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Author:
Marcelline Bonneau
UIA Expert

URBAN INNOVATIVE ACTIONS
The Urban Lab of Europe !

The ANTWERP CIRCULAR SOUTH project Journal N° 3

*Project led by the **City of Antwerp***

CIRCULAR ECONOMY

CIRCULAIR ZUID
Samen slim wonen

European Union
European Regional Development Fund

Région Hauts-de-France

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, waste and materials) 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, waste and materials in the most ideal circular way. Circular behaviours will be automatically rewarded by an online token, the Circular coin – Circules, through a blockchain-based reward and exchange system. A part of the most engaged Circular South participants will form a local energy community co-owning of an innovative collective energy system. In addition, a Circular South Community Centre – CIRCUIT will be set up to host a number of initiatives related to sharing, repairing and reusing activities. CIRCUIT will reach out to a broader group of citizens in opposition to the more limited group of 200 participants in the behavioural nudging experiment.

Partnership:

- The City of Antwerp
- Vito/EnergyVille
- Digipolis
- Imec
- Pantopicon
- EnergieID
- de Kringwinkel Antwerpen
- Ecopower

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1. EXECUTIVE SUMMARY

The project is now entering its second half. As reported in the first two journals, the project took some time in setting up the mechanisms and infrastructures which would enable its experimentation. At this stage, almost everything is ready, and the experimentation can start. It is finally becoming concrete with the technical requirements and devices being installed, for the project to become finally concrete and visible. Not everything is going on as initially planned but alternatives have been found.

The technical devices related to the monitoring of energy consumption (smart plugs, sensors, meters) have been purchased and are installed step-by-step. The difficulty remains in purchasing and installing the PVs, BIPVs, and storage batteries, which is bypassed for the moment by the usage of other (wind) energy available in the Energy cooperative.

The modalities are almost all in place: the community is increasingly engaged – although the KPI of reaching out to 200 engaged residents remains a challenge, the data treatment procedures and information flows are all in place. The user profiling and nudges are set up, whereas business logics for energy and waste and blockchains are ready to be used. Business logic for water remains to be done.

The dashboard is now fully operational, and CIRCUIT is experimenting new settings to be more efficient but reduced its activities in the last months. The Energy cooperative is launched, the Circular coins ready to be implemented and the next two waste challenges planned for the upcoming months.

The project is increasingly facing issues related to its essence of innovative project: each step brings in new challenges and questions that need to be addressed, from the philosophical and ethical ones to the more concrete and operation ones. This leads to the more general question as to whether the project is not too much in advance of its time. Finally, one of the recurring issues remains maintaining the engagement of the residents who have already agreed to be part of the project and had been waiting for a few months for it to kick off concretely.

2. FINALLY, IT IS CONCRETE!

One of the main barriers for the recruitment of the residents as well as frustration of the partners in the first phase of the project, was the length of the process to actually get started: to purchase the technical equipment and install it, to evolve on a site that is not built up yet – with related delays in the provision of buildings, to interact with a variety of stakeholders – with their own agendas, and to get on board on a co-created project. As Jan Pecinovsky from EnergieID said, "*Most of the work in the first half of the project happened behind closed doors*." And, indeed, the project was not inactive during its first half. Yet, for the standard resident/citizen, it still remained abstract. *What would come out of it? What concretely would it mean for their daily life's changes? What would be the concrete tools, devices, they could install? How beneficial would it be for them?*

Now, even though the information management systems and business logics are still not visible to the public, the smart meters have been purchased and installed at the house of the first volunteers. The project is concretely entering their houses. At the same time, the application is operational: it can be used by residents to monitor their energy and water consumption. By the end of 2019, they will be fully on board for testing the challenges and related nudges. The recruitment can be made easier, information and experiences can start to be shared amongst the residents. The partners can see the immediate effects of their hard work.

As is discussed in this Journal, not all the aspects of the projects are so rewarding at this stage and many challenges remain. Yet, motivation is high and the potential for actual results is here.

CIRCULAR SOUTH SMART KIT (Source: Circular South)

3. HALF-WAY THROUGH STATE OF THE ART

In a year and a half, the project has set up the mechanisms and infrastructures which would enable its experimentation. At this stage, almost everything is ready, and the experimentation can start. Not everything is going on as initially planned but alternatives have been developed. At the same time, it must be noted, that although CIRCUIT and the activities related to the material stream were quite advanced, they were slowed down in the last six months.

