

THE STORY OF BESANÇON

CASE STUDY

#9

In the last 6 years, Besançon has reduced waste generation by 30% and managed to roll out an extensive system of decentralized composting covering 70% of its population, resulting also in big savings in waste collection and treatment.

THE STORY OF BESANÇON

In 2008, Besançon and its surrounding municipalities decided to start moving away from incineration and close the old furnace. A programme based on an extensive use of decentralized composting and pay-as-you-throw fee has put them on track to Zero Waste.

Similarly to the rest of France, waste management in Besançon is organized and done through groups of municipalities. In the case of Besançon, three groups, including the Greater Besançon Authority, are in charge of waste collection for a total area of 1300 km², with 165 municipalities and 224.186 inhabitants, 85% of which live in the Greater Besançon. These three groups of municipalities compose SYBERT, a joint public authority in charge of waste treatment.

Despite a complex administrative structure and the potential overlap of different interests, SYBERT, which is only in charge of treating the waste, successfully developed a vision and a strategy aiming at waste prevention first, proving that waste treatment operators are a fundamental piece in the path to Zero Waste.

TRADITIONAL WASTE MANAGEMENT

The 165 municipalities composing SYBERT used to have a quite traditional waste management system, with high levels of residual waste that was sent to an incinerator owned by SYBERT itself, and composed of two ovens, an old one built 1976 that accounts for 40% of the ca-

capacity and a second one from 2002. However, in 2008 the local councillors of SYBERT, driven by the political will of the previous president, agreed not to rebuild the old furnace and rather re-think their waste management system. Their main reasons behind this were the concerns about the impact of incineration on public health. Overall environmental protection and avoiding the costs of a new facility were also important factors. This move required an ambitious waste prevention strategy, tackling both residual waste – i.e. what is not separately collected – and all waste in general.

Back in 2009, Besançon and its surrounding municipalities were at 217 kg of residual waste per inhabitant and 38% separate collection. Although their results were already above the French average and the national law only obliged them to reduce residual waste to 180 kg per inhabitant by 2015, the decision to close down the old furnace pushed their ambition, and SYBERT set its own target of getting to 150 kg of residual waste per inhabitant by 2015 and 55% separate collection. The participation in the EU-funded project “Waste on a diet” from 2012 to 2016 served to test and implement solutions to avoid the renewal of the old incinerator’s furnace. Under this project, a pay-as-you-throw scheme was put in place and most community composting sites were installed, which served to create real dynamic around waste prevention. The project managed to sustain the initial push and set Besançon on track to close the old furnace.



WASTE PREVENTION

Although waste prevention is not at the centre of its attributions, SYBERT has successfully managed to articulate waste prevention and its main tasks of waste management in a global strategy, making waste prevention one of its key elements of success. With the aim set on closing the old furnace, the joint authority established in 2010 a local plan for waste prevention including an overall reduction of 15% of residual waste and of 7% of all waste generation between 2010 and 2015, thus going beyond the targets set by the national law. This ambition is also reflected in the budget for prevention, that is 2.67€ per inhabitant, while the average French municipality spends 1.5€ per inhabitant.

In order to achieve those targets, SYBERT has taken more than 40 different types of measures, ranging from awareness raising, to the free provision of reusable plastic cups for parties and events under a deposit, or the promotion of food waste reduction practices such as feeding chickens with food scraps.

Single-use nappies are another important source of waste that is meant to be prevented through the promotion of washable cloth nappies. On top of raising awareness, SYBERT freely lends test kits for one month to parents willing to give them a try.

Additionally, Besançon has also worked with households on promoting a Zero Waste lifestyle. Differently to the challenge other cities have launched in France, SYBERT launched the “almost perfect households” campaign, inviting 20 different households within SYBERT to present their way of reducing waste at home. The idea was to showcase

best practices that can resonate with the neighbours of SYBERT.

However, if one initiative has been fundamental to achieve these objectives, it is the extensive promotion of decentralized composting to divert bio-waste from residual waste bin.

PAY-AS-YOU-THROW (PAYT)

In 2012, with the approval of the European project “Waste on a diet”, Besançon and its surrounding municipalities introduced a fee system by which citizens pay according to how much residual waste they generate, the so-called pay-as-you-throw scheme.

Waste collection in Besançon is still managed by the groups of municipalities, meaning that there is not one single fee system in place, particularly because of the different operational costs of waste collection in rural and urban areas.

However, they all have in common that the waste fee is divided in two components: a fixed fee based on the size of their residual waste bin; and a variable component that depends on the amount of set-outs and, in some cases, on the weight of the bin too.

The PAYT scheme has served to promote an increase of separate collection of waste, and especially to push citizens to start composting their food scraps, thus reducing the waste they produce and, consequently, the fee they pay.

