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The Urban Lab of Europe !

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Project led by the city of Antwerp



**CIRCULAR
ECONOMY**



The ANTWERP CIRCULAR SOUTH Project

The Antwerp Circular South project aims to position circularity as a community challenge for the New South district (a newly created district in Antwerp) and to engage its new residents in co-creating online and offline initiatives to change their consumption behaviours. A number of advanced technical solutions covering different resource streams (energy, water and waste) will be tested.

200 Circular South inhabitants will experiment with the so-called 'behavioural nudging', receiving cues to adapt their consumption behaviour of energy, water and waste in the most ideal circular way. Circular behaviours will be automatically rewarded by an alternative online currency, the Circular coin, through a blockchain-based reward and exchange system. A part of the most engaged Circular South participants will form a local Energy Cooperative sharing an innovative collective energy system. In addition, a Circular South Community Centre will be set up to host a number of initiatives related to sharing, repairing and reusing activities. The project will finally deliver a community platform (both technological and social) in which future circular economy initiatives can be integrated after the project.

The project is composed of the following partners:

- The City of Antwerp, department of energy and environment;
- Vito/EnergyVille;
- Digipolis;
- Imec;
- Pantopicon;
- EnergielD
- De Kringwinkel; and,
- Ecopower

Table of Contents

| | |
|---|-----------|
| 1. Executive Summary | 4 |
| 2. Circular economy in the EU and in Antwerp | 6 |
| 2.1. The EU context on circular economy | 6 |
| 2.2. A strong political support for Circular Economy in Antwerp | 8 |
| 3. Setting the stage | 9 |
| 3.1. Nieuw Zuid's testbed for new <i>energy</i> practices | 9 |
| 3.2. An urban Lab for making the city of tomorrow | 9 |
| 4. Making resource provisioning circular in Antwerp South | 11 |
| 4.1. Combining the methodologies to ensure a relevant take-up | 13 |
| 4.2. What has been achieved so far? | 14 |
| 5. A constantly constructive approach to overcoming the project's challenges | 17 |
| 5.1. A specific attitude to addressing the challenges ... | 17 |
| 5.2. ... combining with "traditional" skills and competences | 17 |
| 5.3. Co-creation and Community engagement | 18 |
| 5.4. Adjusting to fluctuating priorities outside the project | 19 |
| 5.5. Challenges | 21 |
| 6. What have we learnt so far? | 22 |
| 7. That's it for now | 23 |
| 8. Acknowledgements | 24 |

1. Executive Summary

Circular economy is high on the environmental and economic agenda of the European Union and one of the Urban Agenda partnerships is focusing specifically on this issue. At the same time, the government of Flanders and the city of Antwerp both promote and support this approach. As such, the City of Antwerp has been experimenting for a decade in districts to increase the circularity energy provision, air quality protection, water supply and waste management. In particular, the Nieuw Zuid district, whose works started in 2014, is the testbed for new energy practices related to air quality, renewable energy, grey water recovery and circular district heating. The district has also been a living lab for experimentation in community engagement and city co-creation with the 2-year long project of SamenZuid and the 1.5-year long StadsLab 2050.

Antwerp Circular South is embedded in this new district and seeks to support the transition of citizens towards more sustainable consumption practices of electricity, heat, water, materials and towards the reduction of waste. The project will use technical devices (Photovoltaics - PVs, Building-integrated photovoltaics - BIPVs, storage batteries, smart plugs, smart sensors, smart meters, smart waste bins and A-card), combined with specific modalities (online community engagement, transition board, data treatment procedures, user profiling, business logic, nudges, blockchain, recruitment of Repair buddies and makers), with online and offline interfaces (dashboard and a circular community centre) to carry out activities for the residents (creation of an energy cooperation, of a circular coin and

smart contracts, waste challenges, Leasing of tools and devices, repairs cafes, circular material workplace, redesign service, study visits).

The innovation of the project lies not so much in the individual elements taken separately but the way they are put together in a complex way combining research and practice, technical digital and social innovation offline and online activities. In the first year of the project, the partners have managed to establish the basis for the experimentations to be carried out (in relation to the technical devices, modalities, interfaces and activities), yet they had had to overcome a series of (ongoing) challenges related to: the need to adopt a specific attitude from the city administration in being creative and innovative and to get the right team on board combined with the need to have a strong coordination, the importance and interlink of co-creation and community engagement for the project that should be further enhanced and supported and the difficulty to make within an uncontrollable economic and political context with the fluctuating decisions of the Commercial Area Developer of the site – affecting the installation of PVs and of the location of the Circular Community Centre - and the changes of regulation in relation to waste deposit schemes – affecting the waste challenges.

