

Social enterprises have a long tradition of providing inclusive upskilling and requalification in the circular economy. They support the manual circular skills essential for the circular economy, social cohesion, and job creation. In addition to ecological skills, social enterprises active in the circular economy ensure access to technologies and support basic and advanced digital skills, including those that promote ecological transition. Lastly, they support the development of cognitive

and interpersonal skills, such as self-motivation and teamwork (RREUSE, 2015). Often, these are construction experts, repair specialists, waste management trainers, or reuse experts who pass on their knowledge to help socially excluded people not only to acquire repaired items at better prices but also to integrate them into the workforce in areas with high added value for companies.

### ***Economic Function of Reuse Centres***

The main economic benefit, especially for local governments tasked with reducing waste, is the reduction in waste disposal costs. Although a reuse centre that employs workers also incurs costs, it is necessary to calculate its overall contribution and strive for its economic benefit to exceed its expenses. To achieve this, it is necessary to create a network of cooperating partners who share costs or sell waste to those who can further process it. The economic impact depends on the type of waste. Specific examples will follow in the next section.

Reuse centres can take various legal forms. Often, however, they are social enterprises. In Czech social entrepreneurship, a new concept has emerged: environmental social enterprises, which besides social issues, also address ecological issues. They are often associated with biodiversity or excessive waste. For example, the North Bohemian social enterprises Jizerská Lavender Farm and the Koukol Soap Factory produce natural cosmetics from own-grown herbs or sustainably managed meadows. The Soap Factory Koukol has become a member of the community of companies and non-profits, called 'We Are a Decent Company.'



**Fig. 5.1.** Federation's installation in the Westfield Chodov shopping centre

Source: (Reuse Federace, n.d.).

The České Budějovice-based reuse and furniture workshop, Kabinet CB processes tons of furniture and other items that would otherwise end up in landfills into beautiful designer pieces, also equipping social apartments. The founders of Kabinet CB were also at the founding of the Czech Federation of Furniture Banks and Reuse Centres, which is one of the main promoters of the concept of reuse centres and points in Czechia and has many already established facilities across the country. One of the latest events organized by the Federation was the installation of renovated chairs at the Westfield Chodov shopping centre in Prague (Fig. 5.1). The exhibition lasted until January 3, 2024, and was part of the events with which the Federation highlights that old things do not have to be really 'old' (Reuse Federace, n.d.).

However, for a reuse centre to be successful and fulfil all three functions mentioned, it is necessary that it is surrounded companies, people, and create a network of supplier-customer relations because even though a reuse centre is a simple concept, its sustainability is challenging.

### ***Collaboration as Part of the Reuse Centre Concept***

This can be described as a transparent supply chain. Sometimes it is enough to talk about the journey of the product or even its story, where every item has its own narrative. Therefore, the sphere of the circular economy values fair trade, where the path of the product from the grower to the consumer is clear. Not all goods need to be transported back and forth across the globe; many products can be regional. Social entrepreneurship also benefits from the support of the local economy, which is even one of the required principles in granting titles: work for local people, consumption of local raw materials, and local sales of products and services. Such enterprises are key to local collaboration: not only between social and other companies but also with institutions, all of which contributes to creating dignified work in regions and prevents the outflow of people from rural areas to cities.

The Interreg Europe programme features a Policy Learning Platform, focused on EU legislation. This is a web project that includes a range of case studies and experiences from local governments with practical solutions for various projects. Its purpose is to inspire EU community policymakers by presenting real-life cases. Among other things, this has resulted in a Handbook on Reuse and Repairs in the Circular Economy, which offers advice to those interested in establishing a reuse centre, one of which is to 'create a local reuse culture' (*Reuse and Repair...*, 2022). The authors highlight the importance of linking efforts within the region, creating a list of partner organizations, and organizing activities to further support education in the region. Yet in this case, it is not just about education; for a reuse centre to operate truly effectively, even items that no one picks up must find their use, which is what the idea behind circular economy.

