

THE ROLE OF MUNICIPAL POLICY IN THE CIRCULAR ECONOMY

Investment, jobs and social
capital in circular cities



EXECUTIVE SUMMARY

This report explores the association between municipalities pursuing circular economy policy and investments in circular business that create jobs. Additionally, it takes a closer look at how businesses perceive this municipal support for the circular economy. The report summarises the findings of a study by Circle Economy and the Erasmus Happiness Economics Research Organisation with the support of the Goldschmeding Foundation.

Jobs are one of the keys to distribution of wealth, a healthy economy and thriving society. The circular economy is estimated to create a net amount of 700,000 jobs across the European Union by 2030. Municipalities and governments carry the responsibility and ability to create the boundary conditions for the circular economy to reach its full potential. This overview summarises what municipalities can do to maximise the benefits of the circular economy for society.

- 1. Municipalities can employ a series of regulatory, economic and soft instruments** to achieve socially desirable outcomes and ensure the sustainable and inclusive development of their cities.
- 2. Municipal circular policies are conducive to generating employment.** Regulatory and economic interventions are most strongly related to the creation of circular economy jobs, while soft interventions are not best suited to attract new investment and jobs, however, they facilitate ongoing circular activities.
- 3. Strategy and targets** help the business community to share societal and environmental objectives and so encourage **long-term thinking and collaboration** over short-term budgeting.
- 4. Loans and subsidies** for circular economy activities helps **overcome financial barriers** related to establishing a business, servicing immature markets, or taking office in a city.
- 5. Networks and information sharing** facilitate ongoing circular activities and **boost social capital** of the circular business community

These findings add to the limited existing empirical evidence in this area and contribute to the debate on the impact of circular economy policy. More research about which policies work in which circumstances is necessary.



We know that circular strategies can create new, local, stable jobs and support an economy that is low carbon and human-centred. Cities play such a key role to make the transition happen and it is the policymakers who now have the opportunity to make thriving cities.

Harald Friedl, CEO, Circle Economy

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INTRODUCTION

The circular economy offers an alternative way to the linear 'take-make-waste' economy that is harming people and the environment. It seeks to extract the maximum value from resources in use and keeps materials in circulation for as long as possible. This entails prioritising regenerative resources as material inputs and making the most out of existing resources and materials, through strategies such as maintenance, cascading, sharing, reusing, redistribution, remanufacturing, recycling or recovery.

The circular economy is strongly embedded in local economies. The transition to the circular economy requires the innovative entrepreneurship and strong network connections that cities and urban areas typically incubate. Local networks and collaboration in the circular economy materialise in the sharing economy, the closing of organic resource loops and return logistics schemes. The density and diversity of stakeholders and resources that are gathered in a city, and their interaction with the hinterland, make for a fertile breeding ground of circularity.

The potential benefits of the circular economy are many. The circular economy is set to reduce carbon emissions and resource use throughout supply chains, tackling the global problems of climate change and resource depletion, whilst contributing to local livability and attractiveness of cities. Equally important, but often less discussed, is the socio-economic potential of the circular economy.

From a socio-economic perspective, circularity can be seen as a socially desirable state. Sharing practices can help to foster social capital, while shortened supply chains and value capturing activities can boost local economic activity. Moreover, the circular economy is estimated to create a net amount of 700,000 jobs across the European Union by 2030.

The direct and spillover effects of employment creation are of vital importance to local economies - so what exactly can they do to support the circular economy and maximise its benefits for society?

Municipalities are well positioned to support and steer the transition to the circular economy. The municipal mandate spans public policy that is directly linked to circular economy activities, such as waste management, zoning and urban planning. Moreover, they have the ability to create markets for circular products and services through public procurement, and are embedded in the local economy to cultivate networks and localised innovation systems.

Governments carry the public responsibility to create the boundary conditions for the circular economy to achieve its full potential; for it is not a given that circularity automatically generates positive societal spillovers. Indeed, issues such as diminishing social protection of workers and the depoliticisation of consumption need addressing. Governments should ensure an inclusive and sustainable society, and can use the circular economy as a vehicle to this end.

This report provides insight into the estimated gross employment effects of municipal circular economy policy. It explores the instruments municipalities have at their disposal to support the transition to the circular economy and how circular businesses perceive these instruments.