Yet, the partners have shown great resilience and learning capacity from which we can take away four main lessons: for such experimental projects to require a change in the way of working both the administration and of the partners in co-

created projects; that co-creation is not given at hand and stakeholders tend to use the concept with different interpretations and objectives; that projects are embedded in a wider social, cultural, political and economic context and that

the partners do not have at hand the possibility to control all these elements; that the transition of consumers towards more sustainable consumption practices should be addressed in a combination of approaches and stakeholders.

2. Circular economy in the EU and in Antwerp

“Sustainability is a key concept people have been fed up with” stated upfront Gabrielle Van Zoeren, Project Coordinator at the City of Antwerp. Indeed, although, as any concept, putting words on an existing situation – or rather a situation that needs to change - it has enabled public and political concerns and great achievements in the integration of the three pillars in the economic, social, political, cultural, environmental, public and private lives. Yet, as any concept which is

overused and has been manipulated according to each individual interest, it has now reached a stage where it should on the one hand be totally embedded in our practices on the other be fully integrated as a new paradigm and for us to move towards other approaches and paradigms to ensure the viability of our planet. Circular economy is one of such concepts, that both the EU and the City of Antwerp have been supporting and adopting in the last decade.

2.1. The EU context on circular economy

The official position of the European Union on circular economy took place in 2014 with the a [Zero Waste Programme for the EU](#), covering the full economic cycle - beyond waste reduction targets - and focusing on the support that circular economy could provide to sustainable growth¹. In 2015, the European Commission adopted the Circular Economy package composed of the [EU Action Plan for the Circular Economy](#) and its annexes, outlining a set of both general and material-specific actions in order to **benefit both the environment and the economy** while stimulating Europe’s transition towards a circular economy, boosting global competitiveness, fostering sustainable economic growth and generating new jobs. The Action Plan covers the whole chain - Product design, Production process,

Consumption – with a specific focus on materials and sectors face specific challenges in circular economy (Plastics, food value chain, Critical raw materials, Construction and demolition, Biomass and bio-based products.) It was completed by the [revised legislative proposals on waste](#) which adopted ambitious targets.

In 2018, the European Commission adopted a new set of measures, including: A Europe-wide [EU Strategy for Plastics in the Circular Economy](#) to transform the way plastics and plastics products are designed, produced, used and recycled, a Communication on [options to address the interface between chemical, product and waste legislation](#), a [Monitoring Framework on progress towards a circular economy](#) at EU and national level, and a

¹ via an enabling policy framework for the design and innovation for a circular economy, the unlocking investment in circular economy solutions and the harnessing action by business and consumers and supporting SMEs, as well through the modernisation waste policy and targets (waste as a resource), the definition of waste targets for a move to a recycling society, the tackling specific waste challenges and the set-up of a resource efficiency target.

[Report on Critical Raw Materials and the circular economy](#). The process has been supported by a large consultation of stakeholders: Conferences in 2015, 2017 and 2018, a [public consultation](#) from 28 May to 20 August 2015 which received around 1500 contributions, the [Circular Economy Missions](#) and the [European Circular Economy Stakeholder Platform](#). This transition will be supported financially by the European Structural & Investment Funds (ESIF), with 5.5 billion euros

for waste management and in addition, 650 million euros under Horizon 2020.

With regards to cities, the current flagship initiative is the [Urban Agenda for the EU Circular Economy partnership](#)². At the moment, the partnership has drafted and opened to consultation the following actions of the [Draft Action Plan of the Partnership on Circular Economy](#), as presented in the box below.

Box 1 Draft Actions of the Action Plan of the Partnership on Circular Economy

Better Regulation

1. Help make waste legislation support the circular economy in cities
2. Help make water legislation support the circular economy in cities
3. Analyse of the regulatory obstacles and drivers for boosting an urban circular bioeconomy

Better Funding

4. Prepare a Circular City Funding Guide to assist cities in accessing funding for circular economy projects
5. Mainstreaming the circular economy as an eligible area into the post 2020 Cohesion Policy and corresponding Funds