In Czechia, the Federation of Furniture Banks and Reuse Centres based in České Budějovice provides collaboration. Established under the Active Citizen Fund, which

is financed by the EEA and Norway Grants, it is an association of furniture banks and reuse centres operating in Czechia, of socially and environmentally beneficial organizations that help preventing the creation of municipal waste. They strive to connect already existing locations, initiate the creation of new ones, and care for the development and support of the topic among the public and local administration, so that reuse becomes a clearly understood concept and a popular alternative for disposing of items. Through changing consumer behaviour, they aim to ensure that usable items do not end up in landfills but are returned to circulation through organizations that ensure their collection, repair, and redistribution. The main goal of the federation is to create a strong membership base that will form an active network of sustainable and cooperating reuse operations. It is also the only institution in Czechia that is a member of the international association RREUSE based in Brussels, which has been operating since 2001. The key activities of the Federation are:

- define possible ways of operating reuse,
- inspire and consolidate existing examples of good practice,
- present and communicate these models to state administration and local governments,
- ensure support and development for reuse centres (<https://www.reusefederace.cz/>).

Active reuse centres can join as members, but partnership with the federation is also possible. More information can be found at <https://www.reusefederace.cz/kontakt>. The federation already operates or has made contact in regions marked on the map below, which shows that the Karlovy Vary, Hradec Králové, Zlín regions, and the Vysočina region are not yet part of the network (Fig. 5.2).

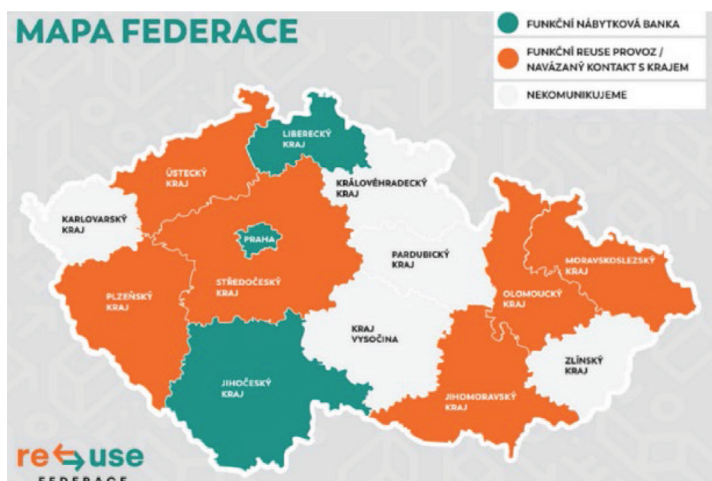


Fig. 5.2. Map of Czech regions according to the activities of the federation

Source: <https://www.mapotic.com/re-use-mapa-cz>

Thus, there is still room for coverage improvement. In the following sections, the situation in Czechia and abroad is analysed in more detail.

### 5.4.3. Overview of Reuse Centres and Points in Czechia

Most reuse centres were established after 2017, but the first was created in 2016 in Brno. One of the most beautifully designed is the colourful establishment in Ostrava, whose interior was designed by Radek Leskovjan, and which even competed in the architectural competition 'Building of the Year' (Fig. 5.3).



Fig. 5.3. Interior of the Ostrava Reuse Centre

Source: <https://reuse.ozoostrava.cz/>

Reuse centres and points in Czechia are being established relatively quickly, although there are areas where their presence is lower or uncharted. Their distribution can be seen in Fig. 5.4.

The federation manages the interactive map shown in Fig. 5.4. So far, it has registered 16 reuse centres and 44 reuse points (mainly collection yards), two electro reuse points, and three furniture banks. Prague leads with a total of 27 registered locations, followed by Pilsen with three, and Brno also with only three registered locations. However, their complete mapping is practically impossible due to the different legal forms they can take, as will be presented in the examples. Therefore, the analysis typically utilises the map from the Federation of Furniture Banks and Reuse Centres for Czechia and the list from the RREUSE network.

