

AshCycle

Integration of underutilized ashes
into material cycles by industry-
urban symbiosis



**Funded by
the European Union**

Project basics

Call / Topic: Twin Green and Digital Transition 2021:
Deploying industrial-urban symbiosis solutions for the
utilization of energy, water, industrial waste and by-products
at regional scale

Start Date: 1 June 2022

Duration: 48 months

Coordinator: University of Oulu

Budget: 10,3 M€ (EU funding 100 %)



Background

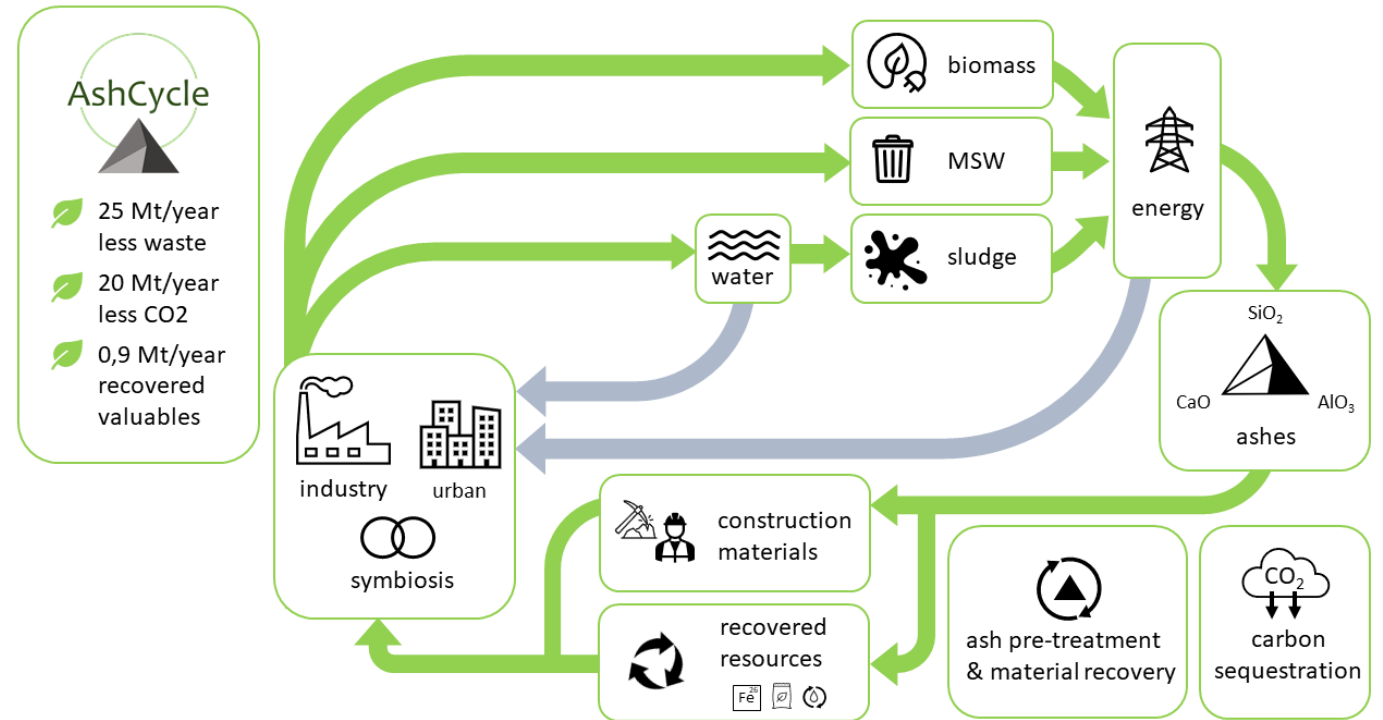
Currently, the ashes resulting from the incineration of municipal solid waste, biomass and sewage sludge are underutilized and largely landfilled

→ significant losses of metals, nutrients, rare earth elements (REE) and industrially valuable minerals present in the ashes



Objectives

- regional I-US concepts for utilization of incineration residues by extracting metals, nutrients and rare earth elements
- using the mineral residues as secondary resources in construction and wastewater treatment products



Consortium

- University of Oulu (UOulu)
- Technical University of Delft (TUDelft)
- University of Zagreb Faculty of Civil Engineering (UNIZG)
- Ghent University (UGent)
- Zavod za gradbenistvo Slovenije (ZAG)
- Technical University of Denmark (DTU)
- BioSO4 Oy (BioSO4)
- Oulun Energia (Oenerg)
- Kiertokaari Oy (Kierto)
- AI4Value Oy (A4V)
- Beton Lučko (BL)
- GTF – Initiative for Sustainable Growth (GTF)
- Indeloop (IND)
- ResourceFull (RSF)
- SECO Belgium (SECO)
- Orbix Solutions (Orbix)
- University of Johannesburg (UJ)
- Veolia nv-sa (Veolia)
- CWare APS (CWare)
- NEXE Ltd. (NEXE)
- Sustainable Living (NH)
- A/S IKAST
BETONVAREFABRIK (IBF)
- Mineralz B.V. (MRZ)
- Haitsma Beton B.V. (Haitsma)
- Danske Tegl (DT)
- ARC I/S Amager Resourcecenter (ARC)
- ETH Zürich (ETH)