Better Knowledge

6. Prepare a blueprint for a Circular City Portal
7. Promote Urban Resource Centres for waste prevention, re-use and recycling
8. Develop a 'Circular Resource Management' Roadmap for cities
9. Develop a Collaborative Economy Knowledge Pack for cities
10. Manage the re-use of buildings and spaces in a circular economy
11. Develop City Indicators for Circular Economy
12. Develop a "Pay – as – you - throw" toolkit with coaching

Source: [Circular Economy Partnerships platform](#)

² Coordinated by the City of Oslo, and composed of six urban authorities, namely the City of Oslo, The Hague, Prato, Porto, Kaunas and Flanders region. The Member States are Finland, Poland, Slovenia and Greece; the European Commission (DG REGIO, DG ENV, DG CLIMA, DG RTD, and DG GROW); Council of European Municipalities and Regions (CEMR); Eurocities; URBACT; and the European Investment Bank (EIB); and stakeholders (the Association of Cities and Regions for Sustainable Resource management (ACR+) has joined as stakeholder; ICLEI, Europa Decentraal, RReuse, OUIShare, and the University of Nijmegen (NL)).

2.2. A strong political support for Circular Economy in Antwerp

The Region of Flanders is strongly supporting circular economy with its strategy and funding opportunities. In particular, the OVAM (The Public Waste Agency of Flanders) adopted a [Strategic Plan on sustainable waste, material and soil management for 2015-2020](#). The implementation of this strategy is supported by the setup of a funding tool, [Vlaanderen Circulair](#), which encourages innovative projects in circular economy. In addition, Vlakwa, the Flemish government's Knowledge centre for Water, drafted, in March 2016, a [Vision for 2050](#) that describes citizens' lack of awareness or sense of urgency about Flanders' shortage of water supplies. It underlines the need for individual behavioural change and proposes a number of measures to avoid structural wastage. Finally, in October 2016, the Flemish government stated in a policy letter that it wants to stimulate the further deployment of PV systems by rolling out smart meters and creating a new regulatory framework for energy storage and renewable energy self-consumption.

After having been one of the first cities to sign the [Covenant of Mayors](#) in January 2009, the City of Antwerp carried out a study on its metabolism as well as investigated the [Cradle-to-cradle](#) approach – in which the circularity of the metabolism of products and systems is put forward in a biomimetic way, stressing the holistic and systemic links, together with a zero-waste goal - together with that of the [doughnut economy](#) - a model presenting the finite limits of the earth together with the social injustice related to the way the economy is currently organised. The adoption of these approaches and models have led the City of Antwerp to design a Circular Economy Vision. It was co-created by the departments dealing with energy and environment and that of waste management, together with that of marketing and economy. This latter department was key in order to ensure uptake of the vision: indeed, *“When there is a clear economy return of the vision we can then further carry on the work we have initiated”* explains Gabriëlle Van Zoeren.

3. Setting the stage

3.1. Nieuw Zuid's testbed for new *energy* practices

In the south of Antwerp, the Nieuw Zuid – one of the 5 districts³ in which the City of Antwerp has been experimenting on circularity energy provision, air quality protection, water supply and waste management in the last decade - was initiated in 2010 with the aim of building 2002 houses, of which 11% social housing. It is the first area development with sustainability **indicators** in the Local Spatial Plan (RUP) and the Strategic Masterplan (SMP), being:

- **Green District:** 60% of the area is green
- **Lively and Attractive, mixed housing:** this new neighbourhood is not a separate community
- **Slow mobility:** one-way streets, underground parking, green slow mobility in the side lanes

- **Sustainable development:** passive build homes, green roofs, water balance, soil balance, sound and air quality solutions
- **Flexible structure:** designed to be able to implement a variety of housing typologies and functionalities (students, family, elderly, etc.).

The project of Nieuw Zuid, i.e. the start of constructions, was effectively launched in 2014. As of September 2018, one third of the project is already built. A total of 2.3 million euros from the Regional City Renovation Fund (*Vlaamse overheid - Stadsvernieuwingsfonds*) are dedicated to sustainable projects in the district. As a Smart district, the ambitions of Nieuw Zuid are to focus on Air quality, mobility, renewable energy, grey water recuperation, Green City District heating, smart homes and citizen involvement⁴.

