

# Rotterdam Circulair: A city-wide approach

## Aim

Rotterdam Circular is an ambitious City-wide governance and business support programme aimed at circular economy approaches being 'standard practice' by 2030, and the City becoming 100% circular by 2050. This would make Rotterdam a leader in the circular economy field and a forerunner, even in the Netherlands, which is already seen as a 'circular hotspot' and centre for knowledge and innovation in Europe. Indeed, Rotterdam Circular falls under the National Agreement on the Circular Economy and the National Raw Materials Agreement, and the programme is aligned with work happening at central Government level and in other municipalities but is the most ambitious in terms of targets.

## Why and how?

Rotterdam Circular has been initiated, and is being led, by the Municipal Executive and by the Port of Rotterdam Authority. Drivers for the programme include a reduction in primary resource use and the creation of a healthier environment in the City.

Crucially, the political discourse around the potential of the circular economy for employment and job creation has been the key driver of the initiative, as the economic crisis of 2008 affected Rotterdam and its construction industry very badly. It is hoped that 3,500-7,000 jobs will be created through Rotterdam Circular by 2030.

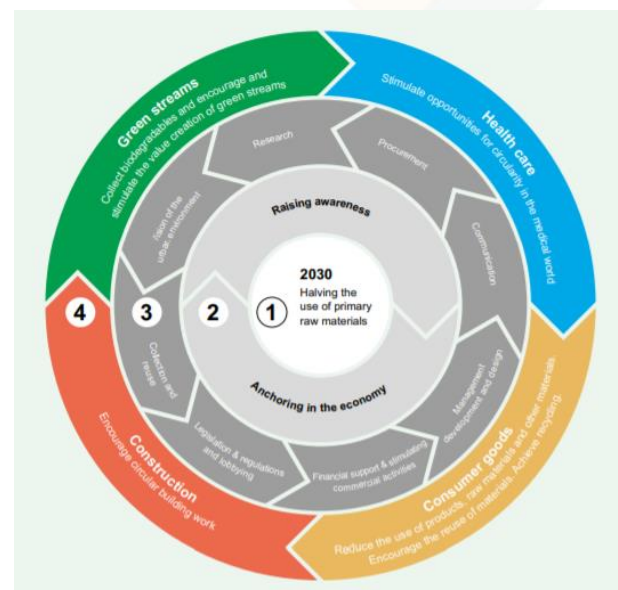
**Figure 1** represents how Rotterdam Circular is being delivered until at least 2023, when the current Municipality's executive period ends. Zone 1 shows the aim of the programme with Zone 2 highlighting the two key pathways to achieving the aim. Zone 3 outlines the tools being used and Zone 4 indicates the four sectors in which actions are being concentrated.

Particularly relevant to the Circular Yorkshire Lab work, is the aspect of 'Anchoring in the economy' in Zone 2. As part of this the Municipality are running an

'incubator policy', through which they hope to attract ~€700 million of circular investments from companies.

There are start-up and scale-up programmes in place to encourage innovation around circular economy such as the annual *CleanTechSummit*, which 'connects innovative companies and investors'. Companies can apply for support to, for example, apply for subsidies, put a waste stream in place, find funds, build consortium and conform with regulations or to lobby for change. The Municipality admits that venture capital is still limited but they are using investment funds to support innovators and incubators.

Incubator spaces within the City include *PlantOne*, which is focused on sustainable and innovative chemicals, RDM, which acts as an incubator for metal-related companies, and *BlueCity*.



**Figure 1** - From the Rotterdam Circularity Programme 2019 - 2023

## Blue City

**BlueCity** is an incubator space in a former swimming pool, which caters for 'innovative companies looking to exchange their residual materials'. Started in 2015 when the Tropicana building was bought by impact investor Wouter Veer, it focuses on waste and the concept of outputs from one company forming inputs for another. BlueCity offers start-up entrepreneurs space and networks to develop their ideas.

The space is known locally and used as an attraction for visitors and companies from all over the world, a circular biolab where prototyping and experimenting can take place, a provider of applied training in circular economy for students, an international resource sharing hub and an accelerator where entrepreneurs from the City and region can be connected to large companies and international businesses.



