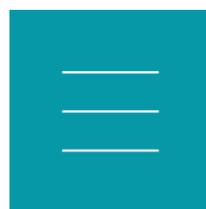




# CIRCULAR FLANDERS

Together towards a circular economy

Dear reader, you can browse through this document slide by slide using the arrows in the bottom right corner, or navigate straight to any chapter using the table of contents on page 4 or the drop-down menu in the top right corner of your screen.



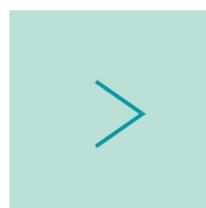
### **DROP-DOWN MENU**

Access the **main menu** by clicking the button in the top right corner of your screen and go straight to any chapter.



### **PREVIOUS**

Click the button in the bottom right corner of the screen or use the left arrow key to go to the **previous page**.



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Click the button in the bottom right corner of the screen or use the right arrow key to go to the **next page**.



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“Flanders is already in the lead when it comes to closing the material cycles. With the continued transition to a circular economy, Flanders is creating prosperity and well-being in a smart, innovative, sustainable manner, in which everyone is included. That is why I am actively supporting the partnership with Circular Flanders.”

**Joke Schauvliege**

Flemish Minister for  
Environment, Nature, and Agriculture



Joke Schauvliege

“Our industrial transformation is not only about efficiency, digitalisation, or manufacturing small-series specific production runs, etc. Sustainability is becoming increasingly important in (operational) management. That’s why the transformation to Industry 4.0 is so closely tied in with the evolution towards a circular economy for all companies.”

**Philippe Muyters**

Flemish Minister for Employment,  
Economics, Innovation, and Sports



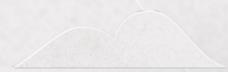
Philippe Muyters

**START  
HERE**





01  
**IN  
BRIEF**



Circular Flanders is the hub and the inspiration for the Flemish circular economy. It is a partnership of governments, companies, civil society, and the knowledge community that will take action together.

These organisations are the core of our partnership. Each one has committed to carrying out a specific action.



It is high time to reconsider our waste-generating economy. We must use our materials more intelligently so that they maintain their value. This can be done by repairing, reusing, and recycling more, but most especially by designing products and services so that they are completely waste-free. This is how we uncouple our prosperity and our wellbeing from the need for increasingly more resources.



Circular Flanders is the hub of the Flemish circular economy. It is a partnership of governments, companies, civil society, and the knowledge community that will take action together.

The Government of Flanders has set the circular economy as one of the seven transition priorities and appointed the OVAM (the Public Waste Agency of Flanders) as the initiator of Circular Flanders. The operational team, which is responsible for the day-to-day operation, is embedded in the OVAM.

Initially, our operations will focus on three themes. We will launch and support various projects within these themes, with an emphasis on action and impact in the field.

**THE 2017-2018 THEMES ARE:**

- **The circular city**
- **Circular business strategies**
- **Circular purchasing**

This publication introduces the operation of our unique partnership between governments, companies, civil society organisations, and knowledge institutions. In the second chapter, we will briefly demonstrate how national and international governments are implementing the circular economy. The third chapter will explain how Circular Flanders operates and what actions the partnership will be undertaking. We will close with a bit of history that explains how we came to be in our current partnership.





02

# WHY A CIRCULAR ECONOMY?

## A circular economy?

In our current linear economic system, resources are used in products, which are destroyed at the end of their usefulness. In contrast to this, the circular economic system focuses on **the maximum reuse** of products and resources with a **minimal loss of value**.

### WHY A CIRCULAR ECONOMY?

## LINEAR MODEL HAS REACHED ITS LIMITS

Since the Industrial Revolution, our economies have been running on a model in which resources are turned into products that are thrown away after they're no longer useful – a linear model that is based on the supposition that resources are abundantly available, easy to get, and can be cheaply thrown away. But this model has reached its limits.

The global middle class is expected to increase by three billion people in the coming decades. China and India, for example, will double their income per capita 10 times as fast for 200 times as many residents than England did during the Industrial Revolution. So, the demand for resources will only continue to grow at a time in which finding and extracting new resources will be growing increasingly more difficult. The direct consequence is that resource prices will fluctuate significantly. In the long term, certain crucial, raw resources will probably become scarce and expensive. And we haven't even covered the environmental impact of the extraction. This makes everything about our traditionally linear lifestyle unsustainable.

# BORN IN 2010:

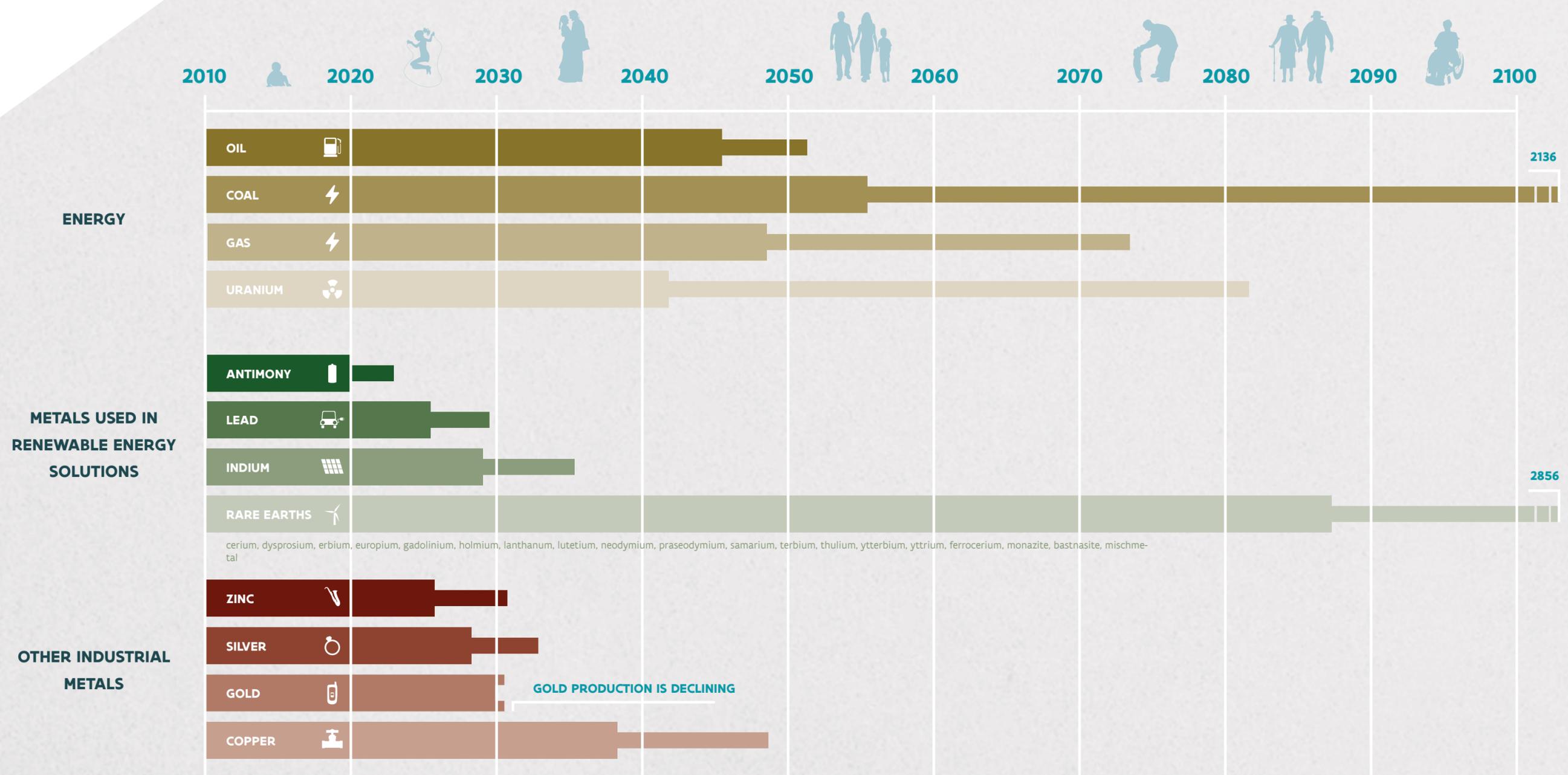
## How much is left?

YEARS REMAINING IF PRODUCTION CONTINUES TO GROW AT CURRENT RATES



YEARS REMAINING IF PRODUCTION REMAINS STATIC

CALCULATIONS BASED ON KNOWN RESERVES:



Infographic by Peter Stouthuysen

Sources: US Geological Survey, Adroit Resources, World Bureau of Metal Statistics, International Copper Study Group, World Gold Council, Minormetals.com, Roskill Nickel Report, Cordell et al (2009), Smil (2000), Silver Institute, World Nuclear Association, International Lead and Zinc Study Group, Wikipedia. Source (fossil fuels): BP Statistical Review of World Energy 2010.