JOBS IN THE CIRCULAR ECONOMY

Employment in the circular economy reflects the broad nature of the concept and can equally be defined according to the DISRUPT framework presented on the right. The circular labour market, much like its linear counterpart, is comprised of all kinds of jobs in different sectors, ranging from manufacturing and creative industries to waste and resource management. Jobs in the circular economy, shortly 'circular jobs', are all jobs that contribute to one of the 7 key elements of the circular economy. There are three types of circular jobs:

- **Core circular jobs.** These jobs ensure that raw material cycles are closed and thus form the core of the circular economy. They include jobs in renewable energy, repair and waste and resource management sectors. Examples of core circular jobs are displayed in light blue in the framework on the right.
- **Enabling circular jobs.** These jobs enable the acceleration and upscaling of core circular activities and thus form the supporting shell of the circular economy. They include jobs in leasing, engineering and digital technology - albeit only those that actually contribute to circularity. Examples of enabling circular jobs are displayed in dark blue in the framework on the right.
- **Indirectly circular jobs.** All other sectors that provide services to primary circular activities and that create supporting circular activities.



DESIGN FOR THE FUTURE

Adopt a systemic perspective during the design process, to employ the right materials for appropriate lifetime and extended future use.

The **architect** designs buildings to enable resource recovery after the building's use phase and so designs for the future.



INCORPORATE DIGITAL TECHNOLOGY

Track and optimise resource use and strengthen connections between supply-chain actors through digital, online platforms and technologies.

The **data analyst** makes sense of large amounts of information to connect supply and demand of secondary materials by means of digital technology.



SUSTAIN & PRESERVE WHAT'S ALREADY THERE

Track and optimise resource use and strengthen connections between supply-chain actors through digital, online platforms and technologies.

The **appliance technician** repairs appliances, machines or vehicles and so extends the lifetime of things already made..



RETHINK THE BUSINESS MODEL

Consider opportunities to create greater value and align incentives through business models that build on the interaction between products and services.

The **leasing process manager** coordinates service providers across market segments to enable the new business model.



USE WASTE AS A RESOURCE

Utilise waste streams as a source of secondary resources and recover waste for reuse and recycling.

The **recycling operative** separates waste into materials that can and cannot be recovered, allowing for waste to be used as a resource.



PRIORITISE REGENERATIVE RESOURCES

Ensure renewable, reusable, non-toxic resources are utilised as materials and energy in an efficient way.

The **solar panel installer** builds solar panels and so contributes to the use of solar energy as a regenerative resource.



TEAM UP TO CREATE JOINT VALUE

Work together throughout the supply chain, internally within the organisation and with the public sector to increase transparency and create shared value.

The **director of a trade organisation** manages the membership organisation that facilitates collaboration for joint value creation.

Building the socio-economic case for the circular economy

Employment often constitutes a political priority in virtually any city or national government. Job opportunities are generally associated with a thriving economy, lifting people out of poverty and giving a sense of purpose and fulfilment. Unemployment, on the contrary, is associated with increased levels of mental health problems and poverty, in turn, leading to increased illness. Overall, jobs, when combined with equitable tax policy, are the key to thriving societies, to distribution of wealth and healthy economies.

Recent estimates have highlighted the potential of the circular economy to generate a net employment increase of about 700,000 jobs in the European Union by 2030. Such estimates emphasise the potential positive impact of the circular economy on job creation. This report shows that municipal policy is conducive to generating these circular jobs, and explores how it can realise this socio-economic potential of the circular economy.

URBAN CIRCULAR ECONOMY POLICY INTERVENTIONS ATTRACT JOBS

Circle Economy and the Erasmus Happiness Economic Research Organisation have studied the association between circular economy policy imposed by European cities and the creation of jobs in the circular economy in these cities. The results of this study are summarised below, with notes on the method on the right.

Circular economy policy in cities attracts job-creating investments in the circular economy. Circular economy policy interventions of 43 European cities showed to influence investment decisions of circular economy firms. These investment decisions, in turn, generated jobs in these cities. From this analysis, the relationship between the number of circular economy policies and the jobs created by circular economy investments is positive and significant.

