

## **Circular Berlin - next steps**

### **Problem Statement**

On a macro level, the Circular City approach is about urban metabolism, localization of production processes through effective resource use. It means city material flows' reflection and the generation of innovative solutions starting with material and further product design, where the concept of waste is eliminated.

The strategies, to carry it out, are either top-down from regulation or bottom-up, where grassroots work or communities provide the solution.

What city can do to promote such strategies: develop cities scale planning via support of network ecosystem, implementation circular procurement (e.g. energy for building), empower the commons (maker spaces and circular innovations), promote experimentation zones on the city level.

→ Keywords:

- Urban metabolism and regeneration by design
- City role (top down vs. bottom up)
- District role (methodology for urban testing)

### **Berlin challenges and opportunities:**

Current Berlin City strategies focus

- Accessible housing for growing population
- Social inclusion preserving culture diversity
- Job creation through creative industry and production

*Question: how circular economy can contribute to these objectives?*

1. *Challenge 1 - Berlin is NOT a productive city, importing most of its products.*  
Thus on material flow approach, not many industries have an impact on the inflow stage, however, the problem of outflow remains in Berlin boundaries.  
*What does productivity mean in the not productive city?*
  2. *Challenge 2 - Circular economy topic placement.*  
The Circular Economy (Kreislaufwirtschaft = Abfallwirtschaft) is part of work for Berlin Senate for Environment and Transportation and Climate. It is mostly reflected under strategies for Berlin Waste Management. And maximum related to Energy topic as part of Berlin strategy for Energy and Climate 2030, also as the waste reflects the approach waste to energy. Currently, this topic has less connection with the industries, thus limited maximum to efficient recycling.  
*How to shift circular economy boundaries towards industry specifics processes?*
  3. *Challenge 3 - Berlin is very decentralized.*  
There is no local driving force for this topic in the city. However the topic is discussed either on the district levels as innovation approach, where the need for technology transfers appear; or in different networks like German Networks for Social Entrepreneurship, or Research centers. Discussion is important but there is no one agenda to drive it forward. In Berlin currently it correlates with the Zero Waste movement, which is also supported by the Berlin Senate UVK.  
*Who should take the leading role in the transformation process?*
  4. *Challenge 4 – Cities competition*  
The topic of circular city picked up as a competitive strategy by several cities, it represents a threat to Berlin creative and innovative solutions that could leave the city for better conditions.  
*When does time to action start?*
1. *Opportunity 1 – existing local production areas*  
Such industries as Construction, Food and Agriculture could be localized. A building as a product, constructed in Berlin, is also utilized in Berlin and demolished. Moreover, there are local actors in Berlin who understands already the concept and ready to work with it, as well as research centers.  
Innovative ways for local production and fabrication is also essential here, and it also presents or at least could be co-developed.  
*This is the driving opportunity that so far not utilized fully.*

2. *Opportunity 2 – existing grass root movements*

Textile and fashion has a high acceptance rate for circular (sustainable) development, incl. local production. Mainly it evolves via fashion sustainability movement and sustainable lifestyle, which is presented, in the city.

The whole industry evolved just from the grass root, and it a bright example of grassroots transformation. Circumstances were access to spaces and ability for creative testing in design and coloring etc.

*The next step is enabling these approaches.*

3. *Opportunity 3 - existing knowledge base*

Across such areas as construction, food and agriculture, textile, materials, and recycling there is knowledge around circular process partly developed in the universities. These areas should be related and not only across the research institutions.

But not knowledge around circular economy scaling up approach, circular economy company development (which is different, Purpose, Governance, Networks, Ownership, Finance (has to be changed, because it is a different system)

*In some universities, some pieces on the circular economy are taught, what gives an opportunity to develop cross-university curriculum*

## Circular Economy projects focus in Berlin:

1. Circular Economy hub – strengthen the ecosystem
  - Support experimental approaches
  - Become a networking hub and a facilitator to connect local stockholders (mostly small initiatives with support for development)
  - Facilitate scaling strategies (ecosystem network, open source as scaling approach)
  - Develop projects demand in the city for circular economy and relate the initiatives to it

<https://www.circularglasgow.com>  
<https://rotterdamcirculair.nl/en/>

circular.berlin targets the same, but more sophisticated system is needed and team to run it!

2. 2.1  
Circular District impact – from research to implementation
  - Communities' engagement for understanding household consumption, local business material flows (shops, restaurants)
  - Household material flow transparency for e.g. food and bio-waste, rainwater management, energy use
  - Derive local circular economy learning, and implement them on the district level to evaluate the impact
  - Focus on circular innovation transfer on the district level

Other project examples: <https://iilab.org/projects/engineering-comes-home.html>  
<https://eureka.eu.com/innovation/circular-economy-malmo/>

- 2.2  
Circular City impact – from research to implementation
  - Replication district approach
  - Understand city material flow
  - Understand and support Berlin City on the topic where and how it makes sense the best to use Circular City as a transformation strategy
  - Review current City strategies and incorporate Circular Economy approaches into it.