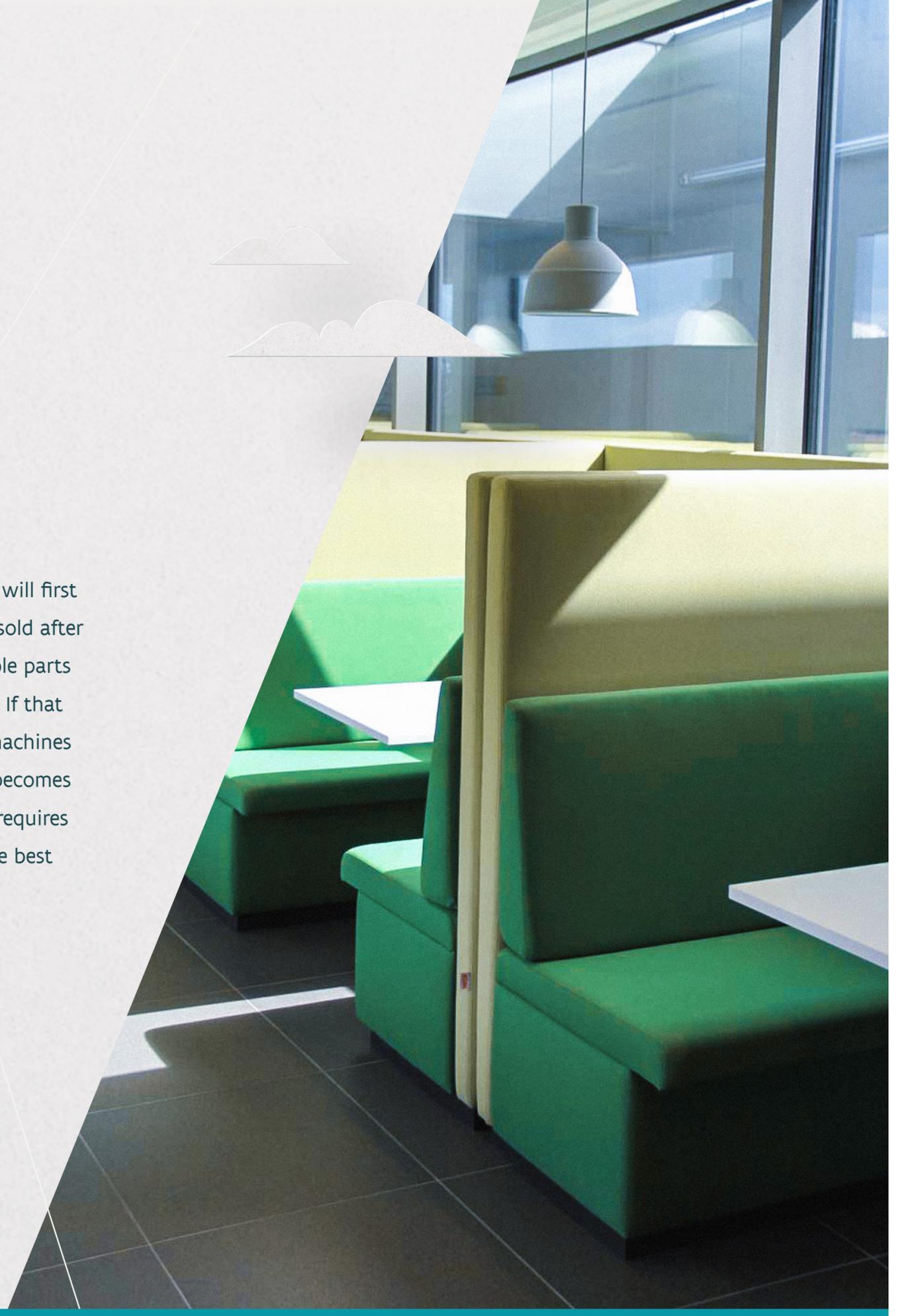
WHY A CIRCULAR ECONOMY?

## THE CIRCULAR ECONOMY AS A STRATEGIC ANSWER

Numerous strategies are applied within a circular economy in order to continue to use materials and products in the economy in as high-quality a manner as possible. They are repaired, have a high second-hand value, are **upgradeable**, and can easily be taken apart and turned into new products. The selected materials are recycled or bio-based at conception and are recyclable or biodegradable at end-of-life.

The circular economy wants to keep everything that is of value valuable. Nothing can be lost. A washing machine, for example, will firstly last longer in a circular economy. If it does break down, or it no

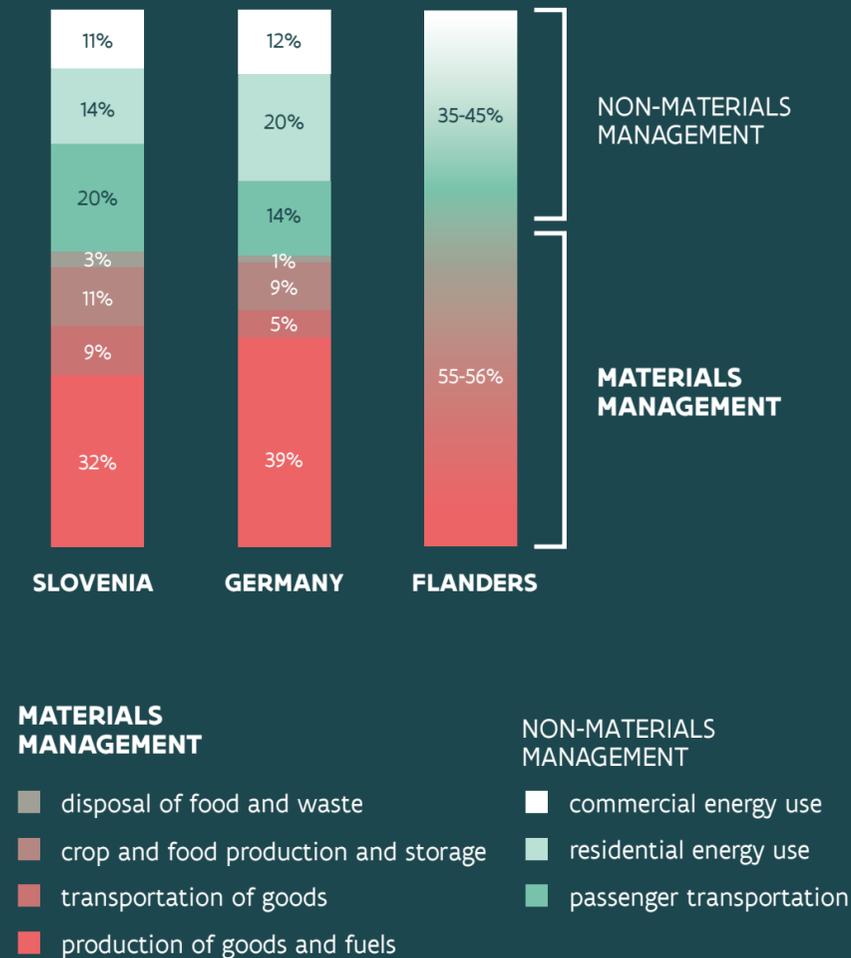
longer complies with the standards, then it will first be repaired or upgraded. It may even get resold after that. If this is no longer possible, the reusable parts will be used to manufacture new machines. If that is no longer possible, the materials in the machines will be recycled into new materials. Waste becomes resource. This is why the circular economy requires customised work: sometimes recycling is the best option, other times, repair.



## Materials:

major source of greenhouse gases

### SHARES OF EMISSIONS PER COUNTRY



### WHY A CIRCULAR ECONOMY?

## CONTRIBUTION TO THE CLIMATE OBJECTIVES

The Climate Agreement was concluded in Paris at the end of 2015. In that agreement, 195 countries committed to restricting global warming to well under 2° Celsius, with the ultimate goal of restricting this to 1.5°.

The climate challenge is often reduced to an energy problem. According to this vision, we can then also solve the problem by restricting the demand for energy and “greening” energy generation.

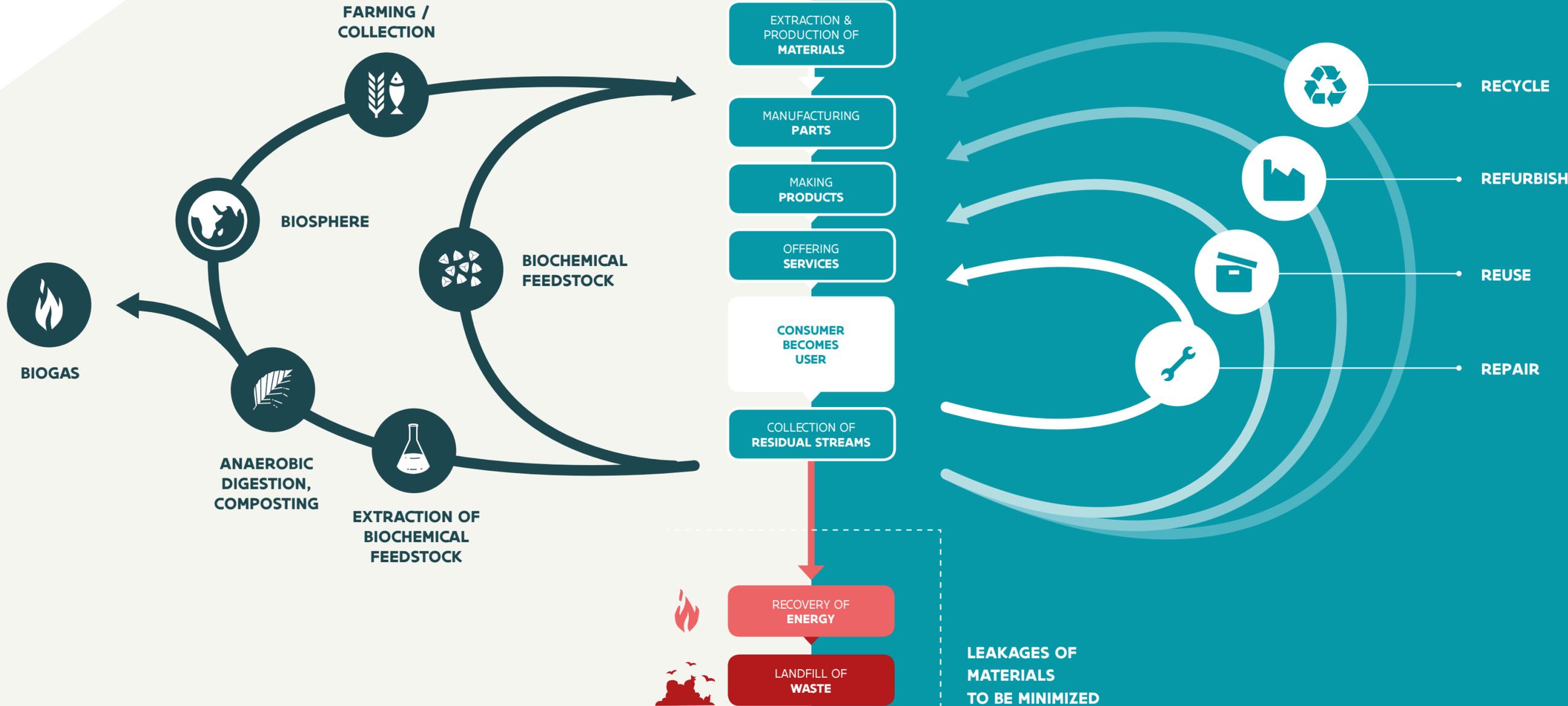
But we now know that the high energy demands are caused to a major extent by the way in which we deal with materials. The first exploratory calculations based on data from the Flemish energy balance sheet<sup>1</sup> for 2014 showed that no less than 2/3 of the gross domestic energy consumption in Flanders can be attributed to material-related activities.