3.2. An urban Lab for making the city of tomorrow

Within two projects, the City of Antwerp sought to develop local innovations based on citizens and entrepreneurs' needs and inputs. The *StadLab 2050* was composed of a series of meetings organised over 1.5 year where architects, brewers, entrepreneurs, designers exchanged on the opportunities given to the empty ground

floors of the buildings that would make the area attractive. The outcome of these workshops, together with the approval of the Commercial Area Developer (*Triple Living*), was to organise short-term pop-ups to test their ideas and business models. Through *SamenZuid*, the City targeted directly the new residents of the

³ Smart Zone, Cadix, Blue Gate Antwerp, Groen Zuid and Nieuw Zuid

⁴ As testified by the following on-going projects: "Optimal air quality in schools", "PV and Battery storage", "Local Grey Water Recuperation", and "District heating".

neighbourhood in engaging them in a series of small actions (such as neighbourhood drink, furniture swap) and asked the residents what they wanted to have and to do, *themselves*, for their neighbourhood. From the City of Antwerp's

side, this pilot project led to questions which are crucial for the UIA project: *how to let go and have citizens embodying their neighbourhood by themselves? How to manage several communities (e.g. on different interests)?*

4. Making resource provisioning circular in Antwerp South

The UIA project has enabled to go one step further in developing a circular economy approach in the neighbourhood. As Gabriëlle Van Zoeren stated, *“This was a fertile ground for a more ambitious approach from sustainable towards circular area development.”* It aims at **changing residents’**

consumption of heat, electricity, water and their waste production by combining technical devices with specific modalities via physical and virtual interfaces for a series of activities undertaken for and with the residents, as presented in the table below.

TABLE 1: OVERVIEW OF ANTWERP CIRCULAR SOUTH PROJECT

| Stream | Technical devices | Modalities | Interface | Activities |
|-------------|--|--|---|---|
| Electricity | PV BIPV Storage batteries Smart plugs | Online Community Engagement Transition board | Dashboard | Creation of cooperative |
| Heat | Smart sensors | Data treatment procedures | | Circular coin Smart contract |
| Water | Smart meters | | | |
| Waste | Smart waste bins A-card | User profiling Business logic Nudges Blockchain | | Waste challenges |
| Material | | Recruitment of Repair buddies and makers | A Circular Community Centre (CIRCUIT) | Leasing of tools and devices Repairs cafes Circular material workplace Redesign service Study visits |

Source: UIA Expert

Technical devices:

- The **PV** (Photovoltaics) and **BIPV** (Building-integrated photovoltaics) will be purchased within the project and installed on balconies of residents willing to take part in the project. The **storage batteries** will be installed in their cellars, enabling the production of own energy;
- **Smart meters** (plugs and sensors) will be installed in the flats in order to measure the consumption of energy by residents;
- **Smart waste bins** are already installed throughout the whole City of Antwerp: citizens need a so-called A-card in order to use them to throw away their residential waste, sorting them out by type (glass, paper, plastic, organic, and general). The amount of waste thrown away is monitored for each resident.



Picture 1 Smart waste bins in Antwerp
Source: UIA Expert

Back-office modalities:

- The **Community** of Nieuw Zuid will be engaged via online interactions;
- A **Transition board** will have an advisory and evaluative role for the Community engagement;
- Procedures for **Data treatment** (storage and processing) will be designed;
- **User profiling** will identify consumption patterns;
- The **business logic energy and waste** will setup identified streams of energy and waste;
- **Nudges** will direct residents' consumption;
- **Blockchain technology** will reward citizens' positive consumption practices;
- **Repair buddies** (residents) and **makers** (professionals) will be recruited.

Technological interface:

- A **dashboard** will display individual and collective consumption and production patterns;
- A **Circular Community Centre (CIRCUIT)** will ensure face-to-face interaction and activities with citizens.

Activities:

- A **cooperative** will be created in order to make residents owners of the electricity they produce;
- A **circular coin** will serve as a currency for a reward system applied together with the nudges.
- **Smart contracts** will allow the automatic reward of responsive behaviours;

- A system for leasing **tools and devices** will support the reduction of ownership of material at home;
- Similarly, **Repair cafes** will support the repair of already own material instead of purchasing new ones;
- The **Circular material workplace** will enable residents to fix themselves their products;
- **Redesign services** will be provided by professional designers and craftspeople;
- **Study visits** will promote the Circular Community Centre as an example;
- **Waste challenges** will put citizens at the heart of their practices on green waste (compost), deposit (bottles and cans) and preventing the use of packaging combining both offline and online activities.

4.1. Combining the methodologies to ensure a relevant take-up

Antwerp Circular South is a project that combines cross-cutting approaches and methodologies.