Stream	Technical devices	Modalities	Interface	Activities
Electricity	PV BIPV Storage batteries Smart plugs	Online Community Engagement Transition board	Dashboard	Creation of a 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

UPDATE ON THE ANTWERP CIRCULAR SOUTH PROJECT (Source: UIA Expert)

3.1 Technical devices

The Public Procurements for **PVs** (Photovoltaics), **BIPVs** (Building-integrated photovoltaics) and **storage batteries**, appear to be more difficult than initially planned. A first wave for the procurement processes showed no response from the market. This can be due on the one hand because of the specifics of BIPV (to be tailored to each building) making it difficultly viable financially for providers. It can also be due to the small size of the market. A new procurement procedure is currently going on. At the same time, installing the PVs as planned six months ago also appears to be more difficult than planned:

- Positively, they are installed on the rooftop of PleinPubliek where CIRCUIT is hosted.
- Discussions are still going on with Domitys. Yet, Domitys is an organisation whose headquarters are based in France. Approval has been received from the Belgium directorate, but have still not come back from the French headquarters.
- Discussions are also ongoing with building 3.
- Owners of apartments in building 1 have shown no interest
- Building 10 – the school is not built yet and discussions are still on-going.
- PVs will be installed on the social housing buildings 7, 8 and 12. The investment in these is not in the scope of the project, yet, the

monitoring of these systems will be undertaken within the project.

- Discussions are on-going with Triple Living to install PVs on the top of Building 17 – unbuilt yet.

The project and its experimentation can go on without the installation of these technical devices. The energy will then come from the energy stock of EcoPower. Yet, most of the current renewable energy comes from wind power. As such, an additional option that is envisaged now is to use the energy produced by the PVs of some of EnergyVille's buildings and link it to the experimentation.

PVS AT VITO/EnergyVille (Source: VITO/EnergyVille)

The smart meters (plugs and sensors) are now purchased. Sam Verbelen, Innovation Manager Energy & Water has already installed the equipment at the houses of 10 of the volunteers. These volunteers can already be fully part of the experimentation. In total 83 residents are part of the scheme: half of the smart meters should be installed by the end of September, and the remainder by the end of 2019.

SAM VERBELEN INSTALLING THE SMART KIT (Source: Circular South)

3.2 Back-office modalities

Communication around the project in the light of the engagement of the **Community of New South** is continuing, in order to seek and attract the 200 envisaged residents. After having enlarged the area for the recruitment to the South district (see the Second Journal), the project is looking into other opportunities: the Real Estate Developer of the site envisaged for example to equip some of the apartments with smart meters. Although this is a very worth alternative, the question which remains yet, is how to ensure that these residents will effectively join the scheme. At the same time, many communication tools have been developed now: an animated movie, informative flyer, informative brochure, idea cards, a manual for installation smart meters. An information screen was installed, as planned, but removed because of the lack of visibility from the outside. All the residents joining the scheme are also asked to glue a Circular South sticker on their mailbox.

A RESIDENT PROMOTING HER PARTICIPATION ON THE PROJECT ON HER MAILBOX (Source: Circular South)

Finally, the team of the City of Antwerp will be present in turn once a week during one month at an information booth of the Real Estate Developed at the entrance of the site.

INFORMATION BOOTH AT THE ENTRANCE OF NEW SOUTH (source: UIA expert)

Another focus of the project is to engage the Community in a wider sense: to create momenta for people to meet and exchange about their local lives, what will in turn create a feeling of cohesion and interest in joining the project. In light of this, the partners have designed coasters and a dedicated hashtag: during all the events organised in New South, participants are asked what they could imagine for their neighbourhood to be more circular. They should write it on a coaster and post it on social media with the hashtag #spectaculaircirculair.

The **Transition board** is about to start its support to the project: Aleksi Neuvonen, Derk Loorbach and François Jégou will arrive later in the project that initially planned. As such, they will mostly play a reviewing and capitalisation role, rather than direct contributors to the project.

IMEC has now prepared the possible nudges (see box below). During a co-creation workshop, IMEC

#SPECTACULAIRCIRCULAIR COASTERS (Source: Circular South)

further defined the types of behaviours that could contribute to behavioural change and the main barriers to such a change. While realising that some barriers can be linked to the infrastructure (types of showerheads, toilet flushing options) IMEC readjusted its proposals.