Because of the strong link between materials and the climate, the circular economy can kill two birds with one stone: use scarce resources better while simultaneously avoiding high amounts of CO2 emissions.

# THE CIRCULAR ECONOMY

## BIOLOGICAL CYCLE

## TECHNICAL CYCLE



## WHY A CIRCULAR ECONOMY?

# ECONOMIC GAINS

From a purely economic point of view, the advantages of this change speak volumes. If we make the resources in the entire value chain more efficient, we can reduce the need for materials in Europe by an estimated 17 to 24% by 2030<sup>2</sup>. The European business world could save 630 billion euros annually by using resources better<sup>3</sup>. By getting rid of the materials costs and creating new products, services and value can grow the EU's GDP by 3.9%<sup>4</sup>. This means that the circular economy could create 1.2 to 3 million extra jobs by 2030.

Indicative estimates of the economic benefits of the circular economy for Flanders points to a savings in material costs of 2 to 3.5% of the Flemish GDP and the creation of 27,000 additional jobs, ranging from high-tech to lower-skilled<sup>5</sup>.

## RESOURCE-EFFICIENCY

### WHY?



#### MICRO OF AN AVERAGE COMPANY

SOURCE: THE OVAM AND VLAIO MATERIALS SCAN  
[www.materialenscan.be](http://www.materialenscan.be)



**18%** of the purchased resources are lost during production



**19%** of the production costs are lost this way to lost purchasing costs, lost manufacturing costs, and waste invoices



#### MACRO: THE EUROPEAN ECONOMY

IN A CIRCULAR SCENARIO FOR THE EUROPEAN ECONOMY (MCKINSEY, EU COMMISSION)



<sup>2</sup> McKinsey: Mobilizing for a resource revolution (<http://bit.ly/2hwwvqf>). • <sup>3</sup> Communication from the European Commission: Towards a circular economy: A zero waste programme for Europe (<http://bit.ly/WOptj5>). • <sup>4</sup> See note 1. • <sup>5</sup> SuMMa: Verkennende analyse van het economisch belang van afvalbeheer, recycling en de circulaire economie voor Vlaanderen (Exploratory analysis of the economic importance of waste management, recycling, and the circular economy for Flanders) (<http://bit.ly/1iXDvYg>).



03

# TRANS- POSITION INTO POLICY

If we want to maintain our prosperity, then we must sustainably change the way we use our energy and resources. The change to a circular economy requires a comprehensive systematic change, with innovation that is not limited to technology, but which also extends to the organisation, society, financing methods, and the policy. Action will be taken at practically every level in terms of policy.

#### TRANSPOSITION INTO POLICY

## UN · SUSTAINABLE DEVELOPMENT GOALS

In August 2015, 193 countries reached an agreement on new, global objectives for sustainable development: the **UN's Sustainable Development Goals** (SDGs). A total of 17 goals were formulated. The transition to a circular economy contributes to the realisation of several of these SDGs:

- **SDG 6** Ensure access to sustainable management of water and sanitation for everyone
- **SDG 8** Promote inclusive and sustainable economic growth, employment, and respectable work for everyone (e.g. break the connection between economic growth and environmental decline)
- **SDG 9** Build resilient infrastructure, promote sustainable industrialisation, and encourage innovation (e.g. material-efficient technologies and industrial processes)
- **SDG 11** Make cities inclusive, safe, resilient, and sustainable (e.g. circular city)
- **SDG 12** Ensure sustainable consumption and production methods (e.g. cut the global food losses and waste in half, circular public contracts)
- **SDG 14** Protect oceans, seas, and maritime resources, and use these sustainably (e.g. prevent marine litter)
- **SDG 15** Protect biodiversity and ecosystems (e.g. integrating the value of ecosystem services into the planning and development processes)

TRANSPOSITION INTO POLICY

## EU · CIRCULAR ECONOMY PACKAGE

The European Commission published the updated circular economy package on 2 December 2015. The package consists of an action plan “Closing the loop – An EU action plan for the Circular Economy” and a proposal for reviewing the six waste directives (Waste Framework Directive, landfilling waste, packaging waste, end-of-life vehicles, batteries, and electronic waste).

The waste proposals stipulate a clear long-term vision for recycling and reducing landfilling. The action plan for the circular economy adds to this with measures that tackle all phases of a product’s lifecycle, from production and consumption to waste management and the market for secondary resources. The action plan also contains several measures targeted at market obstacles in specific sectors or material flows (plastics, food losses, critical resources, construction and demolition) as well as horizontal measures on, e.g. innovation, investments, and the exchange of good practices. There where the Action Plan continues to depart from the closing of the materials cycles as a basis of the circular economy, it simultaneously emphasises the reuse of water and the contribution of the bio-economy to a circular economy.

[Laser Cladding Venture manufactures, repairs, and extends the lifespan of metal components \(like industrial drill chuck, axles and shafts, gears, etc.\) with digitally controlled technology.](#) →



# FLANDERS · TRANSITION PRIORITY

Steps have also been taken in Flanders to create a policy that promotes the transition to a circular economy. The Government of Flanders took the most recent step with its “Vision 2050” vision for the future.

## BY 2050, THE GOVERNMENT OF FLANDERS WANTS TO CREATE A REGION THAT:

- is social, open, resilient, and international;
- creates prosperity and wellbeing in an innovative, sustainable manner;
- includes everyone.

In order for the Vision 2050 objectives to succeed, the Government of Flanders is working on seven transition priorities that must make it possible for the necessary changes to be made faster. The circular economy is one of these seven priorities. Circular Flanders will strengthen this transition from within the OVAM. Ministers Muyters and Schauvliege share joint responsibility for the circular economy.

Circular Flanders is the result of an evolution in policy that has been going on since 2006.

- **2006:** Plan C, the Flemish Transition Network for Sustainable Materials Management, is created as a thinktank and informal network in the heart of the OVAM.
- **2010:** sustainable materials management is put on the European political agenda during the Belgian EU presidency.
- **MEDIO 2011:** The Flemish Government lists sustainable materials management as 1 of the 13 major social challenges for Flanders in the context of Flanders in Action. The OVAM is appointed to be the architect of the transition project.
- **28 MARCH 2012:** The Plan C non-profit organisation is established.
- **1 JUNE 2012:** The Materials Decree comes into effect to replace the Waste Decree.
- **6 JUNE 2012:** The Round Table on Sustainable Materials Management is solidified in the public-private action plan Agenda 2020. Plan C, SuMMa,

and Agenda 2020 are brought together under the umbrella of the Flanders’ Materials Programme (VMP).

- **DECEMBER 2014:** the EIT selects the consortium that has been significantly shaped by Flanders in order to build up the KIC EIT RawMaterials.
- **DECEMBER 2015:** The European Commission launches its Circular Economy package, consisting of an action plan and a proposal for the revision of the six waste directives.<sup>6,7</sup>
- **EARLY 2016:** OVAM receives the Circular Awards for the VMP.
- **25 MARCH 2016:** The Government of Flanders approves the transversal policy paper, “Vision 2050, a long-term strategy for Flanders”. The transition towards the circular economy is one of seven transition priorities<sup>8</sup>.
- **1 JANUARY 2017:** Circular Flanders (Plan C + SuMMa + VMP) is launched.

A more detailed overview can be found in section 6, “What came before”.



04

# OUR APPROACH

#### OUR APPROACH

Circular Flanders is the hub, the inspiration, and the matchmaker for the circular economy in Flanders. It is a partnership of governments, companies, civil society, and the knowledge community that will take action together.