Circular economy policy support core, enabling and indirectly circular jobs. The study shows that most investments relate to renewable energy and environmental consultancy services, supporting activities such as R&D, manufacturing and sales. It is worth noting that the renewable energy sector traditionally knows high levels of foreign direct investment,

Notes on the method

- The findings of the research presented here only refer to employment created by greenfield foreign direct investment (FDI). The model relates municipal circular economy policy to employment by means of greenfield FDI, the investments companies make in order to establish a certain share of their activities in a foreign country. This can include all kinds of activities, from a manufacturing facility to marketing offices. The report uses the term 'investments' to point to greenfield FDI.
- The data used in this study covers the years 2016 - 2017 and 43 cities in the European Union.
- The findings of the research presented here only refer to investments made and employment created in the environmental technology cluster, which contains sectors such as recycling, renewable energy and environmental consulting, but also scientific services and architectural engineering. This cluster most closely resembled the circular economy, and is therefore referred to as such in this report.
- The model controls for demand factors, cost of labour, and agglomeration and following behaviour. These are factors that relate to the attractiveness of cities and therefore influence location decisions of large firms, and could confound the relationship between circular economy policy and investments.

TOOLS FOR CITIES TO FOSTER CIRCULAR JOBS

Policy instruments are the tools that governments can use to influence the economy and society and change the behaviour of people and business. Municipalities can employ a series of regulatory, economic and soft instruments to achieve socially desirable outcomes and ensure the sustainable and inclusive development of their cities.

Regulatory and economic interventions are most strongly related to the creation of circular economy jobs.

Municipal circular economy strategy and targets facilitate stakeholder collaboration in the field. Strategy and targets are an important element of regulatory support for the circular economy. A strong circular economy vision of a municipality helps relevant businesses to share certain societal and environmental objectives, and as such enables long-term thinking over short-term budgeting.

Economic support for circular economy activities helps overcome financial barriers. Loans and subsidies are a form of economic support that municipalities regularly use to support certain behaviour. They can support the demand side (such as subsidies for solar panels or retrofitting of homes), and the supply side. They support businesses in overcoming financial barriers related to establishing a business, serving an immature market, or settling in the city.

Soft interventions are not best suited to attract new investment and jobs, however, they facilitate ongoing circular activities. Soft instruments include instruments such as networks and information campaigns. Whereas these are less strongly related to big investments in the circular economy, they have a significant impact on the stakeholders already active in the field. They are effective in, for example, raising knowledge and awareness levels and connecting stakeholders to find project

partners. It follows that soft interventions can be applied complementary to regulatory and economic interventions.

Cities can capitalise on the interaction of policy portfolios and other levels of government, rather than focusing on one specific instrument or singling out interventions to support circularity. Policy interventions are employed on multiple levels of governance. The ultimate regulatory and fiscal autonomy of municipalities is determined by national government, which determines the extent of centralisation of the country. Whereas municipalities often have limited legislative and fiscal mandate, they have the power to influence such policy through lobbying. Moreover, municipalities possess very powerful instruments in the circular economy, such as public procurement, economic support and zoning. As part of policy packages, then, such instruments can operate more effectively than the sum of their parts. Ultimately, policies interact with one another across different levels of governance and across instruments and packages.

NOTES ON POLICY INSTRUMENTS

Regulatory and legislative instruments

Regulatory and legislative instruments are designed to achieve compliance through enforcement. Such efforts can be both prohibitive or prescriptive. Next to enforcement, regulatory instruments give strategic direction to engender focused action or coordinate and implement policies. As such, governments can issue concrete guidelines and frameworks or compulsory legal rules and objectives for the circular economy.

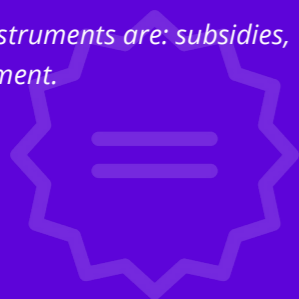
Examples of regulatory instruments are: bans, performance standards, monitoring, strategy and targets or labelling.



Economic instruments

Economic instruments are designed to influence stakeholder behaviour by making use of and influencing market dynamics through fiscal, economic or financial incentives. They serve to overcome market entry barriers, market failures and financial barriers that impede efforts to comply with regulations or create socially desirable outcomes. As such, economic instruments harness market dynamics to influence behaviour and decisions by changing prices, imposing or exempting taxes or mandating carbon accounting.

Examples of economic instruments are: subsidies, grants or public procurement.



Soft instruments

Soft instruments create boundary conditions to smoothen the transition to the circular economy by influencing knowledge levels, collaboration and network structures and governance structures. They represent essential means to accelerate the transition towards the circular economy.

Examples of soft instruments are: information campaigns, education programmes, matchmaking platforms and institutional design.



Circle Economy has assembled all the examples of policy interventions for the circular economy that were used for this study in the Knowledge Hub - an online repository for circular economy examples.