The improved separate collection of waste has managed to increase the incomes of selling high quality materials, which has reduced the share of the waste management costs covered by citizens from 80% to 65%, the rest being covered mostly by producer responsibility schemes. As a result, the average waste fee per inhabitant in Besançon and the surrounding municipalities is 72€ a year, lower than the French average of 89€ per inhabitant.



THE WORK ON BIO-WASTE

The most significant element of Besançon's path towards zero waste is the extensive use of decentralized composting to manage bio-waste. Although bio-waste isn't separately collected, in 2016 70% of the population under SYBERT either had a composter or was covered by a community composting site, and over 50% of the citizens were composting their food scraps at home, in small community composting sites at the foot of their buildings or in larger community composting sites serving several buildings. This high participation in decentralized composting processes is reflected in the presence of bio-waste in residual waste that dropped from 67kg per capita in 2009 to 36 kg in 2014 and has probably been further reduced. This is directly linked with the PAYT scheme and the high support from local administrations, in particular from SYBERT.

This widespread solution of decentralized composting has managed to divert 7436 tonnes of bio-waste from incineration in 2016. This way, SYBERT municipalities have saved 792,900 € in the treatment only, to which further savings from collection should be added. These tonnes of bio-waste have been transformed in locally produced compost at very low operational costs, in particular for home composting and composting sites at the foot of the building.

HOME COMPOSTING

In a territory where 54% of the population live in a semi-urban or a rural area, home-composting is a very suitable solution to materially recover bio-waste while keeping costs very low.

In this sense, although home com-

posting was relatively common in Besançon and surroundings, the introduction of a PAYT scheme without separately collecting bio-waste and SYBERT's campaign to promote composting boosted home composting of bio-waste to divert it from the residuals bin.

Three times a year, SYBERT sells home-composters and worm-composters with a kitchen vented bin for bio-waste included at reduced cost (40€ for a 300l or 600l wood composter, 30€ for a 400l plastic one, 52€ for a worm-composter) for the citizens in the area. Although SYBERT does not give trainings on how to compost bio-waste, good practices are provided and citizens are directed to local associations of composters. This has resulted in 20,000 composters supplied by SYBERT over the recent years, on top of those provided by municipalities and those bought by users directly. In total, SYBERT estimates that, in 2016, 100.778 people in the area were composting at home.

COMMUNITY COMPOSTING

Densely inhabited urban areas required a different approach, due to limited amount of people with space to practice home-composting. Small-scale community composting sites turned out to be a very good solution to divert bio-waste from residuals, while creating new social dynamics.

AT THE FOOT OF BUILDINGS

The most common practice of community composting in Besançon is at the foot of buildings. 300 of these composting sites exist in the area covered by SYBERT, although 80% of them are concentrated in the city of Besançon.

Those sites are literally located at a green space at the foot of the apartment building and are managed by its inhabitants. Although the composters are privately owned and managed, SYBERT supervises and supports the installation and the first steps.

In order to install a new community composter, at least 2 inhabitants of a building have to request it to SYBERT, that assesses the location and feasibility and goes with them to a general meeting with all the inhabitants of the building. This results in the community inhabitants requesting formally the installation at a cost ranging between 106€ and 318€, depending on the amount of households involved. This covers the installation of the composter itself, but also the provision of kitchen vented bins, tools and the technical support for a year provided by a local association on behalf of SYBERT.

Although the participation remains voluntary, the formal request from the community of inhabitants and the support of SYBERT stimulate a larger participation beyond those households initially engaged.

The experiences have also resulted in increased social contacts among neighbours and the sense of ownership of a project. In some cases, people have decided to take a step further and make a small collective garden next to the community composter. For SYBERT, these small composting sites are very beneficial both for the environment and the economy, as they manage to divert big amounts of bio-waste at a fixed cost of 2000€ for the initial investment and the first year support, after which the treatment of this waste comes at zero cost. In 2016, SYBERT estimates that 376,8 tonnes of bio-waste were composted on these

small sites, resulting in 40.178 € in savings for the municipalities in the treatment. However, because not all neighbours take part of the programme, these amounts could be further increased, resulting in even higher environmental and economic benefits.

AT COMPOSTING HOUSES

For those areas where there is little or no common space to do home or building-composting, SYBERT has proposed larger composting sites with capacity for up to 20 tonnes a year. These can cover several buildings and between 100 and 1000 households. In this case, the initiative originates at the administration level, with the will of extending decentralized composting to people who can't do it at home or at their building.

12 house-shaped larger composting boxes have been installed since 2013 in green public spaces of Besançon or, in the case of condominium, in common spaces after the agreement of the owners.

For the composting houses, the system works differently, as these are fully managed by SYBERT who, on top of installing them, supervises the composting process. In this regard, for the users, the composting houses work mostly as bring-in points that compost on-site. These can only take bio-waste at some specific hours and days, with an operator weighting the waste entering the house and ensuring that there is no contamination.