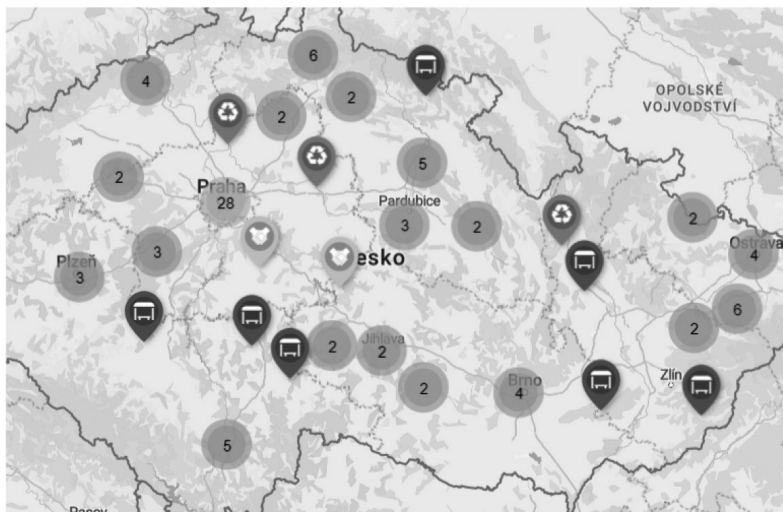


Fig. 5.4. Map of reuse centres/points

Source: <https://www.mapotic.com/re-use-mapa-cz?zoom=3&lng=15.034962909503292&lat=49.901711217260214> (retrieved December 21, 2023).

Part of this study includes examples of how selected reuse centres and points operate in Czechia.

### ***Selected Reuse Centres or Points in Czechia***

One example of a reuse centre/point in Prague, called 'Pod Šancemi', is located at the back of a waste collection yard in the Prague 9 district (Fig. 5.5). It consists of a small booth and a large container, and is staffed by an employee of Prague Services, who accepts and distributes contributions. Donated items are photographed and uploaded to the app 'Nevyhazujto' [Don't Throw It Away]. Items must be reserved in the app before pickup, and one cannot simply visit the location and choose freely. Selected items are reserved for one week. Using the app is advisable before visiting reuse points in person, as items of interest may be unavailable or already reserved.

An interesting example is the non-profit organization, Sue Ryder. Founded by its English namesake who lives in Czechia, its main idea is to help senior citizens. Thus, since 1998, it has managed a retirement home. However, as early as 1996, its first charity shop was established in Prague. This example is presented due to the idea of financing the home from multiple sources. Since 2006, the foundation ceased to receive grants from the UK and had to find its own income. Besides regular fundraising and state subsidies, the foundation also utilises reuse in its eight charity shops across Prague and one restaurant. Donations to the shops can include clothing, fashion



Fig. 5.5. Example of items from the Reuse Centre 'Pod Šancemi'

Source: <https://www.nevyhazujto.cz/user/62784> (retrieved November 22, 2023).

accessories, shoes, sports equipment, toys, gift items, art, books, or ceramics, glass, porcelain, as well as household items, drivable cars, functional electrical appliances, and furniture.