You can access the Knowledge Hub [here](#).

Barcelona Zero Waste Strategy

The city of Barcelona is committed to further reducing the generation of municipal waste. The city's Zero Waste Strategy encompasses a multitude of policy interventions by the municipality to support households and organisations contributing towards this goal.



In order to drive action for a zero waste city, Barcelona has set strategic targets:

- To reduce waste generation to less than 1,2 kg per inhabitant per day;
- To reach recycling levels of 60% of municipal waste; and
- To reduce the polluted fraction of organic waste to below 8%.



The municipality supports citizens, organisations and businesses to contribute to achieving these ambitions by means of financial stimuli. For citizens, for example, the municipality has reformed waste taxation so as to encourage source separation and is developing infrastructure for community composting for biowaste from households.



In addition to strategic ambitions and financial support, the municipality of Barcelona promotes green and circular behaviour amongst citizens and businesses by means of a multitude of measures, such as environmental education and information at Green Points in the city, distributing maps with sustainable shops and restaurants in the city, and seminars for more sustainable offices.

Amsterdam Circular

In order to reduce the environmental impact of the city while simultaneously strengthening the local and regional economy, Amsterdam explored opportunities for the circular economy in 2015. Based on this, the city developed three programmes contributing to the circularity of the city: Amsterdam Circular - Learning by Doing, Circular Innovation Programme 2016-2018 and the Waste Implementation Plan.



The city supports circular initiatives from a regulatory perspective in multiple ways. For example, a set of urban planning guidelines includes sustainability standards that promote the use of secondary and residual materials. Moreover, by introducing a flexible zoning law in the port area, the increased flexibility of building functions counteracts structural vacancy.



From a financial perspective, then, the municipality promotes circular criteria in public procurement. For example, the municipality purchased office furniture with the provider committing to taking the old furniture back and refurbishing it for future projects. Next to that, the municipality provides loans for residents investing in energy efficient housing, and has set up an investment fund for projects in the areas of climate, sustainability and air quality (Amsterdam Climate & Energy Fund and the Sustainability Fund).



Through a structural collaboration with the Amsterdam Institute for Advanced Metropolitan Studies, Amsterdam shares city data with researchers, expresses city and citizen challenges and allows for the use of the city as a testing ground for circular projects.

Paris Circular Economy Roadmap

In 2015, the White Paper on the Circular Economy in Paris was published, outlining 65 action proposals for the circular economy in Paris. In its Circular Economy Plan (CEP), the city stipulates it will prioritise 10 to 15 actions every year, as such annually readjusting its circular economy strategy in response to market changes within the city.



The 2017 - 2020 CEP sets targets for the city of Paris in relation to the French national targets. They include a zero waste path for household waste and a 2019 deadline to sort all plastic packaging. Moreover, the municipality sets itself the ambition to run building sites that produce no waste from operations and require 100% recycled paper from public purchasing.



In its first Roadmap, the municipality has prioritised economic support in the shape of direct financial support and infrastructural provisions. The municipality subsidises a refurbishing workshop that diverts donations (clothing, books, records, appliances and furniture) from going to landfill. The municipality also aims to further develop the service economy and ecodesign by incorporating lifecycle costing and circular indicators into public procurement practices.

In order to advance the reuse of secondary building materials, the Department of Heritage and Architecture aims to develop a warehouse that internalises the production of building materials from secondary materials into their operations. Eventually, a network of warehouses within the department will coordinate the production system and stock management will be organised with new software.



The city employs a wide range of soft instruments to support the transition to circularity, ranging from knowledge sharing to training and education programmes. Amongst other interventions, the city organises repair cafes in school, trainings on the reuse of building materials, and organises premise sharing initiatives for organisations in the circular and social and solidarity economy.

Birmingham Waste Strategy

With the aim of developing a more sustainable city for the benefit of all, the Birmingham City Council tackles its waste management in a way that reflects the wider environmental, social and economic landscape.



In 2016, Birmingham introduced a vision for its future waste management. The city aims to promote a circular economy by preventing waste generation, maximising recycling and re-use, and utilising waste as a resource in contributing to health, wellbeing and prosperity.



The city council supports businesses contributing to the diversion of waste from landfill by embedding waste prevention in its public procurement practices. When it comes to household waste, the city works with property developers to specify waste collection arrangements to ease separating waste for inhabitants, and develops alternative collection systems for flats and other households with difficult access.