But Circular Flanders is also a broader movement. Of citizens, entrepreneurs, civil society organisations, local administrations, etc. that want to set up initiatives in the circular economy. We want to actively connect and support them.

The Circular Flanders partnership is supported by a multidisciplinary team embedded in the OVAM.

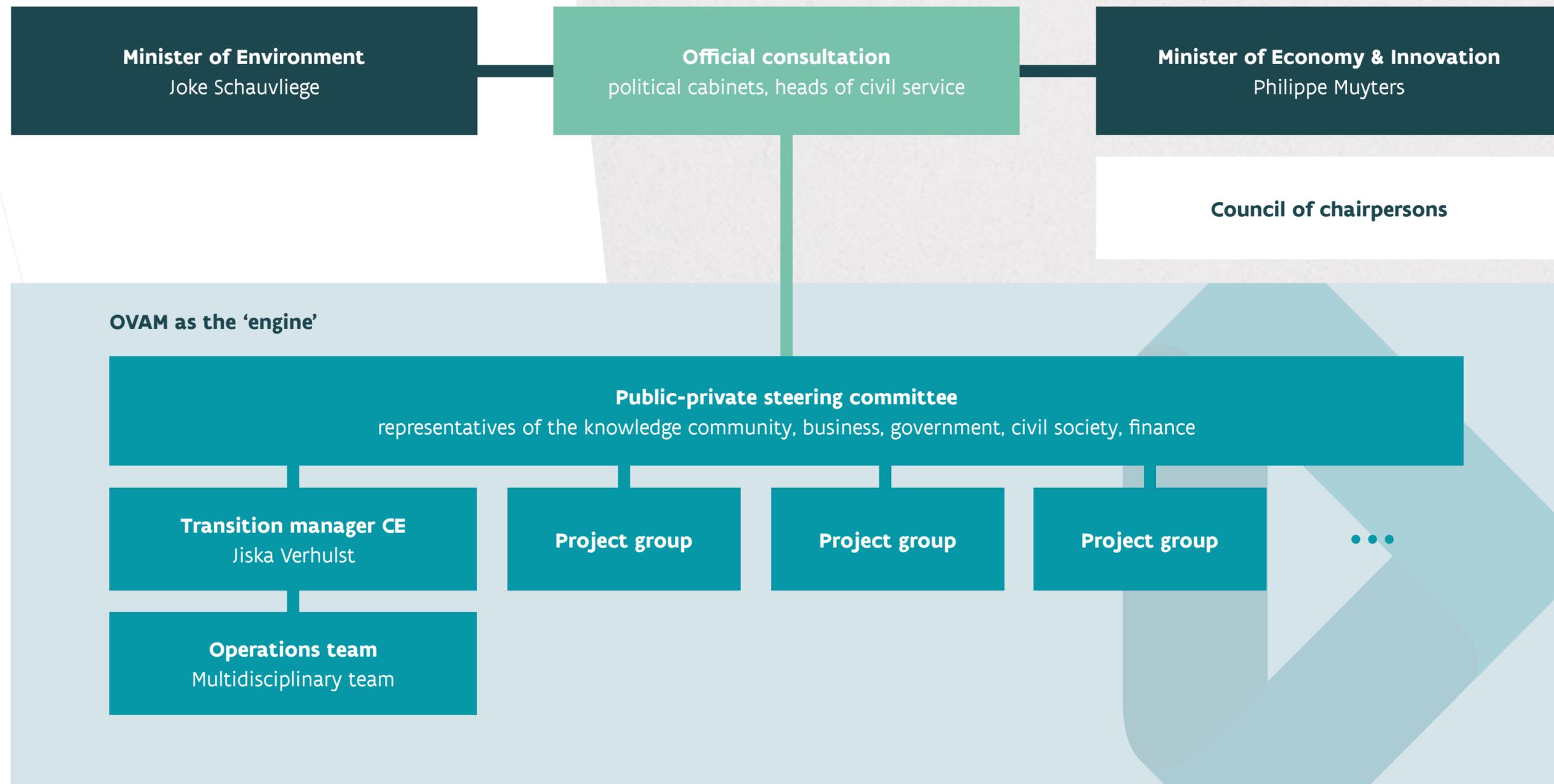
Repair Cafés are freely accessible meetings focusing on repairing things (together). Expert volunteers with loads of repair knowledge and skills will help the participants find their way.



# A GOVERNANCE

Hoe zetten we de bakens uit?

TRANSITION SPACE



## OUR APPROACH

# B ACTION

### What we are going to do

Encouraging a circular economy, requires action on many fronts simultaneously. Starting from the Vision 2050, the transition can only succeed if we develop a strong, joint ambition over the long term. We must then flesh out this ambition with specific actions and initiatives in the field in a results-oriented manner.

These actions and initiatives arise from the various partnerships. It could, however, be ongoing experiments that help the transition to progress and which, for this reason, need to be continued. Experimenting, daring (and daring to fail), implementing, following up and learning, scaling up and embedding, all form the foundations.

We summarise this in six core activities for Circular Flanders:

### 01 NETWORK » We connect and cocreate.

You cannot create a circular economy by yourself. Cooperation and shared commitments from our partners – both public and private – is crucial here. We bring a variety of partners together to tackle the challenges of the circular economy.

### 02 KNOWLEDGE » We build and share our knowledge.

The Policy Research Centre for the Circular Economy (CE Centre), a consortium of scientists, is carrying out research into various aspects of the circular economy. We ask targeted, policy-relevant research questions and share the knowledge we acquire.

### 03 INNOVATION » We enable.

We encourage and speed up innovation and entrepreneurship towards the circular economy using targeted tools. We consider “innovation” to be a broad concept: from technological innovation, innovative product design, revenue models, process innovation, and systems of requirements to new forms of collaboration.



# B ACTION

## What we are going to do

Encourage a circular economy, take action on many fronts simultaneously. Starting from the Vision 2050, the transition can only succeed if we develop a strong, joint ambition over the long term. We must then flesh out this ambition with specific actions and initiatives in the field in a results-oriented manner.

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We summarise this in six core activities for Circular Flanders:

## 04 LAB » We make it happen.

We assist pioneers and pragmatic go-getters. Using challenges (collective trajectories to encourage entrepreneurs to go that extra mile with their ideas), learning programmes in sectors, and demonstration projects, we try to reduce the risk of experimentation (de-risking) and encourage tests in the circular economy.

## 05 POLICY » We support.

We focus on aligning and connecting with the various policy agendas that are relevant for the circular economy at the local, Flemish, federal, and European/international level. We are the point of contact for these governments within the Flemish circular economy. We also support directional and supporting policy.

## 06 EMBEDDING » We make it grow.

We ensure that the principals and best practices of the circular economy are utilised and embedded within the Flemish companies, civil society organisations, education, local administrations, and citizens. We encourage citizens and companies to accept their own responsibility within the circular economy. Good examples of citizen initiatives could be inspirational here.



## OUR APPROACH

# B ACTION

### **'our own initiative' and 'supporting'**

On the one hand, we interpret our six core activities at our own initiative as an offer. We start up projects that we feel are important ourselves as a partnership. These are our so-called pillars.

On the other hand, we also free up time and resources to support companies, organisations, citizens, etc. within our vision and ambitions in their circular plans.

Naturally, the pillars offered and the support are not separate from one another. We always look for links between and advantages for both sides.

### **01 OWN INITIATIVE: THREE PILLARS**

Key to our approach are several pillars with a great deal of potential and which bridge and bring together different sectors. For 2017-2018, these are circular purchasing, the circular city, and running circular businesses. We will be proactively working with partners and projects on these pillars. For each of them, we look at where we must be by 2050 based on the Vision 2050 and what this then means specifically for the coming six years in terms of the objectives and indicators. The operational team does the coordinating.



## OUR APPROACH

# B ACTION

### **‘our own initiative’ and ‘supporting’**

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## 02 SUPPORT

In providing support, we respond to the needs and requests of the various stakeholders. The support for the operational team must fit within our vision and ambition: we maintain our focus and try to connect the support and this focus, or we make very targeted referrals. The initiative here lies expressly on the stakeholders themselves. We support circular economy projects, upon request, which deal with materials, water, energy, space, and food.

- Together, we look for places that they could take in the circular economy;
- We make them visible, integrate them into our communications, and make new communication products;
- We provide advice, brainstorm together with the client, and provide information on comparable initiatives;
- We provide points of reference using tools and publications;
- We make referrals to the relevant partners, like innovation centres and spearhead clusters, and utilise our network where possible;
- We help the client, based on our expertise, to work on proposing specific objectives and actions.

Our role as an info point is key here: anyone can contact our operational team for a personal conversation. This is how we try to inspire with a low threshold, and make these ideas concrete and help them progress.