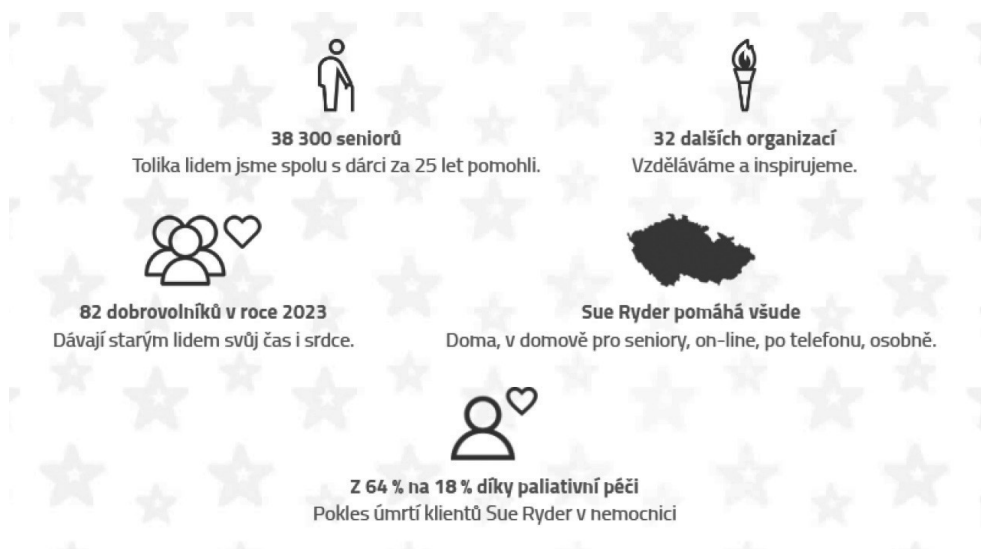


Fig. 5.6. Outputs of the Sue Ryder Foundation

Source: <https://darekprosueryder.cz/> (retrieved December 22, 2023).

The Reuse Centre Ostrava is another project that cannot be overlooked (Fig. 5.7). It serves as an example of a functional business model based on reuse and often draws attention not only within Czechia. It is a joint project of the city of Ostrava and the company OZO Ostrava. It offers donated furniture and functional items but

does not accept electrical appliances. The items are repaired (only minor repairs, not complete repairs, redesign, or upcycling) and resold. The interior and overall design of the premises offer a different view of the value of things.



Fig. 5.7. Reading Nook in the Reuse Centre

Source: (Reuse Centrum, n.d.).

The originality is clear, yet the place has a layout typical of retail chains – aisles, and neatly arranged items that shoppers can imagine directly at their home.



Fig. 5.8. Sales area

Source: (Reuse Centrum, n.d.).

In the store, furniture is generally arranged to create colour-coordinated ensembles, allowing customers to choose according to their own preferences.

The centre also organizes various events, such as a Christmas market and Christmas swap, and even has its own discount events, very much like an actual shopping centre, including marketing and advertising activities, and treats items, used as standard products (Fig. 5.9).



Fig. 5.9. Christmas event advertised on Facebook

Source: <https://www.facebook.com/reusecentrumostrava> (retrieved December 22, 2023).

A pressing issue for reuse centres is often electronic equipment. Some manage it well, others do not. However, there are other organizations that can assist municipalities with electronic waste.

### ***New Categorization of Electronic Waste***

The category of electronic waste, or e-waste, includes waste that has batteries or is connected to an electric current, and is one of the fastest-growing categories of waste in the EU. Therefore, its reuse also represents a problem with repair and safety, hence many places do not accept it. Despite the increase in the relative rate of electronic waste collection in Czechia, the requirement of the EC to achieve a minimum return rate of e-waste of at least 65% has not been met, and in reality, it was at 57.5% for 2021 (Waste Management Department MZP ČR, 2023). As of January 1, 2019, the following division of electronic waste into individual groups is in place.

Group 1: heat exchange equipment: refrigerators, freezers, air conditioners, dehumidifiers, heat pumps.

Group 2: imaging technologies: monitors and devices containing screens larger than 100 cm<sup>2</sup> – TVs, monitors, and laptops.

Group 3: light sources: fluorescent lamps, discharge lamps, LED lamps.

Group 4: large appliances with an external dimension larger than 50 cm: washing machines, dryers, dishwashers, ovens, cookers, cooking plates, light fixtures, electronic instruments, music equipment, large printers, and copiers.

Group 5: small appliances with an external dimension smaller than 50 cm: vacuum cleaners, microwaves, ventilation systems, irons, kettles, hair dryers, shavers, scales, watches, radios, video cameras, cameras, toys, sports equipment, drills, saws.