The city council also adopts soft instruments to engage all inhabitants in a more circular economy. Awareness raising campaigns are employed to influence purchasing habits of consumers. Moreover, the city is looking into the implementation of a system that support the sharing economy, such as an online platform.

FORCE: Copenhagen, Hamburg, Lisbon, Genoa

Copenhagen, Hamburg, Lisbon and Genoa have engaged in the joint FORCE project with the aim to minimise leakage of materials from the linear economy and instead work towards a circular economy. Each city takes the lead in one value chain of materials: plastic waste, strategic metals from electronic and electric equipment and surplus food and biowaste. Together, the cities implement a wide variety of policy instruments to support circularity.



The four cities are developing infrastructure to divert waste from going to landfill. Amongst others; Hamburg will establish a separate collection of plastic films at five recycling stations; Copenhagen will develop the infrastructure to collect and repair electric and electronic waste with repair shops in a pilot area of the city; and Lisbon will establish two repair shops that will train and employ students and unemployed people. Lastly, Lisbon will also improve the separation of wood materials in certain reception centres and strengthen the collaboration with local woodwork ateliers.



The cities also employ soft instruments to engage inhabitants in landfill diversion. For example, Hamburg is developing a web portal that guides households in decisions on what to do with broken electric and electronic appliances, while Lisbon conducts online and offline food waste reduction and source separation campaigns.

Furthermore, each of the cities develop knowledge and insights to better manage recycled waste. Copenhagen analyses the biowaste that is currently collected and Hamburg investigates which measures increase source-separation of biowaste by households.


WHAT DO BUSINESSES SAY?

The results described in this report display a positive and significant relation between municipal circular economy policy and employment creation in the sector, with a particularly strong effect observed for regulatory and economic instruments. This section gives examples of businesses active in the circular economy, and how they perceive these policy interventions.

From supporting interviews with circular businesses, it appears that regulatory and economic policy support indeed have a strong enabling effect on establishing new circular projects or businesses. Soft instruments, however, are not to be underestimated to facilitate and support ongoing circular activities in cities.

DSM Advanced Solar

DSM Advanced Solar is a unit of DSM's Innovation Centre that develops and sells products in the PV industry. They currently sell coatings and backsheets for solar panels, and therefore active in the early stages of the value chain. DSM operates worldwide, with production facilities and offices across Asia, the Middle East, the Americas and Europe.

 DSM Advanced Solar maintains regular contact with European authorities on developing an eco-labelling system for PV products. Integrating elements such as carbon footprints of products would boost their solutions, which carry lower embedded emissions. As such, through governments, DSM Solar is able to attract attention to the environmental impacts of their products. This increases the sales of their environmentally less impactful products and supports the further development of such products in general.

 DSM Solar benefits from the networking and demonstration opportunities The Netherlands Enterprise Agency offers to Dutch businesses. Such large scale demonstration of new products is necessary to secure their place in the existing market, and helps establish the Netherlands as an exporter of PV products.



DOOR architecten is an architectural design studio, active in the Netherlands and Belgium. Their offices, reused containers in a reclaimed brownfield in Amsterdam, reflect the circular ambitions the studio was founded on five years ago, and still pursues today.

DOOR has received support from an economic perspective in multiple ways. By means of loans, reduced rent and small subsidies, the studio was able to settle in offices that are not only centrally located, but also a prime example of circular construction. In exchange, DOOR support the circular economy policy of the city by adding value to the upcoming district where they are located.

The studio has participated in tenders that pay attention to circularity across the country. The architects greatly appreciate the increasing amount of attention public bodies pay to circularity in their tenders, as it allows them to further pursue circularity in their practice. They have made a habit out of investing in these pilot projects, in order to help municipalities create the shared successes that are necessary to accelerate the uptake of circularity by their own and other public bodies.

DOOR actively participates in the workshops and networking events that the municipality organises. The studio has found these events to be very useful in finding project partners for circular initiatives. Moreover, such events motivate DOOR to continue to integrate circular principles in their designs, as a shared ambition with the city and a wider group of stakeholders. In return, DOOR make their own studio space available as an inspirational and circular environment for these meetings.

Knowledge and information instruments, then, are considered very effective by the studio to raise and equalise knowledge levels about circularity amongst project partners and stakeholders. Pieces of research then, with the Roadmap Circular Land Tendering as a key example, can set inform both public and private sector. Overall, soft instruments facilitate and smoothen the application of circularity in projects.