The behavioural change challenges

6 specific behaviour change scenarios have been created, linked to the three streams of water, energy (electricity and heat) and waste. For each stream, two specific behaviours have been identified (that can contribute to the defined KPIs):

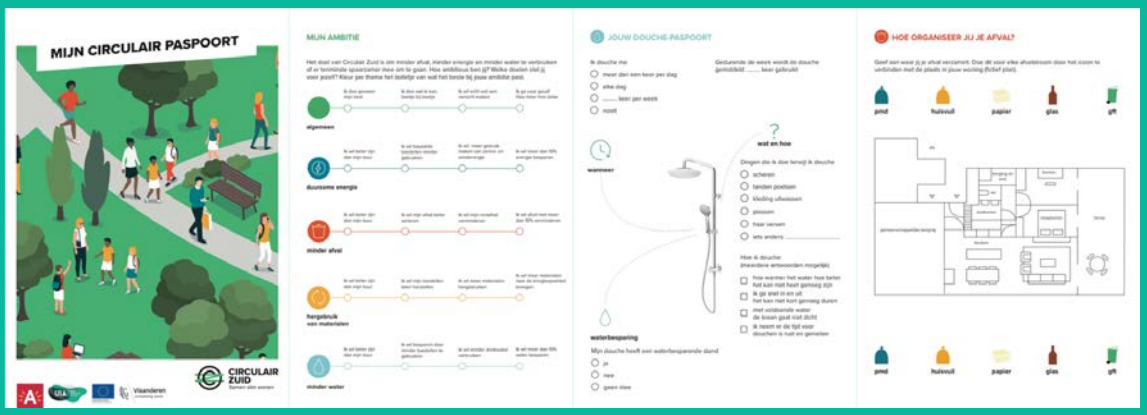
- **Energy: consuming when there is energy being produced; avoiding usage during peak time**
- **Water: running washing when it is full; turning off the shower when soaping**
- **Waste: sorting waste in all the rooms of the house; reducing food waste.**

For each, an experiment set-up has been drafted. The underlying ruling system for implementing the nudges has been deployed and integrated in the data system of the application. 100 rules were designed. For example, if people consume more than the average: a message will appear saying: "your energy consumption is more than average. think about doing…". They will be based on the call for action referring to the 7E Model (see 1st Journal): Engage, Empower and Enable. Yet, not all the rules will have a call for action: the partners will then assess whether informing makes a difference to the consumption as opposed to prompting.

The partner also looked for further qualitative elements via the data collected through the 100-100-100 challenge and also with an innovative way of surveying via the Circular Passport (see box below). They will also assess the differences between campaign approach (ad hoc notifications) vs continuous approach (continuous notifications) and the ways to balance these two.

Circular Passport

In order to ensure a high enough response rate to the survey as well as information that is both quantitatively and qualitatively useful, IMEC, together with Pantopicon, drafted a "Circular Passport". Over 20 pages of questions, it asked about consumption behaviours in all the streams of the project. The questionnaire was sent in paper version to the inhabitants of New South, with a pre-stamped envelope enclosed. The response rate was of 27% which is highly satisfactory for this type of survey and has enabled getting a wealth of qualitative insights for the residents' consumption habits.