Group 6: small information technology and telecommunications equipment with an external dimension smaller than 50 cm: mobile phones, navigation systems, calculators, personal computers, printers, telephones (Potěšil, 2019).

Currently, the reverse collection of electronic waste is regulated by the new Act on Products with Expired Life No. 542/2020 Sb. which is based on the principle of the extended producer responsibility. Legally, the reverse collection and utilisation of waste electrical equipment must be ensured by individual producers or importers of electrical equipment, although in reality these services are performed for the producer by specialist organizations called collective systems (Tomášková, 2021).

One of the most commonly mentioned options is the door-to-door variant. This means bringing the waste container as close as possible to households, thereby activating residents to dispose of their waste. This solution is generally suitable for all types of larger waste and is quite commonly used.

Another possibility is cooperation with the collective system of waste collection, which is certified but also offers a whole range of other programmes and services to motivate citizens to recycle. Their list as of 1.8.2023 can be found on the website of the Ministry of Environment (Ministerstvo životního prostředí, 2023). Each provider is different and offers different programs. It is worth exploring individual websites and project links, which can provide a wealth of inspiration. The most interesting projects are listed below.

### ***Selected Projects for Electronic Waste Removal***

**Elektrowin Projects.** Elektrowin a.s., authorised by MPZ č. MZP/2023/720/61, tries to find unusual ways to approach citizens and has a programme called 'Recycle with Firefighters,' which volunteer firefighter units can join, providing an opportunity for smaller municipalities and their residents to dispose of e-waste while also partially financing the operation of the firefighters. Cooperation with volunteer firefighters can be motivational for both older residents – who may struggle with transporting appliances – and for children, who often see firefighters as their heroes. The events they organize are also historically major festivals for smaller communities in Czechia.

Using various information channels, they motivate residents to donate functional appliances to less fortunate people, families, or organisations that help them. One of the companies involved in the backward collection of functional electrical appliances,

which also provides revisions, is Elektrowin a.s., a collective system designated for the backward collection of end-of-life electrical appliances in Czechia and operates the web project [jsemzpet.cz](http://jsemzpet.cz). Through the website, it is possible to donate an electrical appliance, which the company will come to pick up. Prospective donors fill out a questionnaire on the website (Fig. 5.10) and after evaluating the criteria, will be contacted.

### KRÁTKÝ DOTAZNÍK

#### O jaký typ spotřebiče se jedná:

- ☐ Chladnička, mraznička nebo jejich kombinace
- ☐ Pračka
- ☐ Myčka
- ☐ Sušička
- ☐ Sporák

- ☐ Trouba
- ☐ Varná deska
- ☐ Mikrovlnná trouba
- ☐ Malý domácí spotřebič:  prosím uveďte jaký

**DÁLE**

Fig. 5.10. Donor questionnaire

Source: <http://www.jsemzpet.cz/> (retrieved December 18, 2023).

The advantage of the project is the inspection of the appliance by a control technician, who guarantees the safety of the appliance, and this removes the obligation from the municipality, and donors feel that they are helping the Fund for Endangered Children, asylum homes, or other organizations that help people in need. Elektrowin also offers the opportunity to apply for funding for informational campaigns about e-waste or a motivational program in the form of a reward.

### Možnosti svozů elektrozařízení zdarma



Fig. 5.11. Promotional banner of REMA in the 'Be Lazy' project

Source: (REMA Systém, 2023).

**REMA Projects.** Additionally, it is possible to participate in the project of the company REMA Systém a.s. called 'Be Lazy' which collects e-waste for free (Fig. 5.11).

As waste collection operates in the system of reverse collection of products, the municipality does not need to maintain records of the waste (REMA Systém, 2023). The project is suitable for individual citizens, as well as for municipalities, companies, and schools. Therefore, it can serve as information for citizens who need to dispose of their e-waste and simultaneously prevent the creation of illegal landfills.