- **Research and practice:** from a back office (research and development) to a front office (direct interactions with the citizens)
- **Technical, digital and social innovation:** from innovations requiring engineering skills, to soft skills via IT skills
- **Online and offline:** from activities organized “virtually” to activities with physical interactions

The project is composed of eight partners from different sectors and fields of work:

- The [City of Antwerp](#), department of energy and environment,
- [Vito/EnergyVille](#), Belgium’s largest R&D organization on sustainable technology;
- [Digipolis](#), the governmental non-commercial ICT solution partner of the City of Antwerp;
- [Imec](#), a Belgian non-for-profit Research and Technology organization;
- [Pantopicon](#), a foresight and design studio;
- [EnergieID](#), a cooperative developing IT solutions for energy, water and transport monitoring;

- **De Kringwinkel**, a social and professional reinsertion NGO in the field of reuse of discarded goods and recovery of non-reusable parts; and,
- **Ecopower**, an energy cooperative.

They are presented in their main roles in the project in the figure below, based on the above-mentioned classification (note that most of the partners contribute to all tasks to different extents).

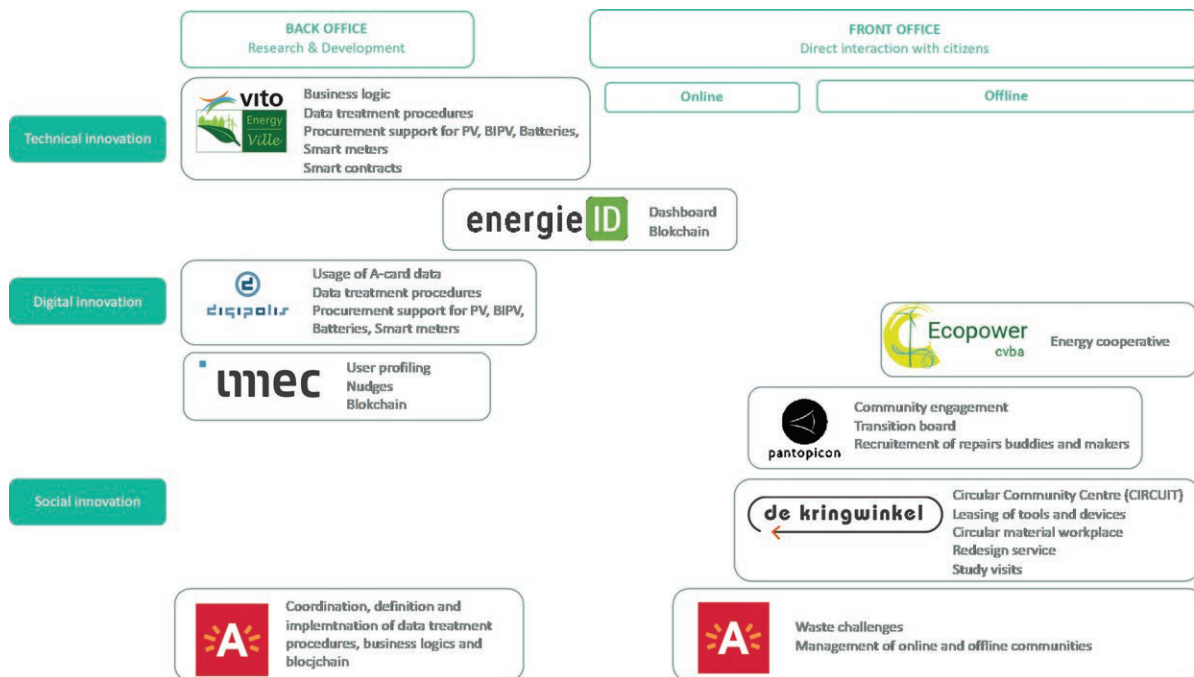


Figure 2 the dimensions of the partners' roles in the project
Source: UIA Expert

The way the partners perceive the innovation of their project is available on a [online video](#).

4.2. What has been achieved so far?

In terms of preparation of what should be implemented in the project in the back-office, the following achievements have been already reached:

- On the **technical devices**: the public procurements of shared energy installation (PV, BIPV and storage batteries) and smart apartment devices have been launched;
- On the **modalities**: data treatment procedures and IT platform are ready, public procurement

for the reward system and blockchain wallet has been launched. On the nudging experiment, user journeys and profiling have drafted, business logic discussions launched, blockchain-reward system development on-going, nudging messages' requirements analyses have been started;

- On the **interface**: the application is currently being developed and the integration of data is being discussed



Figure 3 Initial screenshots of the app
Source: EnergieID

On the front-desk, activities with citizens and community engagement:

- On the **modalities**: the community engagement strategy has been launched, the list of members of the Transition board is drafted;

- On the **interface**: Initial activities (on composting and gardening) were launched in April 2018 to already engage with the local community. The Circular Community Centre was called CIRCUIT and was opened on the week-end of 6 October 2018 to the general public (see picture below).