With strong, refreshing designs and strategies, we strive for a future-proof living environment that runs on a circular economy. Amsterdam's circular policies actively support us to achieve our ambitions. We support these policies by spreading our circular impact in our field of work.

Karin Dorrepaal & Saskia Oranje, Founders,
DOOR architecten



FOODLOGICA

FOODLOGICA is a logistical service provider that sustainably transports local food from supplier to customer via e-trikes. Besides delivering the transport service itself, FOODLOGICA supports and facilitates an effective change of their customer's logistical system. With two hubs, FOODLOGICA operates only in Amsterdam, where it started as a pilot five years ago. Plans are being made to open up two other hubs in the city, as well as to expand their services to Utrecht, Rotterdam, Den Haag and Milan in the near future.

FOODLOGICA employs 25 people on full-time or freelance contracts, performing more than 120 deliveries per day. Especially FOODLOGICA's drivers have an international profile. Most of them moved to the Netherlands recently, and FOODLOGICA - who trains them for the position and local living and working culture - is a stepping stone into the Dutch labour market for them.

In addition to the company's nine e-trikes, FOODLOGICA purchased an electric truck. For this investment, the company received a modest subsidy from the municipality of Amsterdam.

In parallel, support services from private organisations, such as from PwC, and public-private partnerships, such as the Impact Hub and Social Enterprises NL, was found to be effective. From such private organisations, FOODLOGICA has received advisory and financial support as well as access to the organisations' networks.



ROCKWOOL

The ROCKWOOL Group is a global leader in manufacturing stone wool insulation. With 45 manufacturing facilities in Europe, North America and Asia, the company strives for sustainability on the product and operational level. Rockwool Sweden have launched a recycling service in cooperation with national a waste handler region for any residual ROCKWOOL insulation that is retrieved from construction sites.

The city of Malmö has invited over 100 companies to inform the development of a fossil-free 2030 roadmap. Engaging ROCKWOOL in this process together with contractors, banks, suppliers and construction companies, the City of Malmö was able to synchronise the thinking about circularity and resource efficiency in the Malmö construction sector. This has made it significantly easier for the local Rockwool branch to find project partners that share the long term thinking that is required to transition to circularity.



ToastAle



ToastAle produces beer from surplus fresh bread. They employ eleven people in London and another three at a New-York-based subsidiary. Furthermore, they have two franchise branches in Cape Town and Iceland, while three breweries in Brazil and Ireland are licensed to brand their beer with ToastAle.



To cover efforts in product research, ToastAle received financial support through a nationally tendered innovation grant for SMEs as well as private funds. On the municipal level, ToastAle would benefit from affordable loans to financially secure their business' scale up and testing activities.



ToastAle receive support from the Advance London Business Support Programme, run by the London Waste and Recycling Board. It supports SMEs with existing circular economy offerings with in-kind advisory support. Under this program, they are running, a hotspot analysis for environmental impact of their operations.

Beyond this, the program provides valuable access to a business network as well as speaking opportunities, that facilitate to find synergies with other companies and raising the profile of their product with the consumer base.



We've successfully created a business model that has a positive impact on people and the planet, and drinkers love the circular story behind our great-tasting beers. The support we receive from Advance London enables us to delve deeper into our environmental footprint and identify opportunities to further improve.

Louisa Ziane, Director of Global Brand, Culture and Sustainability, ToastAle



Bio-lutions produces packaging and disposable tableware from local agricultural by-products. With head offices in Hamburg and research centre in Brandenburg, the company's first production facility and current main market is located in Bengaluru, India. Bio-lutions employs 55 people across its three branches, and has plans to expand across Germany and Thailand.

Soon to tap into new markets, a second production facility will open in Brandenburg, Germany in 2020. The attractive circular economy policy of the county and the possibility to take over labour from a closed down paper factory formed the two decisive criteria to settle in Brandenburg.

India's resolute ban on single-use plastics in 2017 has forced the market to rapidly explore alternative materials. The impetus for more sustainable packaging solutions drove Bio-lutions to kick start their production in the Indian market.

Back in Germany, however, the products of Bio-lutions, and any other biodegradable packaging products, forcibly end up in the yellow bin for packaging. The law identifying waste by purpose - packaging - rather than by material - biobased - forms a regulatory barrier that prevents Bio-lution's packaging to be composted as intended. There is no green bin for packaging materials.

Bio-lutions occasionally collaborates with the state laboratory Schleswig Holstein. The institution shares valuable information on biochemical issues. This collaboration allows to include experienced knowledge, recent findings and material innovations into their product development process which finally enables and assures innovative products as an outcome.