# PILLAR 1 CIRCULAR PURCHASING

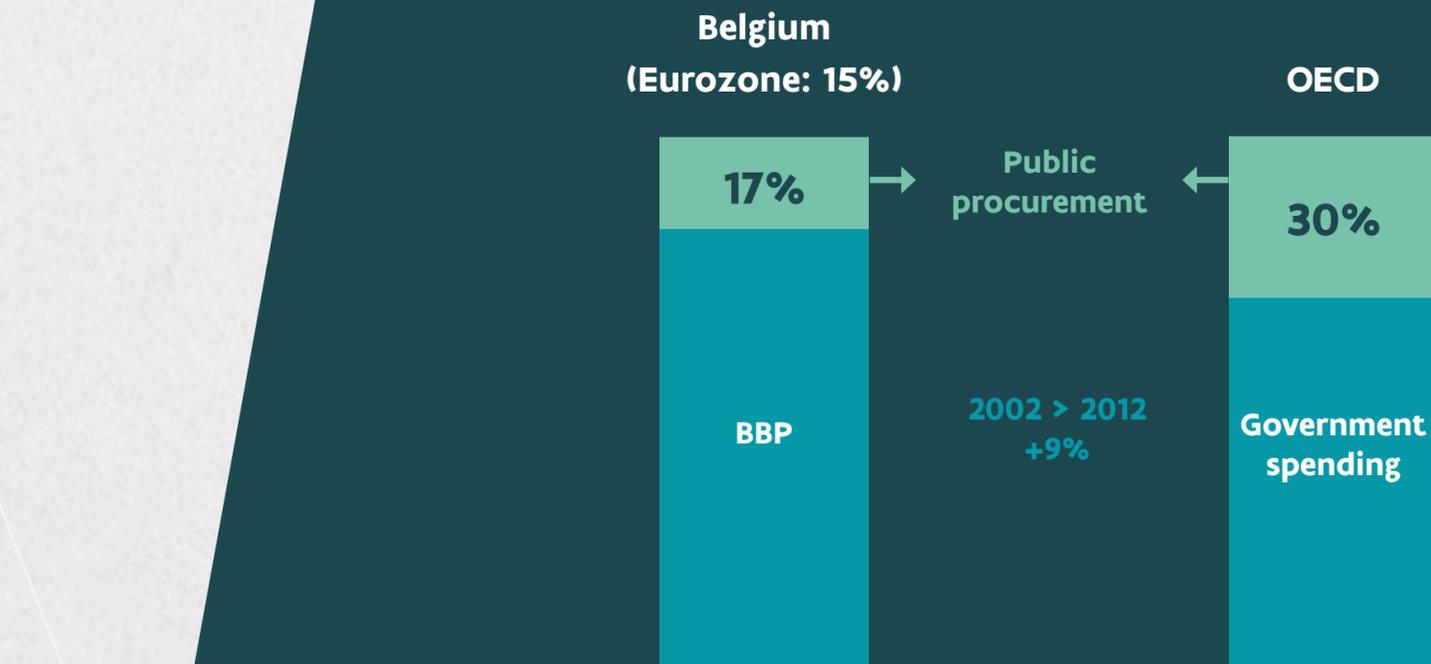
## Why?

Circular purchasing is the purchasing of products or services that are created and offered according to the principles of the circular economy, and which are processed further after their use according to these same principles.

Governments, companies, and other organisations can give a boost to circular products and services through their purchasing policy. Circular purchasing is therefore a major driving force in achieving a circular economy.

## What do we want to achieve?

We want to promote circular purchasing projects and develop, share, and disseminate knowledge of circular purchasing within a learning network. We are aiming at the structural integration of circular thinking within the purchasing processes of governments and companies in the medium term.



Value of global public contracts  
(World Trade Organisation):

**€ 1,300,000,000,000**

The economic importance of public procurements alone is already enormous. They are good they account for approximately 17% of the Belgian gross domestic product (GDP). This is an average of 15% for the Eurozone. Within the OECD, public procurements are account for an average of 30% of all public spending. At a global level, this is equal to procurements worth €1.3 trillion.



# PILLAR 2 THE CIRCULAR CITY

## FUTURE



**2020: 8 out of 10 Europeans live in a city**

## IMPACT



**Cities: account for 69% of the CO2 emissions (EU)**

## REACH



**1,339 inhabitants per km (Flemish cities)**

Cities attract a lot of people - and opportunities - within a compact region. They have a major impact on the environment and their importance will only increase in the future.

## Why?

Cities have a lot of benefits as the experimental foundation for the circular economy.

On the one hand, there is the city of bricks, and asphalt, and some green: the physical city. The city is compact, and therefore makes the perfect laboratory for experimenting with the (re)use of space or buildings, or for carrying out pilot projects on energy, water, logistics, or food flows.

On the other hand, there is the city of working, living, and experiencing: the city as the social-economic fabric. The city brings a wide variety of people together, each with their own goals, drives, and “dadas”. Therefore, it is the perfect laboratory for bottom-up citizen initiatives, creativity, and innovation for the circular economy.

# PILLAR 2 THE CIRCULAR CITY

## What do we want to achieve?

In the medium term, we want to embed the circular economy in the minds and actions of urban administrators, citizens, and entrepreneurs. We want to provide Flemish cities with a connective story in which they can each make their own mark.

We want to give wings to the circular initiatives of civil society and citizens. By supporting them, connecting them, and giving them visibility.

Reburg is an interactive, virtual city in an impending circular future. The project must make the theoretical ideas behind the circular economy more concrete and open them up for discussion.

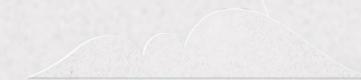


## PILLAR 2 THE CIRCULAR CITY

### Specifically

#### A look at the actions by Circular Flanders and partners:

- Together, we develop a **vision on the circular city**. We scan, discuss, and describe societal trends that are linked to the circular economy. We use the results to create a series of trend maps, which each cover an aspect of the circular future (living, working, mobility, etc.). These maps can be used freely by anyone who wants to start building on a circular future.
- We continue to develop the **visualisation** of the Circular City of 2050, project Reburg [[www.reburg.world](http://www.reburg.world)], using new 3D animated movies.
- The OVAM owns a site in Mechelen that it is currently remediating: **the Potterij**. Together with the City of Mechelen, Sociaal Huis Mechelen, Circular Flanders, and the Thomas More University-College, the OVAM wants to breathe fresh life into the Potterij in Mechelen as a 'circular laboratory'. It's a place where various initiatives with a view towards a more sustainable future are supported and where cross-pollination between various activities can occur.
- We work together with the Transition Network for the Civil Society to create a **roadshow** on the circular/sustainable and socially responsible city of the future for citizens in cities and municipalities.
- We have research carried out on how **smart city applications** (data and connectivity) can optimise the various flows in a city.
- A circular city, that uses materials and space intelligently, will also be able to significantly reduce its greenhouse gas emissions. This is why we want to strongly embed the principles of circular economy in the **local climate policy**.



# PILLAR 2 THE CIRCULAR CITY



## Getting more out of our space

How can the characteristics and assets of an area (city or region) be optimally utilised to create a stronger local circular economy that provides ecological, social, and economic added value?

It's also useful in smaller-scale projects, like a neighbourhood or industrial site, or for remediation projects, to research how the available space can be optimally utilised by taking multifunctionality, the possibilities for symbiosis and integration with the environment into account.

Various stakeholders are working on the opportunities of 'circular space':

- **OVAM - BACK IN CIRCULATION (THE POTTERIJ)**
- **Team Flemish Government Architect - ANTWERP CIRCULAR CITY - URBAN SYSTEM COAST 2100**
- **Department of the Environment - T.O.P. Noordrand**

← The goal of the Urban System Coast study is to develop a sustainable future for the Belgian coast through design-based research.

## PILLAR 2 THE CIRCULAR CITY

### Reburg: what's it like to live in a circular city?

Because the circular economy is all too often an issue that is not directly of interest, we are building Reburg, a virtual city that demonstrates what it could be like to live, work, and interact in a circular future. We bring the future to life using stories, images, films, presentations, and even a game.

Reburg is the framework for a series of workshops in which participants reflect on the city's future scenarios. After a successful transition festival on the Circular Economy, Team Flanders Government Architect will go on the road with the Reburg workshop model. The network will continue to develop the workshop further as a roadshow through cities and municipalities to get citizens to reflect on a sustainable, fair future.

More info on [www.reburg.world](http://www.reburg.world) and [www.transitienetwerkmiddenveld.be](http://www.transitienetwerkmiddenveld.be)