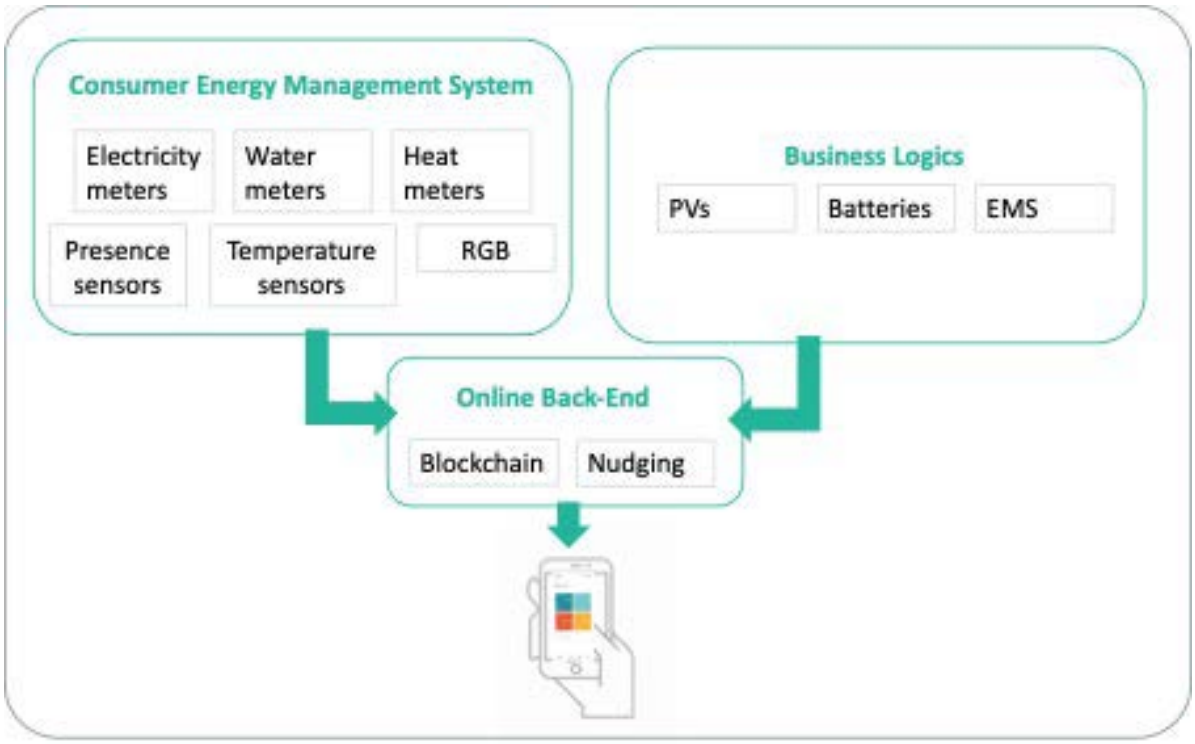


THE CIRCULAR PASSPORT (Source: Circular South)

Procedures for **data treatment** and integration is now fully prepared and ready for use: the IoT data for the smartphones is up and running, as well as the reward system solutions. The metadata service maintenance and the event management solution for messaging between the co-created solutions are also running. Digipolis has followed the minimum mechanisms of the OASC model to which the City of Antwerp has subscribed. As a new approach to the means and pace of data treatment, it appeared to be a challenge, requiring new working procedures, but a very useful and necessary one.

The **business logic** for energy and waste is implemented. The endpoints for ACPaaS data (PV, wind, smart home) were set up and the framework to integrate the business logic applied. A software was developed to collect and virtualize PV (and wind) and to collect Smart home (consumption) data. A Customer Energy Management System, meaning the business logic to handle the resource data streams and to calculate the virtual layer data has been implemented. The data pipeline has been completed. As Raf Ponnette from VITO/ EnergyVille explained, *"this means that any data that is injected into the system from smart meters, waste collectors, … will find its way to the app."*

The **blockchain** reward system procurement is in its last phase. All major functionalities (challenge builder, wallet admin, API's) have been tested and are ready for deployment to the production environment. It remains to be done for water.

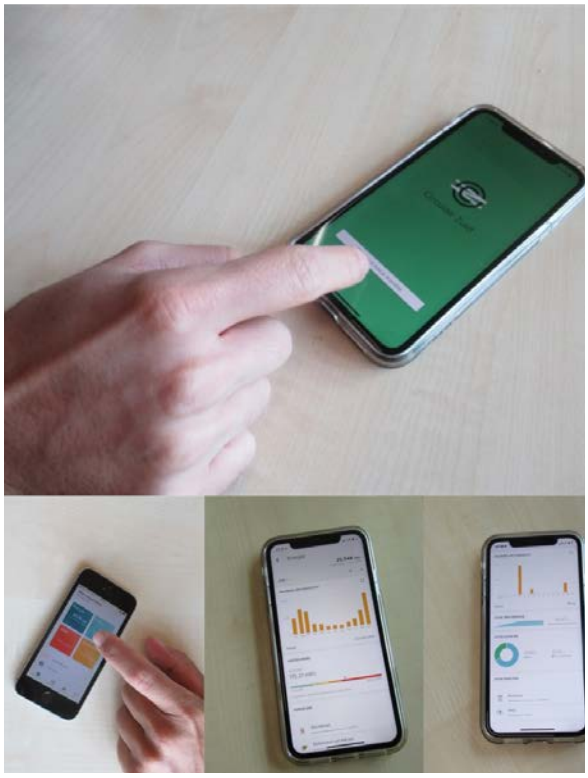


THE INTEGRATION OF THE BACK-OFFICE MODALITIES (Source: UIA Expert based on Raf Ponnette's inputs)