Picture 2 Opening of CIRCUIT on 6 October 2018
Source: UIA Expert

- On the **activities**: the modalities of the energy cooperative have been established and two presentations were already made to citizens to invite them to join, with 11 participants who all signed up for it. The zero-waste challenge, so-called **100-100-100** (100 days, 100 families, 100% zero waste) was launched on 15 October 2018.

5. A constantly constructive approach to overcoming the project's challenges

5.1. A specific attitude to addressing the challenges ...

The Antwerp Circular South project has been very well defined upfront and even though not all the challenges were foreseen, those which have appeared so far have demonstrated the ability of the team, to be innovative in identifying solutions. Crucially, even if not all the challenges were anticipated – and would never be in such a project – the Project Coordinator was creative and dedicated to identifying the adequate way of addressing them, with a solution-oriented approach. The concept of “Supercitizen” is now increasingly used. That of “Super civil servant” is less so, also the need for but also the ability of civil servants to innovate, is **key** for transitioning our cities via transitioning City administration functioning. Some cities, like **Turin** in Italy, are already promoting such administrative entrepreneurship. Gabriëlle Van Zoeren, the project coordinator who appears to be such a

“Super civil servant”, has also faced the reality of recruiting the adequate team members: someone eager to engage in an innovative project where everything needs to be experimented, which needs flexibility and creativity, at the same as being dedicated. Since the beginning of the project, she has hired two project managers who both left because of the inadequacy of their skills and of their personal motivation for the project. When asked if we could share this case in the project's journal Gabriëlle answered: *“Of course, this is an issue we all face when trying to implement such an innovative and experimental project. It is key to get the adequate resources. Other cities should know it is not easy to get the right people on board!”* All the partners have had to learn to be creative and flexible in addressing the challenges described below.

5.2. ... combining with “traditional” skills and competences

The adequate profiles of the team members should not leave aside the fact that such a large project should be strongly coordinated, using robust management techniques, together with adequate communication tools and mechanisms, risk mitigation techniques as well as strong commitment, together with data protection mechanisms. At the basis of the

good collaboration with the partners is a well-established and functioning GANTT chart. This might look like basic project coordination, yet, this is a prerequisite to ensure that responsibilities, tasks and deadlines are clear to the whole team and before further transversal co-creation activities can be implemented. In the project, this

is completed by regular physical meetings (every month) and the use of BaseCamp.

The integration has been ensured by a systematic individual approach by the Project coordinator, where each personal and user-friendly contact sought the buy-in as well as update of colleagues to the project. Negotiation or “buy-in” is part of the everyday job of Gabriëlle, especially when dealing with other City administration

departments. Although already validated internally, the purchase of the building for *CIRCUIT* caused a series of discussions with the Finance Department which was in need to see immediate financial return on its investment. When negotiating, Gabriëlle **demonstrated the added value of such an investment in terms of public goods and the provision of a social service which is done at no extra maintenance costs nor HR costs for the City administration.**

5.3. Co-creation and Community engagement

The City of Antwerp uses the so-called **7E model**⁵ in order to develop strategies to think through community engagements in the short and long term. This approach is used by the administration in charge of the communication and delivered by the Community Manager. The Marketing and Communication plans and Work packages were planned and analysed using this approach and forces to focus on an integrated way of carrying out the project.

Yet, initial discussions with the partners have raised some concerns about the co-creation of solutions within the partnership and with the citizens. Indeed, it appeared that, initially, activities on user profiling, business and nudges were designed “in chamber” rather than in taking opportunities of the on-going offline activities and emerging communities, which could have impact both on the meaningfulness of the modalities being designed and on the relevance of community engagement. As Nik Baerten from Pantopicon put it: *“There is a risk that user*

input and feedback on the design of the systems under development (dashboard, reward system, etc.) can insufficiently be considered leading community members to opt out”. This is also related to the mixture of partners’ profiles from more academic ones (e.g. Vito/Energy Ville and IMEC) to more implementation one (Pantopicon and De Kringwinkel). Initial discussions with the partners have shown interest in integrating further the work.