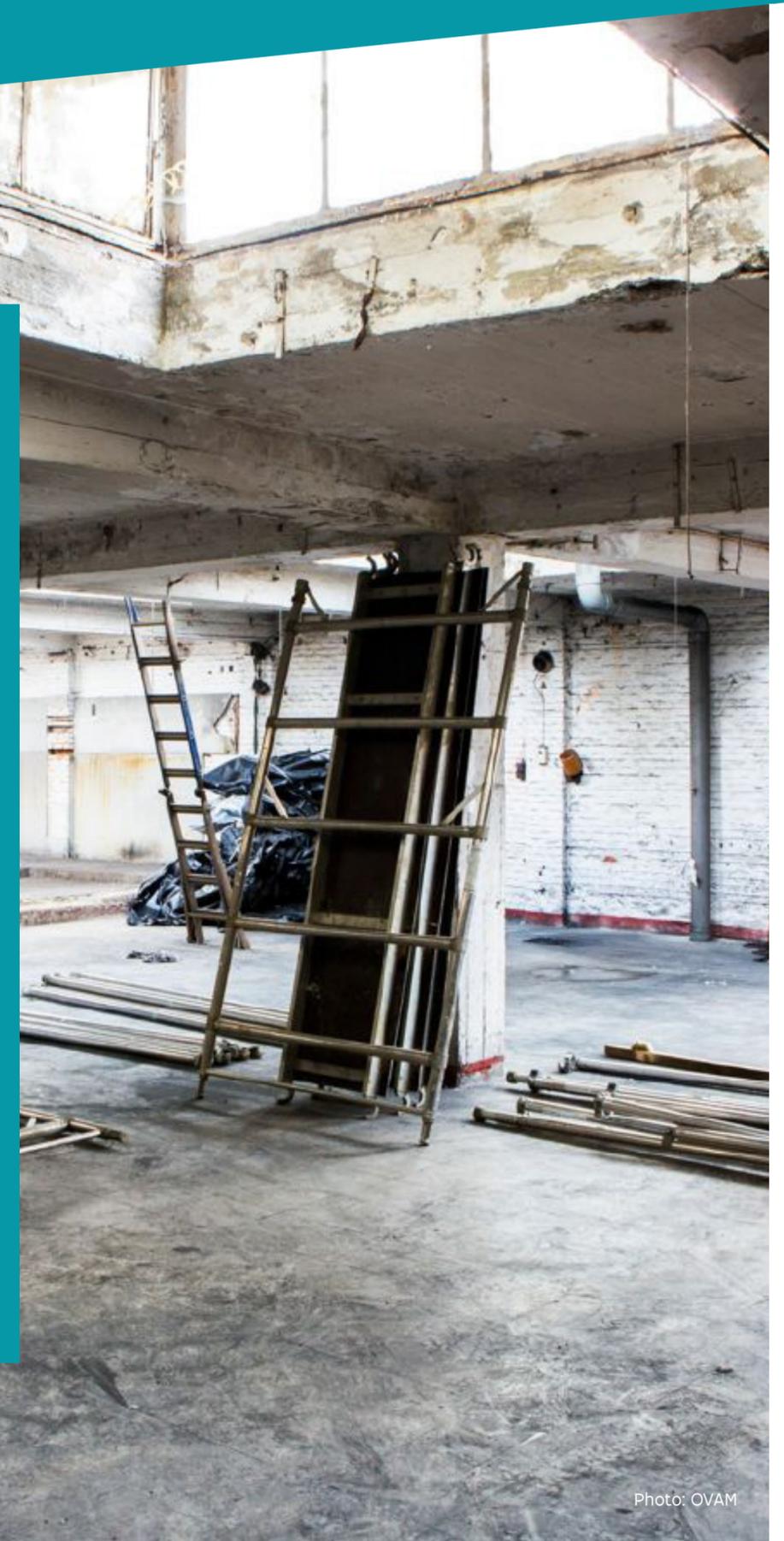
### Future-oriented construction

Flanders is currently not focusing enough on “change” when building. Our society and technology is evolving at an ever-more rapid pace: if a building cannot respond to these evolutions, then it will soon be in need of an expensive renovation or demolition. With a great deal of material and economic loss as a result. That is why we must take the fourth dimension, “time”, into account as a building design parameter in a circular economy.

There has been a lot of consideration of this aspect going on: buildings as resource banks, reversible buildings or buildings that can be disassembled, change-oriented or flexible construction, etc. Among others, the Environment Department, the OVAM, the Flemish Construction Confederation, Kamp C, etc. are leading the way towards actively experimenting with these new, future-oriented building methods.

More info on [www.ovam.be/veranderingsgerichtbouwen](http://www.ovam.be/veranderingsgerichtbouwen)

The Potterij site as it is today. The OVAM wants to build a major circular laboratory here. →



# PILLAR 3 RUNNING CIRCULAR BUSINESSES

What would an improved resources-efficiency yield for Flemish businesses?

**3 - 6 billion euro**  
annually

**2 - 3,5%**  
OF THE FLEMISH GDP ANNUALLY



**INCREASED  
COMPETITIVENESS**



**SECURE  
PROVISIONING**



**POTENTIALLY  
27.000 new jobs**

## Why?

It's no simple feat to completely close a loop within a single company. Usually, the circular economy requires new collaborations between companies. These are often surprising and run through the entire value chain and surpass sector boundaries. On the one hand, companies must consult with their parts and resources suppliers in order to be able to use recycled, recyclable, reusable, or bio-based materials, for instance. And on the other, they must also make agreements with middlemen or shop chains to organise repairs, rentals, upgrades, or returns, for instance.

In addition, there is a need to develop or apply new technologies. For example, sensors that can monitor the condition, use, and location of a leased device. Or new materials or processes that can replace substances that come from non-renewable sources.

# PILLAR 3 RUNNING CIRCULAR BUSINESSES



The potential economic, societal, and ecological benefits of a well-thought-out and successful circular business model are more than worth the investments. But to make those investments possible, a supporting framework, knowledge, and skills are required.

Circular Flanders wants to help create a favourable climate for this. To ensure that circular strategies are accepted by entrepreneurs, we are focusing on:

- 01** all phases of the innovation funnel: from raising awareness and generating ideas, to innovation and implementation, and right up through the launch and valorisation;
- 02** innovation in the following: core technology, assistive technology, revenue models, product design, and collaboration models.

## What do we want to achieve?

In the medium term, we want to bring the circular economy right out onto the company floor in a significant portion of Flemish businesses.

← [w.r.yuma is a Flemish start-up that uses recycled vehicle dashboards, PET bottles, and bamboo to make sunglasses using 3D printing.](#)

# PILLAR 3 RUNNING CIRCULAR BUSINESSES

## Specifically

### A look at the actions by Circular Flanders and partners:

- We develop **training modules, guides, and tools** on the circular economy tailored to specific target groups (e.g. accountants, lawyers, officials, environmental coordinators, financiers, etc.) and study programmes (designers, architects, engineers, economists, technicians, etc.).
- We are building up a **new case database** containing good Belgian examples of circular businesses.
- We are giving Circular Flanders a place as a **specialised info point for doing circular business** within the ‘Strong Entrepreneurship Network’ of the agency Flanders Innovation & Entrepreneurship..
- We assist individual starters, innovators, companies, and organisations that are looking for information on the circular economy, for a sounding board to bounce their circular idea off of, or potential new, interested partners.
- Together with relevant partners like the VDAB, SERV, the Department of Education, etc., we are continuing to build up knowledge on jobs in the circular economy. We solidify which jobs could grow in importance and which competences we need for this in Flanders.
- Putting the circular economy into practice differs from sector to sector. That is why federations like Agoria (technology), essenscia (chemistry, plastics, and life sciences), Fevia (nutrition), and the Flemish Construction Confederation are taking the initiative to build up and share sector-specific knowledge for their supporters.
- Together with the “Interdepartmental Working Group on Bioeconomy”, which unites over a dozen government bodies, Circular Flanders clarifies the many links between Bioeconomy and the circular economy. We will develop communication products together.



# PILLAR 3 RUNNING CIRCULAR BUSINESSES

- Circular ideas sometimes clash with existing regulatory frameworks. We are working on **preconditions, low-regulation zones, and experimental zones** to make circular innovation possible. We will fine-tune this with other relevant authorities (with Flanders, Belgium, and the EU) which can help ensure that policies get adapted over time.
- We will map out the range of **financing instruments** for the circular economy. This way, we can help every initiator (for-profit and non-profit) progress, based on the needs of the project. At the same time, we're also working on separate Flemish channels for circular project financing.
- Industrial clusters are key in the Flemish **innovation policy**. These clusters are collaborations between companies, the knowledge community, and the government. Together, they want to set the bar higher for strategic sectors. The Flemish Government supports a total of 20 clusters, which together represent a significant portion of our economy. Circular Flanders is building steadily on collaborations with these clusters; the circular economy is being woven as the leitmotif throughout the innovation policy.
- Knowledge partners like KU Leuven, Ghent University, the University of Antwerp, and VITO are utilising people and resources for **(technological) research** into the various aspects of the circular economy, such as materials, design, recycling, societal impact, and business models. VITO and KU Leuven are also pooling some of their employees into the Circular Flanders operational team.
- The Flemish Knowledge Centre Water (Vlakwa) is utilising people and resources to assist companies in **closing water loops** at the company level through partner matching with technology suppliers/innovators, the initiating, coordinating, and facilitating of research and demonstration projects, and the inclusion of best practices in the Vlakwa portfolio when participating in trade missions, international conferences, etc