3.3 Interface

The **dashboard/application** is now finalised and fully operational: it was designed, partially developed and deployed to two groups of testers, project partners and the 10 residents who have received their smart meters. The app now features reports (graphs) of all incoming measurements and a view of the blockchain reward system. The messaging system is designed and will take final form by the end of October 2019. The app will also enable the comparison of data against own consumption average and to that of the other residents. Information is now available for energy (electricity and heat) and waste. Data for water is not available yet.

As for the material stream, for the moment there is no information available. The partners are



CIRCULAR SOUTH APPLICATION (Source: UIA Expert)

discussing the possibility to use this section of the app to share information about the stocks of CIRCUIT. The application could for example invite residents to bring in glasses if there were none in stock anymore. Reversely, it could invite residents to buy glasses if CIRCUIT was overstocking them. Obviously, such an approach could lead to overconsumption, yet, the starting point is rather that if a resident at this point in time needs something that is in too large quantities at CIRCUIT, he/she should prefer this option rather than buying it new. The reflexion over this approach is still on-going.

CIRCUIT changed its setting to make it more profitable for its activities: the two containers are merged into a single one to increase the space for visitors to meet, drink coffee, play board games, watch a film, etc. At the same time as an offline community centre along the online one, this should lead to electricity savings. The principal agreement for the purchase of the space for the future building is on-going, but the purchase itself is delayed until October, because of further requests for clarifications in the agreement and summer holidays. The public procurement for the interior works is on-going.

3.4 Activities

The **Energy cooperative** is now designed: it is taking the form of a Citizen Energy Community within the already existing cooperative. In order to further promote it, Ecopower has organised "Energy cafes": these are informal gatherings with debates and drinks which have provided general information about the Citizen Energy Community (on 23/4/2019 with 25 participants) as well as exchanges on other energy related issues, which can bring residents together (on electric car sharing possibilities on 25/6/19 with 11 participants). The next one will be on 15/10 on the legal and technical possibilities to share energy collected from PVs by all the members of a given community. So far, 20 residents are members of the Citizen Energy Community.

ENERGY CAFÉ ON THE CITIZEN ENERGY COMMUNITY, 23/04/2019 (Source: Circular South)

The **circular coin "Circules"** has been designed. During a co-creation workshop, residents shared about the ways they would like to use their Circules. These suggestions were input into the overall design of the scheme, which is now composed of three main players:

- Users, residents benefitting from the Circules;
- Earners, those who generate Circules: Ecopower and the City of Antwerp;
- Burners, places where they can be used: at the City Of Antwerp 's facilities (e.g. swimming pool, cultural events, Ecohouse) and workshop at CIRCUIT.

A group reward system is also being currently researched: The participants would also be able to use their Circules as voting mechanism, in a similar way as for crowd sourcing: if the collected Circules reach a predefined limit, the reward will be delivered. For example, a playground equipment or a neighbourhood barbeque could be funded this way.

CO-CREATION OF THE CIRCULES (Source: Circular South)

Regarding the latter, the partners have not identified yet the way to operationalise these as money cannot be exchanged within UIA partners for activities of the project. Regarding the other activities, the City of Antwerp made available a budget of 5,000 euros from its own internal budget. For accounting purpose, a euro value is given to each Circule, yet it is not displayed officially. The technicalities are ready for usage on the application and the City of Antwerp will circulate a White Paper on the Circules in the upcoming weeks.

Two new **Waste Challenges** are also planned: in January 2020 and May 2020. They are currently in preparation. They will be city-wide. A new **composting** unit was installed on 9 July 2019 at PleinPubliek and two information sessions organised.

NEW COMPOSTING UNIT AT PLEINPUBLIEK (source: Circular South)

The **group purchase** is currently under definition and the procurement processes for the intermediary organisation also on its way. Major questions remain as to the way to define a circular product and the types of products which can be offered.

The challenge around **plastics** is still being explored: options have arisen, but in addition to the fit with existing law as explained in the First Journal of this project, it now appears difficult to create a specific collection system, which would either be supported by existing Waste collection departments (requiring complex collaboration arrangements within the Municipality) or be taken as a viable experimentation for market development of new products. Partnerships with companies, which want to test out new products, could be envisaged, but only at their premises.