In addition, the issue of community engagement is also high on the priorities of the partners. SamenZuid was an ambitious project which enabled creating a local community, yet it stopped 6 months before Antwerp Circular South was launched and lost some of its momentum. *CIRCUIT* is now hosted at the very end of Nieuw Zuid, beyond the building works and not in the centre of the already built area, making it less obvious for residents to pass by (at least by chance). At the same time the activities have already started to attract interests for

⁵ The 7E corresponds to: Enlightening (Informing on the challenges and explaining the current state of actions); Making people Enthusiastic (Getting citizens emotional involved); Encouraging (Rewarding citizens for doing the right thing, getting them motivated); Exemplifying (Giving the right example); Enabling (Facilitating citizens to do the right thing); Engaging (Identifying ambassadors and role models, getting them involved and engaging them with others); and, Experiencing (Mainstreaming individual actions, turning experiment into default behaviour).

Ambassadors (promoting some activities of the project such as composting) and Harries and Henriettes (supporting the activities of CIRCUIT in repairing). The composting scheme has for example already attracted 10 people, with 3 people really engaged in the process, who could serve as leverage for the actions of the UIA project. The Energy cooperative, which is in

itself a way of empowering residents in making them the owners of the energy they produce, has already got the buy-in of the 11 people who participated in the presentation sessions (a low number but a success rate of 100%). Yet, the partners have raised series of concerns about community engagement that will need to be addressed in the next months of the project.

5.4. Adjusting to fluctuating priorities outside the project

As mentioned, the project has a strong leadership and partners, it is well structured and well-functioning. Yet, the project is embedded in a pre-existing project and which is now in the ownership of a Commercial Area Developer, Triple Living, and has had to face the changes of its priorities. In particular, the Circular Community Centre, CIRCUIT, was supposed to be in a construction already built by Summer 2018. Yet, Triple Living decided to re-affect the

initial use of the building (14), proposing instead the building 20 which will be available in 2020 only. **The solution identified for the project was to start CIRCUIT in a temporary location.**⁶ This area is now in the ownership of a local event organiser, PleinPubliek, who rents some of its containers to CIRCUIT who can in return benefit from the visibility and attractiveness of the events organised by PleinPubliek and of the visitors of the pop-up shops.⁷



Picture 3 CIRCUIT hosted by PleinPubliek
Source: UIA expert

⁶ As many cities have already [experimented](#), temporary use of vacant spaces enables experimentation and test of types, scope, target audience and benefits of activities before moving to a final location. In addition, they enable the *co-creation* of the space together with its current and future users. In response to the risk-averse position of private stakeholders such as Triple Living, simple and user-friendly tools such as the [Temporary Use for Dummies video](#) can be extremely useful.

⁷ In addition, it should be noted that the rationale for a pop-up location and the pop-up stores come from the outcomes of the StadsLab 2050.

An additional draw-back from Triple Living was its refusal to install the energy systems on the two originally planned buildings. **Discussions are now on-going with the residents in order to install BIPV and PV on their balconies and terraces.** For partners, it has led to the design of new strategies for installation of technical devices and public procurement, and as Raf Ponnette from Vito/Energy Ville stated “*The match of the location of*

batteries (new & second life) with the location of PV may be less optimal. In addition, the creation of a plan B consumes additional time, energy and budget. As such, the planning of our human and non-human (labs) resources is more difficult”. This fear is also expressed by Ine Swennen from Ecopower: the project partners need to collaborate in order to find sufficient and optimal surface for the installation of PV-installation.



Picture 4 On-going works in Nieuw Zuid
Source: UIA Expert

Another challenge has been a change in legislation. The project was envisaging to run a “deposit challenge” making it possible for residents to return their plastic bottles and in five locations scattered across Nieuw Zuid. As was confirmed at the [end of July](#), the Flemish government decided that no (mandatory) deposit system on cans and plastic bottles at this point in

time would be implemented. A deposit system could be introduced at the earliest in 2023 if the collection and recycling objectives are not met. The main issue for the UIA project at this stage is therefore to find room within the current law to: set-up a working deposit and recycling system; and, to reward citizens for their actions.

5.5. Challenges

Following the UIA approach to cities' challenges in designing and implementing an innovative urban project, the table below summarizes the

above-mentioned description of the project's challenges referring to the described cases.