Once the composting houses are installed, a party is organized in the neighbourhood, to bring people together and explain them how the system works. Those willing to par-

ticipate receive a kitchen vented bin. Although these could be expanded to new densely-populated areas, SYBERT estimates that the priority for now is to increase the participation in the pilot areas, knowing that, differently from home or building composting, composting houses don't originate from a citizen initiative, but rather from the administration will. Whilst the participation remains voluntary, the lack of bio-waste separate collection in combination with the PAYT on the residual bin is an incentive for the separation of bio-waste. For some areas with big amount of apartments belonging to the same lessor, it has been a big challenge to manage a better individualization of the fee (at least by floor), as lessors tended to simply split the fee among all tenants, which certainly reduced the incentive to participate in bio-waste separate collection.

SORTING INSTRUCTIONS

Similarly to other places in France and in Europe, the citizens of Besançon weren't always sure about how to sort their waste. Whilst glass and paper were already at high levels of separate collection, lightweight packaging was especially low performing. This was particularly dire with regards to certain types of packaging like yoghurt pots, sachets or plastic trays that were even supposed to go to the residual waste bin, despite being recyclable. This created confusion among citizens and resulted in lower separate collection rates and the loss of precious materials. To tackle this, in the second half of 2016 SYBERT changed the sorting instructions for citizens to clarify and enlarge them to all packaging, well ahead the French law obligation by 2022. The aim was to capture all the products covered by a producer responsibility scheme for packaging.

This change that came with some works in the sorting facility allowed SYBERT to increase the collection of dry recyclates by 8%, without increasing substantially the sorting rejects or decreasing the quality. SYBERT expects that this progress keeps building with further communication, as there are still many people used to the old system.



CIVIC AMENITY SITES

In addition to separate collection and decentralized composting, SYBERT counts on 16 civic amenity sites, roughly 1 for 15.000 inhabitants. Rather than a complementary element of the waste management in the area, these are perceived as key parts of it, as they ensure the recycling or even the reuse of large amounts of waste, some of which potentially hazardous.

The sites collect both household and assimilated commercial waste. Users need a badge to enter the site, which ensures the control of waste that goes into. However, while citizens have their waste freely collected, merchants and businesses have to pay per volume and for the badge. This reduces the economic burden for SYBERT, and allows it to have personnel in every civic amenity site. In every site, the staff accompanies the users to answer their questions and to ensure the proper separation of the waste streams. The personnel are also trained to identify reusable products and to maximise the diversion from recycling of waste to the specific collection point for reuse within the same site. These specific collection points are co-managed with EMMAUS France, a reuse operator. In 2016, 800 t of products did not become waste, accounting for 1,6

% of what entered the civic amenity site. This is a vivid representation of how waste can be turned into a re-source; reusing 800 t meant reducing disposal costs, whilst creating economic activity in the reuse sector. The limitation of space, however, prevents the SYBERT from having a collection targeting more the repair and reuse of products or waste, particularly with regards to big electronic equipments or furniture.

BULKY WASTE GETS RE-CYCLED!

Until 2015, all the bulky waste collected in Besançon used to go to landfills, although most of it was fully recyclable. The lack of a proper sorting facility for this type of waste prevented the recovery of a big part of it. The arrival in summer 2015 of the Sorting and Massification Plant (ITM in French) allowed to effectively sort this waste into different materials with views to recover them. This innovative plant is not common in France and was conceived as a complementary sorting plant targeting specifically the waste coming from civic amenity sites, and as a way to get higher recycling rates for them.



LOOKING FORWARD

The right political will in combination with a clear strategy to cut down on waste and increase separate collection have managed to get Besançon below 150 kg of residual waste per person and 58 % of separate collection. What's more, Besançon is proving that decentralized composting can play a giant role to drive circular economy while keeping waste management costs low. This makes Besançon the best performing city in France of this size.

These environmental benefits result in local and stable jobs. SYBERT employed in 2016 59 people, to whom we should add those working on waste collection, civic amenity sites, composting houses and other service providers.

Despite the success so far, SYBERT intends to go beyond those figures, and envisions to go below 100 kg

of residual waste per person and close the old furnace in 2021. For that, they are planning, among other measures, to:

> Increase the participation in community composting

> Improve the capture of light-weight packaging

> Further promote washable nappies

> Refurbish and enlarge some of the civic amenity sites to be able to get more materials

> Further implement decentralized treatment solutions for bio-waste based on the characteristics of each area

SOURCES

Syndicat mixte de Besançon et sa Région pour le traitement des déchets, SYBERT
www.sybert.fr

For more information visit:
www.zerowasteurope.eu
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Zero Waste Europe was created to empower communities to rethink their relationship with the resources.

In a growing number of regions, local groups of individuals, businesses and city officials are taking significant steps towards eliminating waste in our society.

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