The main goal of this section, however, is not a detailed description of the activities and case studies of individual reuse centres, but rather an international comparison. The next section provides an overview of how the concept of reuse centres is perceived in Europe.

#### 5.4.4. Overview of Organizations Operating within the International RREUSE Network

Just like in Czechia itself, it is not easy to find all, or at least ‘the selection of the best,’ reuse centres abroad. Therefore, the authors chose the important European organization RREUSE which is an international network of social enterprises operating in the circular economy, particularly in the areas of reuse, repair, and recycling, with its headquarters in Brussels (RREUSE, n.d.). The organization is a member of various other organizations and expert groups, including the Expert Group of the European Commission for Social Economy and Social Enterprises and the Consultation Forum of the European Commission for Eco-design and Energy Labelling, thus having its share in decisions made by members of the European Commission regarding the sector of the circular economy. Within its network, it addresses 1,100 social enterprises within a broader network of partners in these areas of reuse: furniture, electronics, textiles, books and recordings, small useful items, toys, but also electronics, batteries, hazardous waste, and others. Additionally, DIY-type activities, which includes repairs, as well as activities in the field of construction and demolition and, of course, further use of building materials from demolitions (RREUSE, 2022) and not only within the EU but also beyond its borders. The organization, like the Czech Federation, manages an interactive map covering its reach, see the figure below. The map of the network shows that the Central and Eastern Europe (CEE) region still has significant reserves in the area of reuse. In contrast, Scotland, Ireland, Austria, and France are covered by a relatively large network of institutions (Fig. 5.12).

It has already been mentioned that the broader base has up to 1,100 members. However, the study focused on the main members of the network, their activities, and reach, which they state on their websites.

There are 33 member organizations, which altogether reach another 3,937 organizations that associate or address these partner organizations of RREUSE. In some cases, these are member organizations, and supporters. In the case of the Armenian ISSD, this involves organizations that have joined a nationwide project for the assembly of recycling containers. Many countries with less developed

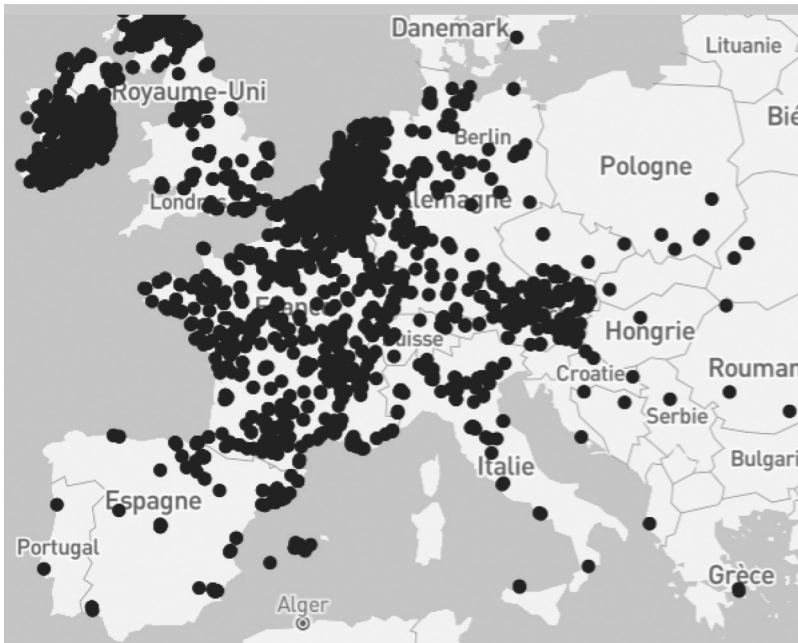


Fig. 5.12. Map of RREUSE's partner institutions network

Source: (RREUSE, 2024).

environmental activities, such as Armenia, have a large number of cooperating entities, because state organizations state, even buyers of products which are already established organizations, predominantly from Western Europe, do not.