Partner roles

Research & teaching consultancy

UOulu
TUDelft
UNIZG
UGent
ZAG
DTU
UJ
ETH
CWare

Energy companies

OEnerg
IND
ARC

Waste management & recycling companies

Kierto
Orbix
Veolia

Construction materials industry

BL
RSF
SECO
NEXE
NH
IBF
Haitsma
DT

Pre-treatment & valorisation of ashes

MRZ
BioSO4

Water treatment

BioSO4
Veolia

ITC, development of AI

A4V

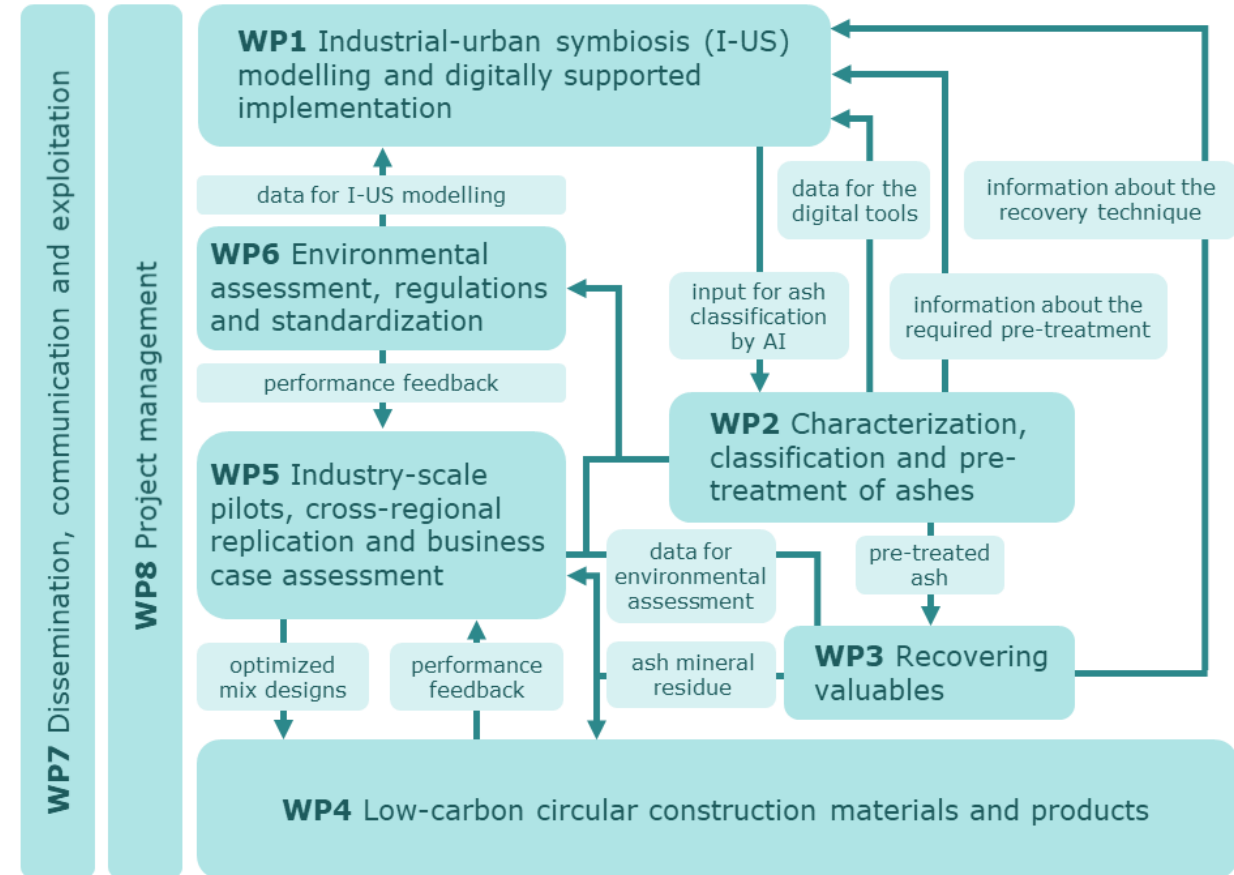
Sustainable gender-balanced development

GTF



Work Packages & WP leaders

WP	WP Leader
1	Birgitte Holt Andersen / CWare
2	Guang Ye / TUDelft
3	Lisbeth Ottosen / DTU
4	Nina Štirmer / University of Zagreb
5	Stijn Matthys / University of Gent
6	Vilma Ducman / ZAG
7	Jasmiini Tornberg / University of Oulu
8	Tero Luukkonen / University of Oulu





Thank you!

Visit us at ashcycle.eu!