Bio-lutions does not receive any financial support on municipal level, but benefits from several programs on the federal level. Economically supporting means on municipal level could facilitate their operations and product development --particularly in respect to the new production facility in Brandenburg. Beyond usual SME support, targeted economic policy instruments for sustainable technologies and social enterprises could be of relevance for Bio-lutions.



A strong circular economy vision makes a city highly attractive for us for expansion. It's a win-win: Municipal support facilitates our operations, in turn we're able to contribute to the local labour market and enrich the regional market with locally produced, alternative packaging and products.

Eduardo Gordillo, CEO, Bio-lutions





Pagachey - a word play on “pas gâcher”, French for do not waste - is an online platform against food waste. Anyone can share any food surplus or remains they might have, so as to give or sell it and as such divert it from going to waste. They are based in Montrouge, greater Paris, from where they collaborate with online partners to manage the user community, graphics and communications.

The user base of the platform consists of multiple dense pockets of users in city and town centres, as the nature of food leftovers does not allow them to be transported over large distances or be preserved for a longer period of time.

Pagachey see increased political support for initiatives against food waste in the narrative of policy makers on a local as well as regional and national level. These political intentions and ambitions constitute good signals for initiatives countering food waste, yet, the translation into concrete support from local governments seems to lag behind on this front.

Pagachey are in the process of securing support from the municipalities where users are most active. This would consist of investing in the communications and marketing campaigns to raise the profile of the platform in order to secure usage of local residents. In return, Pagachey offers municipalities a page dedicated to the municipality on the Pagachey website and to share data about the amount of food that was rescued in the respective municipalities.

Lastly, Pagachey enter into dialogue with (local) governments and encourage them to do the same the other way around, so as to truly understand the value both stakeholders can add for one another.



As the urgency to combat food waste is increasingly recognised in the political sphere, we welcome the support from local policy makers translating these intentions into concrete support. As such, local governments and Pagachey can collaborate effectively to reduce food waste and benefit all citizens.

Laurent Coste, Founder, Pagachey

GRL



GRL specialise in the recycling of waste glass and the logistics around it. They produce 100% of their electricity (for heating) from renewables on-site and employ 35 people in Belgium.



GRL take advantage of the separation and collection infrastructure that is established through the Green Dot system, which prescribes that the beverage producer pays a fee to the Green Dot for selective collection and sorting of disposed glass bottles. In turn, the Green Dot pays a waste handler for the recycling of these bottles. Beyond infrastructure, the system ensures a fair cost distribution amongst the value chain actors and a steady supply of glass.

Beyond the Belgian border, however, the lack of a uniform collection system and standards impedes the practical scaling of GRL's services. Moreover, there is no such thing as a Green Dot System for flat glass in Belgium that enforces the adequate separation of flat glass on construction sites, resulting in the loss of residual glass from these sites.



In return for their sustainable on-site electricity generation, GRL receives a subsidy from the Flemish government in the form of a green certificate for each kWh produced. This allows GRL to decrease their operational costs related to sustainable energy use.

CONCLUSION

This report provided insight into the estimated gross employment effects of municipal circular economy policy, which instruments municipalities have at their disposal to support the transition to the circular economy and how circular businesses perceive these instruments.

This report has shown that circular economy policy in cities attracts jobs creating investments in the circular economy. Most investments relate to renewable energy and environmental consultancy services.