CEE is less advanced and less organized in the field of reuse. Its member countries have less organized structures, and the group of partner organizations is based on efforts to educate, spread reuse activities, etc. However, particularly in England, Scotland, Northern Ireland, Ireland, and also in France, the network is often very well organized and includes partners from the entire supply and demand chain, so their effectiveness regarding changes in the circular economy is much higher. Another point is, the development of their own research centres, such as the Rediscovery Centre in Dublin, Ireland. The survey conducted by the authors proves that the policy of reuse centres goes hand in hand with the social inclusion of socially, medically, or otherwise excluded individuals, and allows them to participate in working life. The reuse policy is also linked to lower consumerism and overall moderation in lifestyle, including, for example, pace of work, performance, and profitability requirements of the company. It is not the rule that it is always just about non-profit organizations or charity. Among businesses, other legal norms also occur. It is also worth noting that many of the studied countries, such as Spain and Ireland, have legislation better prepared for

similar types of organizations. For example, there is a certain overlapping between a non-profit organization with zero profit and a for-profit company, i.e. a small profit is allowed, but with the condition of returning most of the turnover to the company's activities. An interesting example is also the Croatian cooperative Humana Nova, which has a separate workshop focused on upcycling advertising banners, billboards, etc. The authors have compiled a table with an overview of all partner organizations of RREUSE. Yet again, due to a lack of space, a reduced version will be placed in the appendix of the text. The full list is provided on a separate spreadsheet in an Excel attached.



#### 5.4.5. Challenges in Czechia

##### ***Consumer Awareness and Participation***

One of the primary hurdles facing reuse centres in Czechia is the level of consumer awareness and participation. Despite increasing environmental consciousness globally, many consumers remain unfamiliar with the concept of reuse centres and the benefits they offer in terms of environmental sustainability and cost savings. This lack of awareness can be attributed to insufficient marketing, public education, and engagement initiatives that adequately communicate their value proposition.

Solutions and strategies:

- 1) public awareness campaigns: implementing comprehensive marketing and public education campaigns to highlight the environmental and economic benefits of reuse centres;
- 2) partnerships with educational institutions: collaborating with schools and universities to integrate circular economy principles into the curriculum;
- 3) incentive programmes: introducing incentive programmes to encourage more consumers to donate to and purchase from reuse centres.

##### ***Logistical and Operational Challenges***

Reuse centres in Czechia also face logistical and operational challenges, including the collection, sorting, and refurbishment of items. Efficiently managing these processes requires significant resources, expertise, and infrastructure, which can be daunting for newly established or smaller centres.

Solutions and strategies:

- 1) government support and funding: securing government grants and subsidies to assist with the operational costs associated with running reuse centres;
- 2) collaboration between centres: fostering collaboration among reuse centres to share best practices, resources, and technologies;

- 3) investment in technology: leveraging technology for inventory management, online sales platforms, and logistical coordination to enhance operational efficiency.

### ***Opportunities for Growth and Improvement***

**Expanding the Network of Reuse Centres.** An extensive network of reuse centres across Czechia would ensure greater accessibility for consumers and increase the volume of goods being reused. This expansion requires strategic planning, investment, and community engagement to establish new facilities in other areas.

**Leveraging Technology for Enhanced Consumer Engagement.** The adoption of digital platforms and e-commerce for reuse centres presents an opportunity to reach a wider audience, streamline operations, and improve the customer experience. Developing user-friendly websites and mobile apps for online shopping, item donations, and information dissemination can significantly enhance consumer engagement and participation.

**Integration with Municipal Waste Management Systems.** Integrating reuse centres more closely with municipal waste management systems offers an opportunity for systemic change in how waste is handled and processed. By establishing partnerships with local governments, reuse centres can become a key component of the waste management infrastructure, diverting significant amounts of waste from landfills.