CIRCUIT has organised one event per month during the summer: A Plastic Free Festival (June, 100 participants), Sustainable travelling (July - 75 participants), Energy night: toaster challenge. What does it take to produce enough energy for toasting bread? (August - 20 participants). 3 more are already planned: Circular South plogging[1] (29/09), bike repair (29/09) and a sustainable food market (October). In order to further support the organisation of activities at CIRCUIT, De Kringwinkel hired together with PleinPuliek an extra event organiser.

[1] Plogging being an activity which combines jogging with picking up litter

SUSTAINABLE TRAVELLING EVENING (JULY - 75 PARTICIPANTS) (source: Circular South)

The Business Model for its future activities has not evolved in the last 6 months because of a lack of human resources. CIRCUIT is facing the challenge of getting the organisation 'de Kringwinkel' fully on board, since its activities are totally new and unknown territory. The services that CIRCUIT can offer will be further refined during a co-creation workshop with residents on 20/09 and should help work on this. The actual purchase of the new space for Circuit is once again postponed because of negotiations around the contract. This does not affect the move into the building, which is bound to its construction, planned for the end of the UIA project, but has created frustration because of the absence of finalisation of this process.

Yet, CIRCUIT is facing new and recurring challenges. It had to readjust to a change in project coordinator. At the same time, it has decided to reduce its activities in order to make the current location more effective (see the reorganisation of the containers explained above). However, the location at PleinPubliek is a major limitation for many residents to attend the activities.

4. ON-GOING CHALLENGES AND REAJUSTMENTS

4.1 Being innovative raises many questions and worries

Now that the project is becoming concrete, a first – philosophical and ethical – evaluation of the project is going on, relating to some of the questions and worries that relate to any innovative project:

- *Does it make sense for the users?,* indeed, the project was designed upfront, top-down, and now that the partners are testing their ideas with the real lives of residents, they face a twist in their understanding. Also some residents might take it as a commercial offer;
- *How much time and energy will the resident engage?,* as it will require mental and time investment;
- *What do we actually know?,* in particular the partners with a more hard scientific background shared their needs to go more into social sciences, as an eye opener, and enabler to further understand the context of implementation of their technical devices;
- *Is it going to work?,* technically will everything run smoothly and can adaptation be set up if need is?
- *Can we predict what will happen?,* the partners know they cannot, "because it is an innovation project" and as such cannot have a detailed plan, but that requires on-going control and flexibility for readjustments. As Raf Ponnette from VITO/EnergyVille said, "*we are used to work with uncertainty but not with so many alternatives*".
- *How can we ensure that both offline and online activities are truly integrated?* At an entry level, the partners are combining interactions face-to-face and via social media, for example to promote their activities such as the Ecopower *'s Buurtenergiecafé.* As Ine Swennen from EcoPower said*, "I guess that our online audience differs from the one that we try to address offline. This can be seen as an important opportunity. Based on existing research it can be stated that activism for Generation Z means being present in an online community, whereas the older generation likes the idea of real-life action. These points of view require a slightly different approach."* Other partners point to the reward system as the most obvious link between online and offline activities: activities in person can result in online currency, activities online will result in the purchase of physical services. Yet, ensuring this requires on-going discussions and exchanges as well as adequate process between the partners which are not always easy to implement.

4.2 A project ahead of its time?

The existing market for BIPVs is not mature yet: the commercial risks related to such tailored devices are too high for any company to jump into it. Finding sites to install PV and batteries

also turns out to be really challenging, with a lack of interest and motivation. Because of the ownership of water consumption data by the Water company, and the complexity to access it, integrating the water data into the project appears to be difficult and uncertain: concretely, the technical room, where the official water meters of the water company are installed, is situated in the basements of the buildings which is too far from the apartments (where the Circular South smart home gateway is put) to have a qualitative wireless communication via the wM-bus protocol. Two solutions have been analysed:

- using the data from the water company (Waterlink). Although digital meters have been installed recently as well by this company, it faces similar problem due wireless communication (Sigfox IOT platform). As such, this is not an option.
- an aggregation of the meter data in the technical room itself after which the joint data is sent via a GPRS-connection to the Circular South platform. This solution will be explored further, but will bring extra equipment costs, which can be justified in relation to the number of users.

