VITO CONVERTS IDEAS INTO REALITY

FROM SCIENCE TO APPLICATION

VITO SUPPORTS THESE SUSTAINABLE DEVELOPMENT GOALS
“VITO is fully engaged in accelerating the transition towards a circular economy by:

- developing processes and technologies for industry to upcycle their waste streams into value added resources and products;
- unlocking the potential of a circular economy for Flanders and for Europe,”
Circular economy strategies

Upcycle industrial waste into new products

Optimise products and processes
Circular Economy
An economic system ‘where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste and emissions minimized’.

2 main opportunities for cities:
- COLLECTION & RECYCLING
- REUSE

Source: EC 2015
CLOSING INNER CYCLES: REUSE CENTER MUSCAT, OMAN
Role of a reuse center

A reuse center plays a key role in the evolution towards a more circular economy.

It acts as a consolidation point in the collection chain and identifies, repairs and refurbishes goods to create high quality second hand products with warranty and guarantees proper treatment for the residual waste.

A successful reuse center will require an integrated set of collaboration processes between the different stakeholders: government, waste management companies, knowledge centers, universities, charities, retail outlets,

The reuse center and the integrated collection chain will also act as a knowledge and awareness catalyst to accelerate the process towards a sustainable and circular society.
Vision on the reuse center

Objectives

1. Go circular: Divert waste from landfills & reduce carbon footprint

2. Build a general awareness on sustainable consumption

3. Perform research & education projects

4. Be financially sustainable

5. Create meaningful employment

6. Develop In-Country-Value by retaining quality material within the economy & creating business opportunities for SMEs

7. Collaboration & Partnerships with existing initiatives
‘De Kringwinkel’ in Belgium (Flanders)

Social recycling economy

One brand
• 30 re-use centers
• 147 stores
• 83,000 Tons of goods collected
• 30,500 Tons of goods sold (5kg/inhabitant)
• 6 mio sales transactions
• 5,400 employees (80% social economy)

Key objectives of ‘De Kringwinkel’

1. Create jobs and growth for people with distance to the labor marked = Social Economy

2. Diminishing waste by reuse
Partners in the project
Different responsibilities

- VITO
  - Basic engineering of the site (internal/external) to support the cost benefit analysis
  - Site conceptual design
  - Design of logistics processes and verifying internal ops
  - Developing the pricing approach

- Möbius
  - Operations consultant
  - Logistics process design
  - Site conceptual design
  - Cost-benefit analysis
  - Organizational design

- Ecor Ingénierie
  - Developing the pricing approach

- de kringwinkel
  - Site conceptual design

- Reuse network Antwerp
  - Develop reuse vision
  - Assessing current reuse efforts and constraints
  - Material flow auditing
  - Performance assessment of reuse center

(Project consortium lead, responsible for project management)
References
SQU – Oman: Design reuse center

Strategic moment:
Be‘Ah and SQU want to introduce circular economy into Oman by a reuse center that should host circular events, workshops and speakers and where all Omani could come and buy high-quality second-hand goods (awareness is key!)

Results
- Vision on the reuse center and its role in Oman society
- Financial analysis of three possible scenarios
- Social and environmental impact analysis of the three scenarios
- Recommendations on how to manage the future internal operations
- Proposition of warehouse lay-out
CLOSING OUTER CYCLES:
H2020 PROJECT COLLECTORS
Many territories in the European Union still lag behind when it comes to achieving current recycling targets, due to specific challenges or lack of resources.

“The COLLECTORS-consortium is convinced that good performing regions and cities have the potential to serve as good practice examples for regions with similar local contexts.”
INVENTORY

242 waste collection systems identified and described on ~30 parameters
Covering 25 European countries

ASSESSMENT

Selection of 12 cases studies

Assessment of performances

Material quality for recycling
Societal acceptance (citizens)
Economic performance (CBA)
Environmental performance (LCA)

Identification of complementarities, trade-offs, and opportunities.
COMMUNICATION is key!

Very limited information shared along the value chain between municipalities, Producer Responsibility Organizations and recyclers

Enhanced cooperation & information sharing between collection, sorting, recycling and producers of would improve the quality of recyclable outputs and uptake of markets
Two main opportunities for circular economy in cities:
- COLLECTION & RECYCLING
- REUSE

Take into account how changed consumer behavior & new technology will impact society

Communicate, cooperate, share information with all stakeholders in the value chain

Education & awareness for the circular economy are crucial

Circular economy can create meaningful employment
Let’s make the world a better place!

THANK YOU!

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**WIN – WIN – WIN**

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<th>Government</th>
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<th>Investors</th>
<th>Students</th>
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| - Environmental awareness  
- Help achieve diversion goals  
- Material flow management | - Increase in public welfare  
- Job opportunities for disadvantaged sector | - CSR Opportunity  
- Increased availability of second hand goods | - Participation in reuse initiatives  
- Trainings opportunities |

**General Public**
- Job opportunities  
- Easy avenue to donate  
- Increased availability of second hand goods

**Reuse Center**
- Cash positive project
- Increased availability of second hand goods
- Items pre-certified for safety and quality; no expense spent on repairs

**Outlet Market**
- Additional revenue stream  
- Larger donation network

**Charities**
- CSR Opportunity

**Scrap Dealers**
- Source of raw material

Source: Be’ah, 2016