**Figure 2** – BlueCity incubator space in Rotterdam

**Fruitleather Rotterdam** is one of the organisations based in BlueCity. The organisation makes leather-like material from fruit waste. Their website states that 'the vision here at Fruitleather Rotterdam is not only to spread awareness of the food waste issue, but also to show how waste in general can be used in a positive way'.



## The port of Rotterdam

There is also a lot of activity around the Port of Rotterdam, relevant to circular economy and in partnership with the Municipality and businesses.

The Port has presented a 'three-step-roadmap' towards 2050.

- **Step 1** is 'characterised by enhancing resource- and energy efficiency; carbon capture, utilization and storage (CCUS); and developing a new infrastructure throughout the port area'.
- **Step 2** focuses on the implementation of a new energy system, switching to electricity and hydrogen (blue and green).
- **Step 3** consists of the 'realisation of a new raw materials and fuels system', requiring the development of an international waste hub, biomass hub and CO<sub>2</sub> hub.

The roadmap is based around four circular pathways:

1. Innovation ecosystem, stimulating the creation of start-ups, the advancement into scaling up and becoming established and the connection to the existing cluster.
2. Sorting and recycling, in particular, aimed at developing and implementing applicable technologies that turn waste into new products.
3. Industrial symbiosis, developing infrastructure and partnerships to exchange products and residual streams, like waste heat, steam, CO<sub>2</sub> and solid waste flows.
4. Carbon Capture, Utilisation & Storage (CCUS), using carbon emissions as a new and valuable feedstock for the chemical and other sectors.

There is a significant circular 'production district' being developed by the Port of Rotterdam in partnership with the Municipality, called Merwe-Vierhaven (M4H). The aim of this area is to connect and intertwine companies' raw material streams.

Current projects include the *Waste to Chemicals* consortium, which involved a €9 million initial investment from a group of companies who are exploring 'sustainable alternative solutions for non-recyclable wastes, converting waste plastics and other mixed wastes into new raw materials', and the award winning *Ioniqa* who are transforming all types and colours of PET waste into 'valuable resources for 'virgin-quality' new PET.

Individual entrepreneurs are not forgotten in the programme as the Municipality seeks to bring entrepreneurs together to build networks and facilitate joint projects. There is an initiative to work with entrepreneurs to evaluate policies, laws and regulations which may form barriers, and to support entrepreneurs to lobby for change around these.

## Successes and learning

Much of the buzz' around Rotterdam, points to the City as a place which is 'used to doing things differently', is bold, and is alive with entrepreneurial character. Situated within the broader context of The Netherlands as a leader in circular economy, with the relevant supportive policies is likely to provide opportunities for Rotterdam Circular to be successful.

Circular economy is not a new concept in the City. In fact, baseline assessments for Rotterdam Circular showed that 10% (31,000) of jobs in the City are already circular compared to the national average of 8.1% and that, of the ~43,000 companies registered, more than 5,700 directly contribute to the circular economy.

The partnership between the Municipality and the Port of Rotterdam appears to offer many advantages in developing a circular economy in the City. Both have extensive specialised knowledge around waste and raw materials regulations, as well as ambitious projects and the Port holds a favourable position, as a global logistics and industrial hub to attract a broad range of stakeholders. In addition, as a partnership, they are powerful enough to attract Government and European subsidies to develop these ideas.

The Port of Rotterdam roadmap mentions progress being facilitated by 'a positive momentum with policymakers and industry front-runners moving forward towards circularity at all levels: Europe, the Netherlands, regions, municipalities and local players'.

## Next steps and building on successes

The Rotterdam Circulair programme focuses on the period from 2019-2023, which coincides with the current Municipality's executive period. However, the aims to be 100% circular by 2050 suggests the work will carry on beyond this timeframe.

The Port of Rotterdam Authority, in particular, is focusing on building partnerships for new pilots and projects that drive the move to a more circular port, innovative technology development for new waste-to-

value opportunities and solutions to further develop policies and regulatory matters in support of the circular economy'.



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