There is not enough solar energy produced yet in Belgium overall so that the test of electricity produced by solar panels be totally valid yet.

From the side of the residents, it is a risk as well: they do not know how much the smart meters will cost them in terms of energy, nor the time, energy and money they will have to invest in it. Investing in the cooperative is also a risk.

As Koen Kerckhofs from Digipolis explained, "*In the past few months we experienced again, as in many other smart city projects, how the nature of real-time processing of IoT data requires robust solutions to answer imprecisions of data stream, to ensure system stability and performance*." For the IT partners, the challenge is to react instantaneously to data follow-up and potentially arising issues, whereas in other projects it would have a few days to adjust the system.

Yet, some of the partners still fear to lose control: time pressure is there as the project is entering its second half, and uncertainties remain regarding the way the application and nudges will work, but also the way the PVs will be purchased and installed, how the group purchase will be organized, whether the PMC deposit system will function, what will happen of CIRCUIT…

As such, it is difficult to say whether the project is really in advance with its time: the technology is here, but implementing, inserting it into the market and consumer habits still requires time: going to the softer and more human-based aspect of the project.

4.3 Maintaining the interest of residents

The partners have organised an increasing number of activities to recruit residents. They need the interactions with them in order to update the application on the basis of regular comments, complaints, suggestions, bearing in mind that the whole system will not be changed but can only solely be adjusted.

However, a new difficulty has been to maintain their interest and engagement. It is still difficult for example to attract interest when some aspects such as the PVs and batteries are not there yet. This can in turn limit the snowballing effect amongst neighbours. Even though many activities are organised to maintain the community, many are organised at CIRCUIT, which is outside the

neighbourhood centre and attracts a public, which is not that of inhabitants of New South. Some activities are too much distributed along the time to ensure that there is always something going on.

Now that the project is becoming concrete, it will make more sense to the already recruited participants (as well as to the new ones). The upcoming challenges and the Energy cafes will create new momenta for interaction. Finally, the increasing use of social media will also contribute to the binding of the community.

4.4 Overview of challenges

Based on the above, it appears the challenges of the project in the past six months are being mitigated and that the team is engaged and motivated to identify (creative) solutions. They can be summarised as per the table below.

MAPPING ANTWERP CIRCULAR SOUTH AGAINST THE ESTABLISHED UIA CHALLENGES

Challenge	Level	Observation
1. Leadership for implementation	Low	The change of project coordinator went smoothly.
2. (Smart)Public procurement	High	Public Procurement procedures have become an issue in the difficulty to identify interested companies for the installation of PVs, BIPVs and Storage batteries. The City was forced to launch two calls to raise interest, with market research in between the two. Using public procurement can also be cumbersome in instances where only small tasks are being contracted: it is the case for the experts for the Transition Board who could not be contracted directly. The public procurement procedure required by the City of Antwerp delayed their recruitment process.
3. Organizational arrangements within the urban authority	Medium	As mentioned in the previous journals, the project team needs to work with other departments, e.g. the Waste collection department, which has its own priorities and agenda. Inviting them to join a project which was designed without them is a long process of engagement and conviction, combining trust building together with presentation of added value for all parties.

4. Participative approach for co-implementation	**Medium**	Within the existing room for manoeuvre of such a project that had to be decided upfront, co-creation keeps on being at the heart of the project within the partnership and with the citizens. Yet, it might be underlined, that as previously, online and offline activities are taken as separate and in particular, the activities of CIRCUIT could be better integrated with the rest of the activities: reflexions about integrating waste data in the app are on-going, which would nicely link offline and online activities in this regard. At the same time, CIRCUIT was affected by its own challenges (changes in the team, DeKringwinkel's limiting philosophy for change, never-ending process of building purchase, lack of finalised Business Model, lack of adequacy of the current site) which have limited its proactiveness in this regards. The communities mobilised via the Energy café, Information Point and CIRCUIT could be more directly and convincingly targeted for the test of the smart grids and app.
5. Monitoring and evaluation	**Low**	Monitoring and evaluation methodology has been prepared on the level of an indicator (quantitative and qualitative) list. Methodology and frequency is depending on the specific actions or events enrolled and available instruments (digital platforms, questionnaires, interviews, counting visitors and participants, …). The first waste campaign for example delivered good results in the way participants reduced their residual waste for almost 70%. Thanks to the used digital platform and questionnaire a profiling of participants could been made and results reported. Another example of monitoring is a constantly accounting for every participant or visitor of events, co-creation sessions, workshops, … by all partners. And for the online community a customer management platform is used to follow up participation.
6. Communication with target beneficiaries	**Medium**	Although the final KPI (200 residents) is not reached yet, an important wealth of communication activities are organised to recruit the participants and maintain their interest. As the project is operating in two districts now, a new one and an existing one, the main strategy remains to connect residents to the project of Circular South by inviting them to all sorts of events the project partners organise and to give them a nice experience, through which we explain the project hoping to convince them to participate: energy cafés (focus on green and shared energy), vintage and design events (focus on keeping materials in the loop), workshop bike repairs, information & troubleshooting sessions smart homes (to be scheduled soon). In addition, the project has worked on 2 types of communication products: global marketing products such as the animated video, sticker, flyer (attracting people) and products to explain the project to the participants, such as a toolkit and instruction manual smart meters.