<http://circular.berlin/circular-economy/#circularcity>

3. Circular Economy education:
  - Develop a study curriculum, based on the existing subject topics in the research institutions / universities
  - Focus on textile, construction, food and agriculture, material and recycling and Ecodesign. Process understanding across areas and system view
  - Curriculum complimentary approach, e.g. Weissensee Kunsthochschule has green material design focus, but does not have enough laboratories for testing this material, thus they need next step collaboration with the material testing approach
  - Focus on the differences between linear and circular models to identify the transition steps

## Circular Berlin role (detailed view activities)

### Circular Berlin – I – strengthen the ecosystem

- Bring visibility
  - o Document (currently happening)
  - o Make videos / mockups and sharing the knowledge of projects (partly exist)
  - o Explain circularity approach (currently happening)
- Explore scaling up opportunities for the initiative
  - o Bring value chain view as ecosystem development
  - o Open source approach as the model to scaling up the solutions
  - o Spread a discussion among Circular Economy professionals on regarding definitions, approaches for the city, and productive ecosystems in the city enabled by circular economy.
- Involved recycling sector as an organization that might set demand for material specification
- Bring transparency into funds system for circular economy work
  - o Focus on impact funding
- Develop testing areas (spaces) for the initiatives
  - o Ask for project and pilot zones in the city (spaces is needed)
  - o Maker spaces are needed
  - o Conduct hackathons / maker-thons
  - o Cooperation with the innovation hubs (mainly for the testing and experimentation)
- Understanding of the local regulation and its engagement / impact

### Circular Berlin– II – From research to implementation

Activities:

- District oriented work (???)
- Project acquisition in the city for implication (some ideas around it)
  - ➔ Currently it is possible to get project access under Zero Waste Agenda
  - ➔ Visit Berlin is searching for the projects, focusing on the City cleaning, connecting tourism and cleaning approach
  - ➔ Identify short term and middle term projects in the city.
- Promote projects for Event Organization / Fairs, for city procurement.
  - ➔ Operating with Berlin districts to launch the projects and innovation transfer
  - ➔ Got access to pilot for the current building infrastructure for Building as Material Data Bank
- Review the procurement policy (e.g. specifications for procurement, like in Textile collective procurement approach)
- Set demand for the roadmap, by showing city potential
- Co-promote the demand from communities for the regulation change

### Circular Berlin– III – Education approach

- Curriculum is based on the specific area
  - o TU Berlin – Construction (incl. Refurbishment), C2C, Materials in Construction, Recycling, Urban Mining, Water treatment, Energy (not sure about it so far)
  - o Weissensee Kunsthochschule – EcoDesign, Green Materials, Production in Textile and Fashion
  - o Akademie für mode und design – Circular Design in fashion
  - o Kompetenzzentrum Wasser – water cycle and nutrients
  - o F.IZM – ecodesign, electronics, recycling
  - o Food and agriculture – so far only business involved
  - o Innovation in recycling – missing (?)
  - o Missing (!) – circular economy scaling models (ecosystem, and open source), circular economy finance, circular manufacturing
- Curriculum is based along the circular economy value chain for bio cycle and technological cycle
- LCA and Material flow analysis
- Join the international network of projects (e.g. as “Materiom”, “Textile academy”)

## Current Stakeholder landscape

### Industry level:

#### Companies:

- Die Nachwachsendestadt (P&P A. Hutten und Palaste, ZRS)
- ARUP
- Berliner Wasserbetriebe
- Recyclers (someone has to engage them into dialog!!!!)
- (Startup ecosystem - big list)
- Food and agriculture (need to review)

#### Research centers

- TU Berlin (TU Berlin - Center for Innovation and Science on Building Greening)
- TU-Berlin - Institut für Architektur
- TU-Berlin – Circular Economy Department
- TU Berlin - Natural Building Lab
- TU Berlin - Institut für Stadt- und Regionalplanung
- Kompetenzzentrum Wasser
- Bundesanstalt für Material-forschung und Pruefung
- Weißensee Kunsthochschule Berlin – green lab, textile
- Akademie für Mode und Design
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#### Networks and Open spaces

- Fab Lab Berlin
- Future Fashion Forward / SourceBook
- <http://www.boetzowberlin.de/> (where FabLab and ottobock is moving),
- Tempelhof - <https://www.thf-berlin.de/tempelhof-projekt-gmbh/siwana/>,
- UFA Fabrik
- Malz-Fabrik
- CRCLR

#### International networks

- Climate KIC
- EIT RM
- E Bay Foundation
- Ellen MacArthur Foundation
- ICLEI

#### People I came across related to the topic in Berlin Politics:

Dr. Homann - Senate department of economics

Christian Rickerts -permanent secretary at the Senate Department for Economics, Energy and Public Enterprises

Mr. Schwilling - Senatsverwaltung für Umwelt, Verkehr und Klimaschutz (Zero Waste focus development -

<https://www.berlin.de/senuvk/umwelt/abfall/abfallstrategien/de/wiederverwendung.shtml> )

Stefan Tidow - Staatssekretär für Umwelt und Klimaschutz

Berlin's Districts:

<https://www.berlin.de/umwelt/behoerden/umwelt-und-naturschutzaemter-der-bezirke/artikel.228641.php>