TABLE 2 MAPPING ANTWERP CIRCULAR SOUTH AGAINST THE ESTABLISHED UIA CHALLENGES

| Challenge | Level | Observation |
|---|--------|--|
| 1. Leadership for implementation | Low | There is no foreseen specific risk associated to the leadership in the implementation of the project. |
| 2. (Smart)Public procurement | Low | Public procurement does not appear to be a major issue to the project, yet, attention should be taken in the way the investments are delivered in the project and implemented in adequation with its objectives. |
| 3. Organizational arrangements within the urban authority | Medium | Organizational arrangements within the urban authority could be an issue if the other departments lose the buy-in and commitment they have developed so far. Attention should be taken to the follow up of what has already been solved and implemented. |
| 4. Participative approach for co-implementation | Medium | Participation is in the spirit of the project, yet, activities within the partnership and with the citizens should be organised to ensure a real co-creation and co-implementation of the project. |
| 5. Monitoring and evaluation | Low | Monitoring and evaluation do not appear to be a major issue to the project, yet, it should not focus solely on quantitative data and information, or evaluative criteria, but also qualitative explanations. |
| 6. Communication with target beneficiaries | Medium | Communication does not appear to be a major issue to the project, yet, new strategies will need to be further developed in order to reach out to the planned number of citizens. |
| 7. Upscaling | Low | Upscaling has already been envisaged and does not appear to be a major issue to the project, yet, attention should be taken to the follow up of what has already been solved and implemented. |

6. What have we learnt so far?

Antwerp Circular South has focused on setting up the experimentation that will be carried out during the next steps of the projects. The partners have shown great resilience and learning capacity from which we can take away the following four main lessons:

- Such an experimental project requires a **change in the way of working** both the administration and of the partners in co-created projects and that it requires openness and transparency, willingness and ability to be creative and innovative in identifying solutions. It is to be foreseen that further adjustments to the project will be needed in the next months and years, re the methodology, the scope, the infrastructure etc.
- **Co-creation is not given at hand** and stakeholders tend to use the concept with different interpretations and objectives. Being initiating a project, expectations and working methodologies should be agreed upon and aligned upfront.
- **Projects are embedded in a wider social, cultural, political and economic context** and that the partners do not have at hand the possibility to control all these elements. The changes incurred by Triple Living are to be mitigated and new ones might be arising. Residents are unpredictable human beings and although strategies can be and should be in place to engage with them, they have their own free will and agendas: partners will need to be careful in addressing them the best ways in terms of methodology, attitude and timing;
- The **transition** of consumers towards more sustainable consumption practices should be **addressed in a combination** of offline and online activities, hard and soft scientifically approaches, and the variety of public-social-private-academic stakeholders in the project stresses the importance to act upon it all the levels the **transition mechanisms**.

7. That's it for now

In the next couple of months, the project will focus on finalising the details of the experimentation in order to fully test it with the participants afterwards:

- The infrastructure (PV, BIPV and storage batteries) and smart devices will be purchased;
- The Transition board will be set up and the first meeting will take place;
- The systems for treating the data will be fully set up and ready to be operational;
- The online experiments (user profiling, business logic, nudges and blockchain) will be fully finalised, in co-creation with residents in order to identify the best solutions to them;
- The dashboard will be finalised in co-creation (and test) with the residents;
- The activities of CIRCUIT will be running, together with a strong engagement of residents. The project: the project of leasing of tools and devices (via a “library”) will be designed, repair cafés organised, the circular material workplace installed, the redesign services in progress and study visits organised
- The cooperative will be launched with the first participants
- The circular coin and smart contracts will be designed
- The first waste challenge (on packaging waste) will have been organised and the next one (on food waste) planned
- The community will be increasingly engaged via online channels, together with the development of the communication strategy, tools and platform
- The recruitment of repairs buddies and makers will be on-going.

We are inviting you to join us in 6 months to check the updates of the projects, via its challenges and learnings!

8. Acknowledgements

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I would like to thank all the partners for their transparency and honesty and willingness to debate constructively on the state of the art and possibilities to improve the project. As Raf Ponnette stated: *“Circular South could become a very fun project to do! and it has the potential to become a reference project in Europe!”* Marcelline Bonneau, October 2018



Picture 5 meeting with the project partners on 20 September 2018
Source: UIA expert

Urban Innovative Actions (UIA) is an Initiative of the European Union that provides urban areas throughout Europe with resources to test new and unproven solutions to address urban challenges. Based on article 8 of ERDF, the Initiative has a total ERDF budget of EUR 372 million for 2014-2020.

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