7. Upscaling	**Medium**	The solutions for integrating water data will effect upscaling of the project. The solution of integrating the data in the meter room itself can only be justified when applied in big buildings with multiple users. The second solution is easier to scale up, because depending on the system chosen by the water company itself and so applicable to all buildings. Concerning the PV-installation, investment delay has some effect on scalability. Within the current regulatory framework, it appears to be very difficult to make an attractive proposal for residential apartment buildings. Nevertheless, there are indications that the regulatory framework will change in the coming years, including the transposition into national and regional legislation and regulations of the 'Clean Energy for All Europeans package'. This would create possibilities for upscaling. Consortium partner Ecopower is therefore strongly committed to the creation of an energy group (CEC). The CEC can guarantee a first start-up of projects within the current regulations and a full exploitation of the potential as soon as the regulations permit

5. WHAT ARE THE NEW LEARNINGS OF THE PROJECT?

The **motivation** needs to be kept not only within the residents but also within the team of the project. Although it is finally becoming concrete, and partners can see what they had been waiting for to happen for a year and a half, multiple issues challenge their everyday lives and question their functioning and opportunities on a basis which has become too frequent. CIRCUIT in particular is highly affected by the challenges within its team, within its own organisation, related to the never-ending process of building purchase, the lack of resources to design a Business Model, the current site which is not optimal.

Related to the above, **uncertainty** is also a key component of the project: even though it was highly planned and detailed in advance, unpredicted events and reactions (of the Real Estate developers, of the delays in construction which delay the arrival of residents, of interest of residents to become part of the project, of outcomes of the tests) require a large **mental and operational flexibility,** which is also a new skill and attitude to be adopted by some of the partners.

Finally, looking for **synergies** and **complementarities** has become a key component of the project as a matter of "survival" for its activities: activities of partners need to benefit each other, cooperation with extra partners is sought, bonding within the team has become central. It has been for example the case for the collaboration with the social housing company which organised a welcome event for its tenants to which the Circular South project was also invited and could introduce itself. As another example, the PMC challenge transcends the core tasks of the Waste department: as such, the project has needed to work with external partners who could help in enrolling an up-cycling project. The experience of 1.5-year Circular South confirms the importance of a good bonding within the partnership and within the partners teams: staff members who believe in the project, with mutual respect and trust and with a hands-on spirit.

6. WHAT'S NEXT?

In the next couple of months, the focus of the project will be to go on the ground, to experiment and do the first analysis:

- Further reflections about the best options to install PV, BIPVs, and storage batteries;
- Further installation of smart meters;
- Further work on the business logics;
- The project will benefit from the inputs from the transition board;
- Monitoring of data integration;
- Launch of the nudging experiment;
- The Community of New South will continue on being engaged;
- Tests and improvement (if relevant) of the app;
- CIRCUIT will continue its activities further develop its future base on the finalisation of the cooperation agreement with the real estate developer, and will work further on its Future Business Model;
- The Citizen Energy Cooperative will grow in size;
- The Circules – Circular Coins will go "on the market";
- The next waves of the Waste challenge will be designed and launched; and,
- The group purchase and PMC challenge will be designed.

In our next journal, to be published Spring 2020, you will get more details about those!

7. ACKNOWLEDGMENTS

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Urban Innovative Actions

Les Arcuriales
45D rue de Tournai
F- 59000 Lille

+33 (0)3 61 76 59 34
info@uia-initiative.eu
www.uia-initiative.eu

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