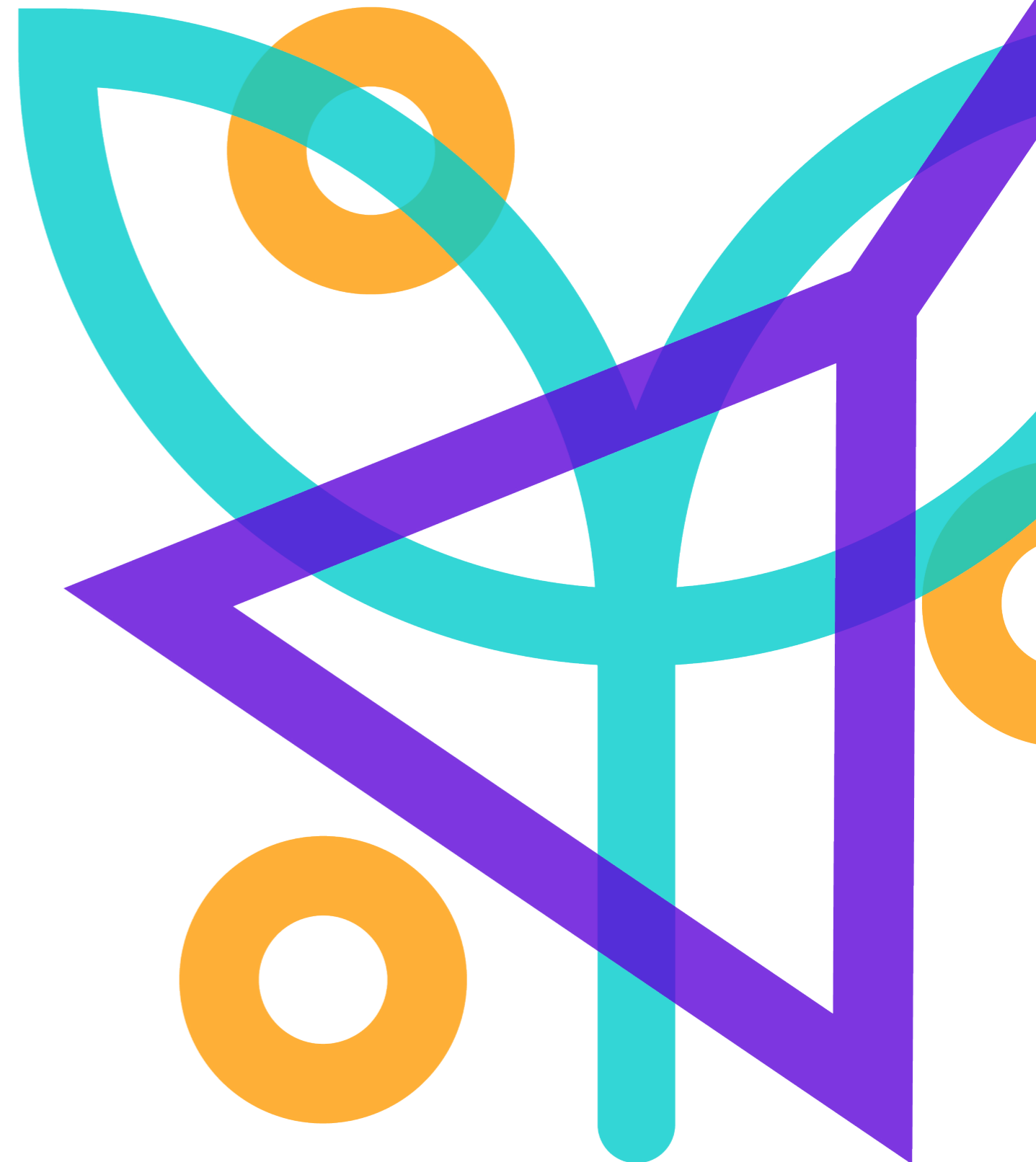
Regulatory and economic interventions are most strongly related to circular economy jobs in a city. This can be linked back to municipal circular economy strategies and targets facilitating stakeholder collaboration in the field, and economic support being necessary to overcome certain financial barriers.

It appears that regulatory and economic policy support is most important in establishing new circular business and projects. Soft instruments, however, are not to be underestimated to facilitate and support ongoing circular activities in cities.

The scope of the study, however, is limited to employment generated by foreign direct investment, and can therefore overlook a significant share of other circular economy employment in sectors that do not traditionally know high levels of such investments.

Moreover, the study looks at the impacts of individual policy instruments, whereas the interaction between and packaging of policy instruments can have increased effects. The effects of this requires further research.

Whereas the circular economy offers great potential for people and the environment, it is not a given that circularity automatically generates positive societal spillovers. Governments carry the public responsibility to ensure an inclusive and sustainable society, and can use the circular economy as an agenda to this end.



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At Circle Economy, we work to accelerate the transition to a circular economy. As an impact organisation, we work to identify opportunities to turn circular economy principles into practical reality.

With nature as our mentor, we combine practical insights with scalable responses to humanity's greatest challenges. Our vision is economic, social and environmental prosperity without compromising the future of our planet. Our mission is to connect and empower a global community in business, cities and governments to create the conditions for systemic transformation.

More than 50 businesses are now part of our membership community (from large multinationals to active SMEs and innovative start-ups) with whom we co-create practical and scalable solutions, making the circular economy happen. In addition, we work with cities, governments, CSOs, NGO's, advisory boards and intergovernmental bodies.

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