The transition towards a circular economy in Czechia, with reuse centres at its core, presents both significant challenges and opportunities. Addressing issues related to consumer awareness, logistical complexities, and operational efficiency is critical for their success and sustainability. However, the potential for growth and systemic transformation is immense. By leveraging public awareness campaigns, technological advancements, and strategic partnerships, Czechia can overcome these challenges and harness the opportunities presented by a circular economy. This shift not only contributes to environmental sustainability but also promotes economic growth and social well-being, marking a step towards a more sustainable and resilient future.



## **5.5. Conclusions**

Reuse centres are more than just places for recycling or selling used items – they represent a key component of the circular economy, integrating ecological, economic, and social aspects of our lives, contributing to a greener and more inclusive future. In the context of Czechia compared to the rest of Europe, weak institutional support and

organization were identified. It is evident that countries such as the United Kingdom, Ireland, and France could serve as models, whereas the situation in the neighbouring CEE countries is very similar.

A shift in thinking and approach to waste management could lead to the better utilisation of municipal resources, while supporting community activities, such as workshops and cafes associated with reuse centres, may increase citizen engagement and strengthen the local economy. The social function is an essential part of the reuse concept, and many of the institutions studied also engage in marketing, aimed at promoting the perception of used items as either 'new' – i.e. redesigned, or given new life associated with a different narrative. These companies view the promotion of their products and services very similarly to commercially oriented companies, primarily using their own platforms such as social networks, websites, or shared apps and websites.

This comparative case study on the implementation and impacts of reuse centres in Czechia and Poland provides insight into the potential of these facilities within the circular economy framework. The research highlights the significant contributions of reuse centres to waste reduction, resource conservation, and community empowerment through job creation and educational outreach. Both countries exhibit distinct yet complementary approaches to the integration of reuse centres in their national waste management strategies, reflecting the influence of local policies and community engagement levels.

This study underlines the necessity for robust policy support and integrated public awareness programmes to enhance the effectiveness and scalability of reuse initiatives. Despite facing operational challenges such as logistical inefficiencies and varying consumer awareness levels, reuse centres in both countries serve as critical components in advancing sustainable waste management practices. The success stories and challenges documented in Czechia and Poland provide valuable lessons for other regions seeking to incorporate circular economy principles into their environmental strategies.

The findings suggest that expanding the network of reuse centres and leveraging technological advancements can significantly enhance operational efficiencies and community engagement. Furthermore, the integration of reuse centres with municipal waste management systems is proposed as a strategic approach to maximise their impact. By fostering a culture of sustainability and resource mindfulness, reuse centres not only contribute to environmental conservation but also promote economic resilience and social inclusivity.

According to research, the reuse concept is also tied to maximising the utility of resources. Companies that offer repairs also, for example, rent out spaces, organize workshops, and so forth. Others, whose original business intent was waste collection, also rent out their services for organized collections and similar activities. The range

of possibilities depicted in the processed tables is broad, and the main barrier seems to be the perceived low value of products associated with the idea of low profitability. However, examples from partner organizations of RREUSE, which have been functioning for decades, prove otherwise.

Other concepts also include reuse centres as an additional source of funding for a completely different activity, especially in the case of non-profit or charitable organizations. Repairing furniture or collecting used items leads to, for example, the furnishing of social care homes, retirement homes, hostels, and similar facilities. It must also be remembered that information must reach those in need, and the organization of transportation or removal can cause problems. This study emphasizes partnership as part of the entire concept, and also found that long-established institutions are already creating an entire supply and demand chain to deliver materials from donors to buyers (or recipients).

The reuse concept is feasible, but it requires a change in attitude towards used items, sufficient information, and know-how, along with suitable partners to bring it to life.

Overall, the case study affirms that reuse centres are crucial in the transition towards a circular economy, advocating for a systemic shift in waste management paradigms to emphasise reuse and resource optimisation. The experiences from Czechia and Poland offer a blueprint for enhancing the functionality and acceptance of reuse centres globally, suggesting that targeted policy interventions, coupled with community-based initiatives, can significantly amplify the benefits of reuse practices in fostering a sustainable future.

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