

Examples





AIDG

Please find below 20 examples on real, implemented green growth ideas in a field of **Waste Management.** 

Examples are provided from these countries:

- Lithuania (4 units)
- Sweden (4 units)
- Denmark (4 units)
- Poland (4 units)
- Germany (4 units)



This material is prepared in accordance to INTERREG V-A South Baltic Programme project "SB BRIDGE – Building bridges for green tech future" (2019-2021)



European Regional Development Fund



# 1. Lithuania, RPM, Defulco, 2012



Devulco RRP<sup>™</sup> can be used as a cost-effective and technologically sound substitute for virgin rubber and Carbon Black

http://devulco.eu/en/technology



## 2. Lithuania, **Polyol, Neo Group,** 2011



PET based NEOPOLYOL is produced by the chemical recycling of industrial PET scrap, which comes directly from the PET production process

Polyol offers a number of positive characteristics, such as good stability, low metal content and low acid number

https://neogroup.eu/en/products/#polyol



# 3. Lithuania, Insectum, 2018



Main goal of returning food waste back to food chain using black soldier fly

Insect rearing technology, which would be self sustainable even in cold climates



Receives plant biodegradable waste and processes it into sustainable insect products

http://www.insectum.eu/en/



# 4. Lithuania, Textale, 2018



A platform for sharing secondhand clothing and sustainable design products for textile waste reduction

TEXTALE accepts suitable clothing, footwear, accessories and home textiles, sorts them, prepares them for use, distributes them for support and sales, repairs some parts, renews them, uses them as secondary raw materials - for remodeling projects.

https://textale.lt/



# 1. Sweden, Ironarc, Scanarc Plasma Technologies, 2015



A plasma generator is a device that transfers electrical energy to a very hot gas

The technology can be implemented in industrial processes that have a need for hot gas produced without fossil fuels

https://swedishcleantech.com/news/recycling-andwaste/plasma-process-can-halve-carbon-emissions/

https://scanarc.se/products/



# 2. Sweden, ORC system, Againity, 2013



The modular turbine system is delivered as a turn-key solution either on a frame or in a container and ready to operate after installation to the heat source, cooling water/air and local power grid

#### Based on ORC system (Organic Rankine System)

https://swedishcleantech.com/companies/989/againity-ab/https://againity.com/SB BRIDGE: Topic - Waste Management



# 3. Sweden, Ash2®Phos, EasyMining, 2016



The technology makes it possible to extract ammonium phosphate from mining waste or other sources in an energy-efficient way

The sludge ash can be transformed into raw material for phosphorus extraction, meaning that a circular system is created for the precious phosphorous

https://swedishcleantech.com/companies/1949/easymining-sweden/

https://www.easymining.se/



# 4. Sweden, C-Green, 2018



OxyPower HTC – which makes use of hydrothermalcarbonisation (HTC) to convert sludge to bio-coal in just a few hours

One of OxyPower HTC plant can convert 30 000 tons of sludge into 5 000 tons of bio-coal per year

https://swedishcleantech.com/news/water-and-wastewater/1276-c-green-makinguse-of-sludge/

## 1. Denmark, BitumenMix,Tarpaper Recycling, 2016



Collects and recycles roofing felt waste to be used in asphalt production

Used as both bottom and top asphalt layers on roads

The asphalt has the same quality as asphalt produced without BitumenMix

https://www.tarpaper.eu/tarpaper-gb-2016/method



## 2. Denmark, Billund Biorefinery, 2016



The conventional wastewater treatment plant has been remodelled to carry out the processes indicated

http://www.billundbiorefinery.dk/



# 3. Denmark, Innosort, DTI, 2018



Lightning fast robots equipped with advanced sensor technology will soon start sorting through waste in order to recover raw materials

> Developmen Fund

The sorting of electronic waste in particular has huge potential https://www.dti.dk/specialists/robots-with-superpowers-to-sort-waste-for-recyclingpurposes/36798

## 4. Denmark, WICE4Soil, DTI, 2019-2021



Uses former foodstuffs by feeding it to Black Soldier Fly Larvae (BSFL) and, in return, making use of both the larvae for non-food applications (e.g. pet food) and the insect frass for soil improvement

#### Bio-conversion of food wastes

https://www.dti.dk/wice4soil-and-8211-waste-insects-and-circular-economyfor-soil-improvement/42384



## 1. Poland, Oddam Odpaddy, 2013

### NA KAWĘ CHODZĘ TYLKO Z TYM JEDYNYM #ZWŁASNYMKUBKIEM







The initiative provides online maps with information on collection points for different waste streams, composting facilities, stores with zero packaging, etc.

Organises meetings and working groups dedicated to sustainable development and circular economy.

http://oddamodpady.pl/



### 2. Poland, FuelCal, Evergreen Group, 2019



technology for the processing of municipal thickened sewage sludge, sewage sludge from the agri-food industry, bagasse, grounds and biodegradable waste, and selected animal by-products of category

FuelCal® is a

#### https://evergreensolutions.pl/



# 3. Poland, Anoxybed<sup>™</sup>, Symbiona, 2016



The AnoxyBed technology is a very efficient tower an aerobic reactor

The reactor reduces pollutants and, at the same time, converts them into biogasproviding a sustainable and safe energy source

Its capacity allows to treat wastewaterranging from 2,000 mg/l of COD (chemical oxygen demand) to very high concentrations, even 20,000 mg/l of COD

https://greenevo.gov.pl/en/technologies/anoxybedtechnology/



# 4. Poland, Sultech®, Marbet Wil, 2019



Turns hazardous waste into useful and safe products, implementing a highly demanded concept of circular economy

The product of the technology is 100% recyclable and meets low CO<sub>2</sub> emission levels

The production process does not require the use of water, concrete or other chemical substances

https://greenevo.gov.pl/en/technologies/stabilisation-of-hazardous-waste-and-itssolidification-with-sultech-sulphur-concrete/



## 1. Germany, eWaste, Axians, 2016





A software solution for waste management

Digital solutions offer great savings potential for many other areas of waste management

Simply switching from paper to electronic invoice processing could reduce costs considerably

Fund

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https://service.axians-ewaste.com/fum/de/home/news https://www.axians.de/de/blog/2016/10/24/abfallwirtschaft-4-0-wie-sich-potenzialebesser-ausschoepfen-lassen/

# 2. Germany, Binee, 2016



A local in-store collection service which disposes of electric and electronic appliances

Rewards consumers with a discount for every returned device

Tells consumers via an app where their device ends up

Is used in two main fields: electronic waste and pharmaceuticals

<u>https://circulareconomy.europa.eu/platform/en/good-practices/electric-and-electronic-</u> waste-little-incentive-goes-long-way



## 3. Germany, ADOS system, The IUT Group, 2015

Allows co-generation of electrical and thermal energy, as well as production of high quality natural fertilizer



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Anaerobic digestion is a natural process in which organic matter is decomposed by micro-organisms in the absence of oxygen

http://theiutgroup.com/technologies.html





## 4. Germany, Stadler Delabeler, RCS, 2019



Commercial waste disposal, raw material recycling and plastics recycling

Separates clear PET from colored PET

A key area is recycling polyethylene terephthalate (PET) bottles to produce plastic flakes for a variety of applications and high-quality regranulate for the food sector

https://www.wastetodaymagazine.com/article/rcs-germany-adds-stadler-delabelertechnology-pet-recycling/



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