# PILLAR 3 RUNNING CIRCULAR BUSINESSES

## Circular toolkit for entrepreneurs

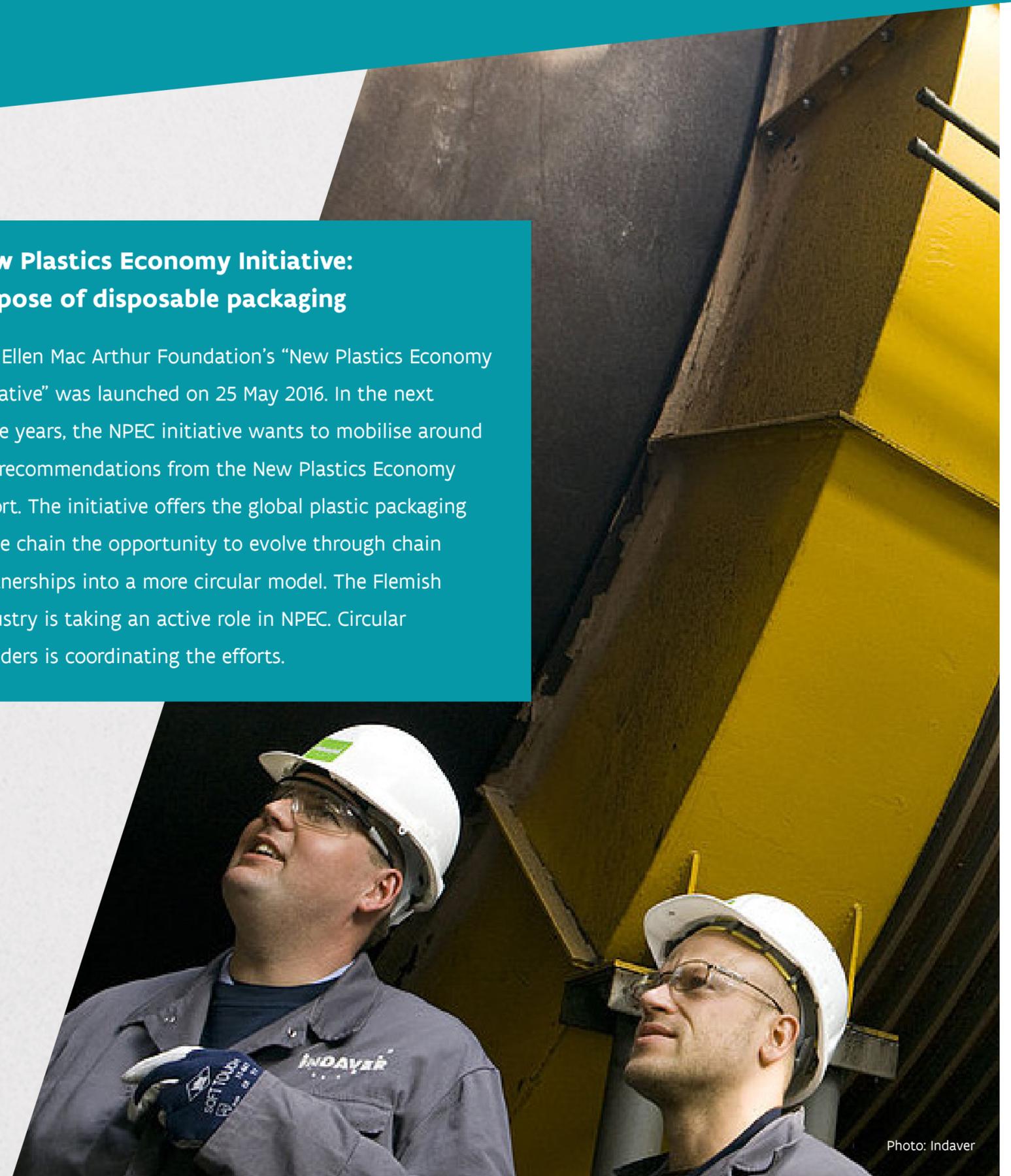
Our partners are building tools and workshops to help entrepreneurs:

- The OVAM is developing a tool (“Circle Tips”) to provide Flemish businesses with feedback on their materials management. They can then compare benchmarks with other sector partners and get recommendations on how they can feasibly make their materials management more circular.
- VITO and Circular Flanders developed the “Circulator” webtool. The Circulator assists companies, using a mix of strategic choices, in effectively moving towards more circularity in their business operations. Concrete case studies and examples of circular business models should inspire action.
- The OVAM Ecodesign team is further developing the portfolio with design tools: the SIS toolkit, the inspiration database, the Ecolizer, etc.
- Circular Flanders and Flanders DC are continuing to build on “Close the Loop”, a tool and guide for the fashion industry.

## New Plastics Economy Initiative: dispose of disposable packaging

The Ellen Mac Arthur Foundation’s “New Plastics Economy Initiative” was launched on 25 May 2016. In the next three years, the NPEC initiative wants to mobilise around the recommendations from the New Plastics Economy report. The initiative offers the global plastic packaging value chain the opportunity to evolve through chain partnerships into a more circular model. The Flemish industry is taking an active role in NPEC. Circular Flanders is coordinating the efforts.

[Indaver Molecule Management \(IMM\) is a project dedicated to valorising materials and energy from industrial processing waste flows.](#)



# PILLAR 3 RUNNING CIRCULAR BUSINESSES

## Experimenting, demonstrating, upscaling

- The Flemish Construction Confederation (VCB) is focusing on various projects to close the loop. For example, there is the Tracimat project, a tracing system for construction and demolition waste, a 3D printing project in the context of restoring buildings, and research into the chain partnerships for the high-value application of granulates (crushed waste streams).
- Specifically, essenscia wants to work with the professional section Detic, for example, on finding sustainable alternatives for chemical resources in the detergents industry.
- Through the spearhead cluster agri-food, Fevia, the federation of the Belgian food industry, is launching innovative projects to be used in the circular economy and developing high-quality applications for residual flows from the food industry.
- The Flemish Symbiosis Platform (VITO, OVAM) is a matchmaking platform to give residual streams bypass flows higher-value applications. The waste flows from one become resources for the other. The matchmaking is done via workshops, company visits, and an interactive database.
- Vlakwa has established the Flanders EU Waterhub, on which water-related innovative designs, strategies, and services are developed, tested, and upscaled to prove the market potential both domestically and internationally. Vlakwa wants to set up various unique water demonstrators within this hub. A water demonstrator (or testing ground, experimental space, hub) is an installation where water technology can be tested in a real-life setting (industrial/urban).

## Agoria's Circular Economy Learning Network

In the autumn of 2016, Agoria and Sirris launched Circular Economy Connect, a learning network on the circular economy for and by technology companies. The focus is on remanufacturing – remaking old products so that they're the “same as new” – and servitisation – the selling of a service or result instead of a product.

## The circular jobs of the future

GO4CIRCLE and the unions are teaming up to launch initiatives to put circular jobs more firmly on the map. The goal is to clarify the chances for job creation and to change existing training objectives with competences that are necessary in a circular economy.

## OUR APPROACH

# C POLICY RESEARCH

The Policy Research Centre for the Circular Economy (CE Centre) Support Centre was established to streamline the research into policy measures for the circular economy in Flanders.

The CE Centre Support Centre unites researchers from the KU Leuven, Ghent University, the Research Institute for Work and Society (HIVA), the University of Antwerp, and VITO. They will continue to build upon the research results from the previous SuMMa centre, which was active from 2012 to 2016. The OVAM and the Department of Economy, Science and Innovation (EWI) are financing the support CE Centre jointly.

The support CE Centre carries out scientific research into how the government can monitor, encourage, and contextualise the circular economy. The intention is to translate the scientific insights into support and recommendations for the policy, and to make this knowledge available to policy-makers, stakeholders, and the general public. In addition to this, the CE Centre is developing a scientific knowledge network that will position itself at a national and international level as a knowledge centre for the circular economy.

The CE Centre combines long-term research with short-term projects. For example, researchers work on specific cases that cut straight through the various research domains. Like the use of bio-based materials: how can the policy influence these products, from resource to product development to use and end-of-life.



The CE Centre's research focuses on three thematic points:

## 1. MONITOR FOR A CIRCULAR ECONOMY

How do we measure whether the Flemish economy is moving towards a circular economy? We need a set of indicators or a monitor for this. The monitor helps to determine policy priorities at a Flemish level or evaluate existing policy. The starting point for this product is indicators that are developed at the European or international level.

Specifically, product chains will be used as an approach. In this regard, a product is to be interpreted as a category, such as televisions, smartphones, concrete, electric vehicles, etc. Two questions then become important:

- How can a set of product chains be composed in such a way that the various aspects of the circular economy are covered?
- How do we define the product cycles and the limits thereof?

## 2. ENCOURAGING A CIRCULAR ECONOMY

What are the economic effects linked to the introduction of a circular economy? How can these effects be influenced by policy measures?

The transition to a circular economy brings changes to our economic system and our economic policy with it. Based on a macro economic perspective, we look at what the very best mix of instruments (legislation, economic instruments, taxes, subsidies, etc.) is in order to achieve a circular economy, potentially applied to several material chains or sectors. A number of new financing or revenue models that could make an important contribution to the circular economy are analysed at the micro level.

### Specific examples are:

- research into the various circular production and consumption models;
- exposing opportunities and obstacles when starting to implement the circular economy, both for consumers and manufacturers;
- ways to get financing for, and generate profits from, circular activities.

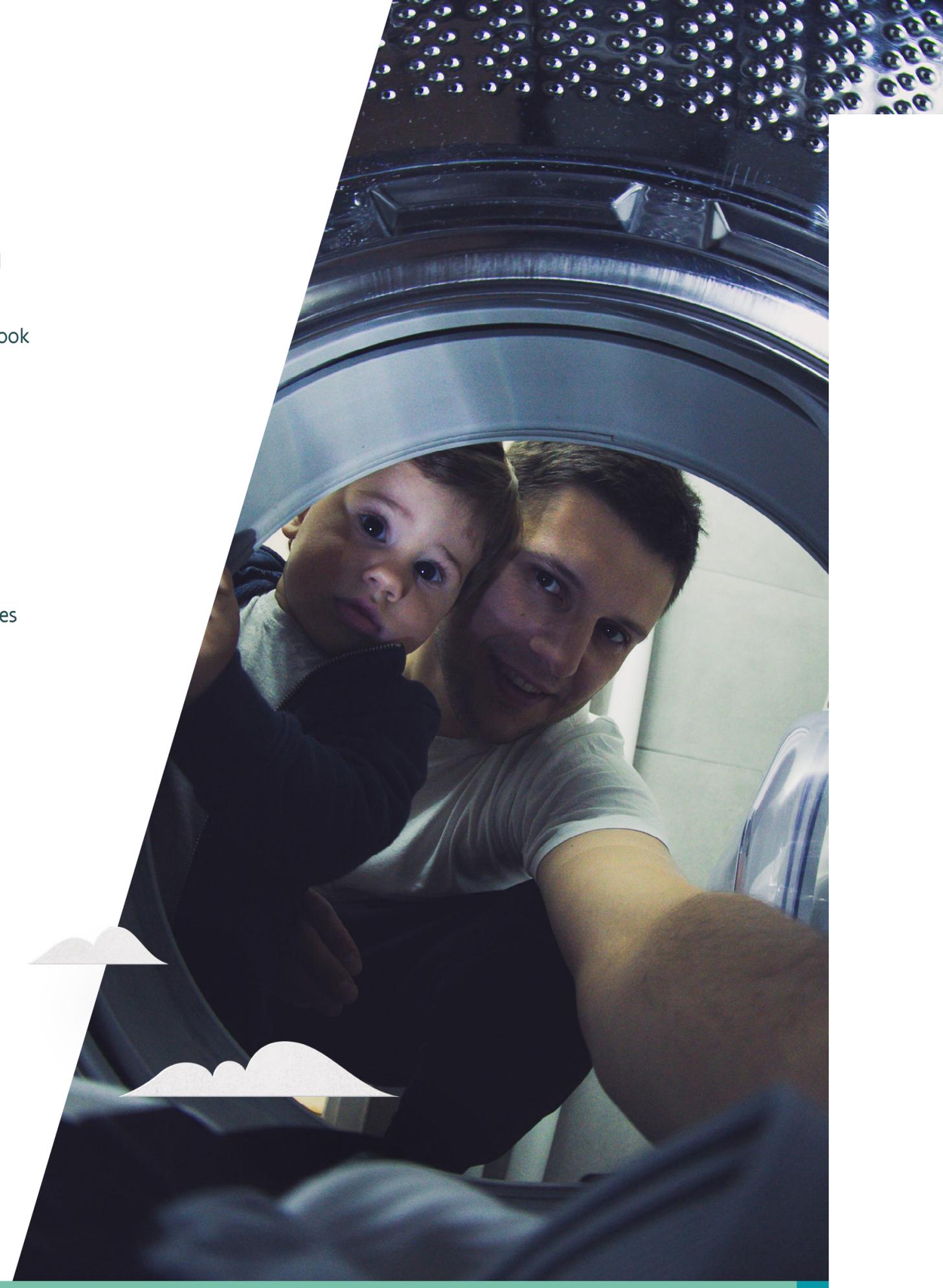
The CE Centre's research focuses on three thematic points:

### 3. A CIRCULAR ECONOMY AS TRANSITION

When thinking about the circular economy that has started to arise in recent years, we see various models and visions appearing as to what such an economy and society could look like and which technologies and social practices would be prominent within it.

#### Specific examples of the research in this theme are:

- analysing opportunities or obstacles for low-/unskilled workers in a circular economy;
- analysing how the circular economy could lead to changes in the relationships between consumers, manufacturers, prosumers, waste collectors/processors, and local administrations.





05

# WHAT CAME BEFORE

WAT VOORAF GING

## 2006 WASTE IS RESOURCE

In 2006, at the initiative of the OVAM, a small group of committed people were brought together to discuss the necessity of making our materials management more sustainable. From 2006 to 2012, this group was a thinktank and informal network in the heart of the OVAM: Plan C, the Flemish Transition Network for Sustainable Materials Management. This group made great contributions to the first change in mentality among a broader group of stakeholders: the emphasis was no longer on looking for ways to limit waste, but rather on dealing with materials in a more intelligent way, including manufacturing and consuming differently.

[Verimpex makes sturdy floor mats from discarded plane tyres.](#) →





## This first change in thought resulted in a number of important policy initiatives.

For example, in 2010, Flanders put sustainable materials management on the European political agenda during the Belgian European Union presidency. “Resource efficiency” then became one of the flagship initiatives within the EU’s 2020 strategy. Then, in mid-2011, the Flemish Government listed sustainable materials management as 1 of the 13 major societal challenges for Flanders. The OVAM was appointed architect to further flesh out the transition project. A new Materials Decree, to replace the Waste Decree, laid the foundations for a systematic approach.

Around this same time, it was decided that the informal Plan C network needed more speed and flexibility in making decisions. In order to achieve the mission, vision, and objectives stipulated for Plan C, the organisation made an independent step to transition into a non-profit organisation on 28 March 2012.

After 33 organisations from the government, industry, knowledge institutions, universities, and civil society made the commitment to come to a joint action at the first Sustainable Materials Management Round Table on 6 June 2011, this was solidified at the following Sustainable Materials Management Round Table on 6 June 2012 in a joint public-private action plan: Agenda 2020.

**Plan C, the research support centre for sustainable materials management (SuMMa), and Agenda 2020 were then brought together under the umbrella of the Flanders’ Materials Programme (VMP) as three complementary pillars.**

**01**

Agenda 2020 focused on specific, ambitious, multi-stakeholder projects;

**02**

SuMMa carried out policy-relevant research into sustainable material management;

**03**

Plan C was the pillar that, as a learning network, ensured the vision was developed and innovative experiments were set up.

WHAT CAME BEFORE

## 2013 A NEW DISCOURSE, THE CIRCULAR ECONOMY, TAKES OVER THE WORLD

The broad resonance of the discourse on the circular economy appeared to be the start of a second major change in thinking.

In 2013, the Ellen MacArthur Foundation launched the ground-breaking report, “Towards the circular economy, an economic and business rationale for an accelerated transition”. This report put the concept of the circular economy on the international map.

Umicore Precious Metals Refining is a global leader in recycling complex waste flows (such as e-waste) that contain precious and other non-ferrous metals.



The concept was picked up quite rapidly in Flanders too and linked to the work being done within the Flanders' Materials Programme. For example, the first specific mention of the concept can be found in the e-book, "Product <=> Dienst, nieuwe businessmodellen in de circulaire economie" (Product Service, new business models in the circular economy) which was launched by Plan C together with its community in February 2014.

Although the concept of the circular economy focuses on closing the loops and therefore does not differ, in essence, from the concept of the closed loop economy used at the time, the discourse of the circular economy appeared to be better, faster, and more widespread. Not in the least because the concept of circular economy was already reflecting in the language that it was about sustainability as the creation and capturing of value. Innovative, sustainable business models were the focus of that discourse.

The transition to a more circular economy requires a complete systematic change, with innovation that isn't limited to just technology, but also relates to the organisation of companies and society, to alternative financing methods, and to an integrated policy that supports the same goal from all domains: creating technical and biological material loops for fulfilling needs to the utmost for an increasing larger group of consumers around the world.

The many achievements and specific projects that were set up and carried out from 2012 to 2015 under the umbrella of the Flanders' Materials Programme<sup>9 10 11</sup> must therefore also be seen as the first step towards a circular economy in Flanders.. Based on this vision, Flanders has also established quite a nice series of accomplishments. In early 2016, the OVAM received the Circular Awards<sup>12</sup> for the work that it has done together with all the stakeholders in the Flanders' Materials Programme.

So it is no surprise that, at the end of 2014, the European Institute for Innovation and Technology (EIT) chose the consortium in which the Flemish partners Umicore, Ghent University, KU Leuven, and VITO played leading roles to help set up the EIT RawMaterials. This so-called KIC (knowledge and innovation community) has over 100 partners from industry and knowledge institutions and is the strongest partnership to ever be willing to take on the challenge of resources and the transition to a circular economy.

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<sup>9</sup> [www.vlaamsmaterialenprogramma.be](http://www.vlaamsmaterialenprogramma.be)

<sup>10</sup> [www.plan-c.eu](http://www.plan-c.eu)

<sup>11</sup> <https://steunpuntsumma.be>

<sup>12</sup> <https://thecirculars.org/finalists>

## WHAT CAME BEFORE

# 2016 THE FURTHER EXPANSION OF THE SCOPE OF THE CIRCULAR ECONOMY IN FLANDERS

When interpreting the concept of the circular economy in Flanders, the focus from 2012 to 2015 was first on closing the material loops. The circular economy was then defined as a strategy in which the value of a product was maintained for as long as possible and waste was minimised. After the end-of-life of a product, the materials from which the product was made remain in the economy, and they are given, after treatment if necessary, a new purpose.

In the Government of Flanders' long-term Vision 2050 strategy, it explicitly opts to further expand the scope and interpretation of the circular economy and clearly state the subthemes in the circular economy: materials, water, energy, space, and food<sup>13</sup>. Aiming for a competitive bio-economy that sustainably produces biomass and (re)uses biomass (waste) flows for food, animal feed, materials, products, and energy is explicitly covered.

The European Circular Economy package has established this same trend towards further expansion. There where the Action Plan continues to depart from the closing of the materials cycles as a basis of the circular economy, it simultaneously emphasises the reuse of water and the contribution of the bio-economy to a circular economy.

**This further expansion of the interpretation of the circular economy heralds a third change in thinking, whereby:**

- 01** the transversal character gains even more emphasis;
- 02** the cross-sectoral collaboration with many different stakeholders becomes even more important;
- 03** the application is expanded to an important number of new, currently less involved, players.

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<sup>13</sup> Visie 2050, p 75(<http://bit.ly/2sf15dv>).



# **TOGETHER TOWARDS A CIRCULAR ECONOMY**

## Circular Flanders Kick-off Statement

WE MAKE TOMORROW BEAUTIFUL

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