

circular

Developing circular solutions
for sustainable districts

www.circular-living.be





Kitchen waste is also collected separately by the commercial provider.

Project Status

DE
NIEUWE
DOKKEN



FASE 2

2023-2024

FASE 1

2020-2021

FASE 3

2026

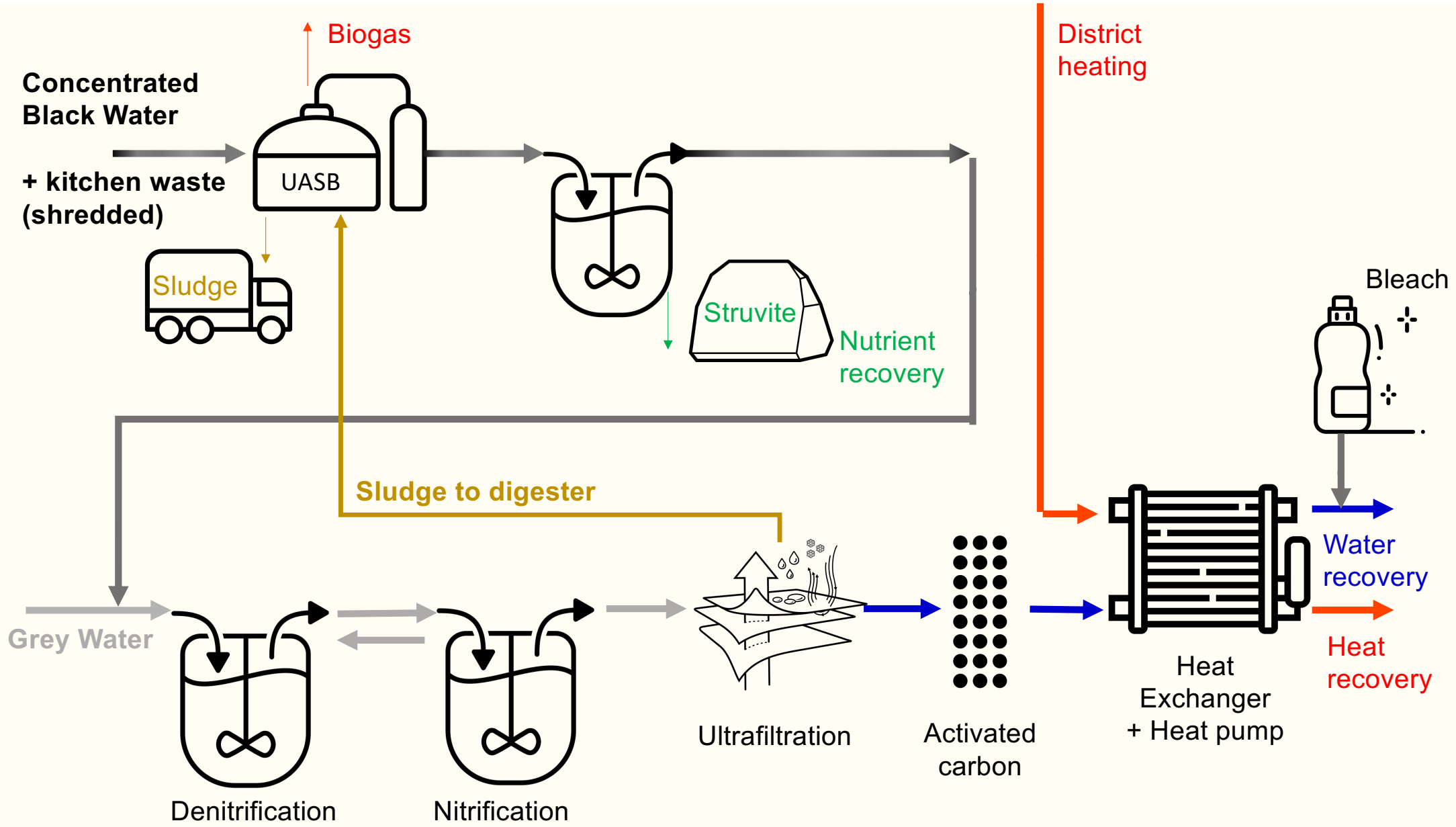
FASE 4

2029

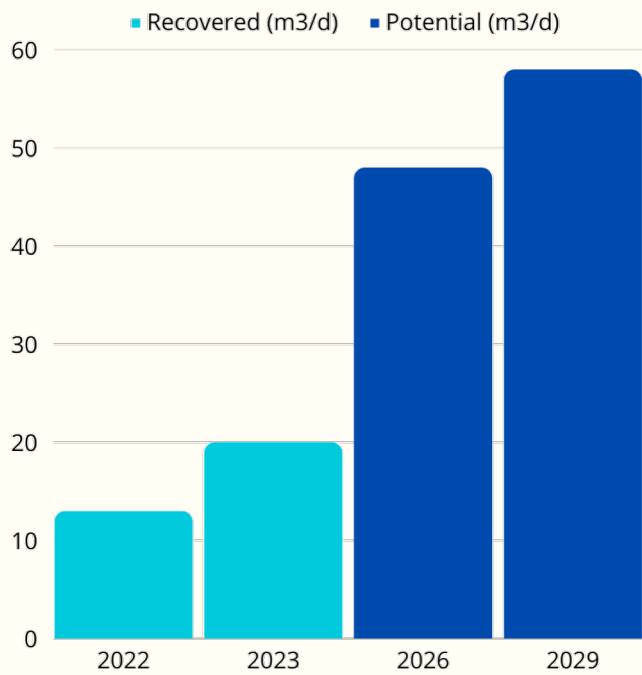
2000 MWh heat
30.000 m³ freshwater

>400 Housing units + City complex (schools, sports infrastructure etc.)

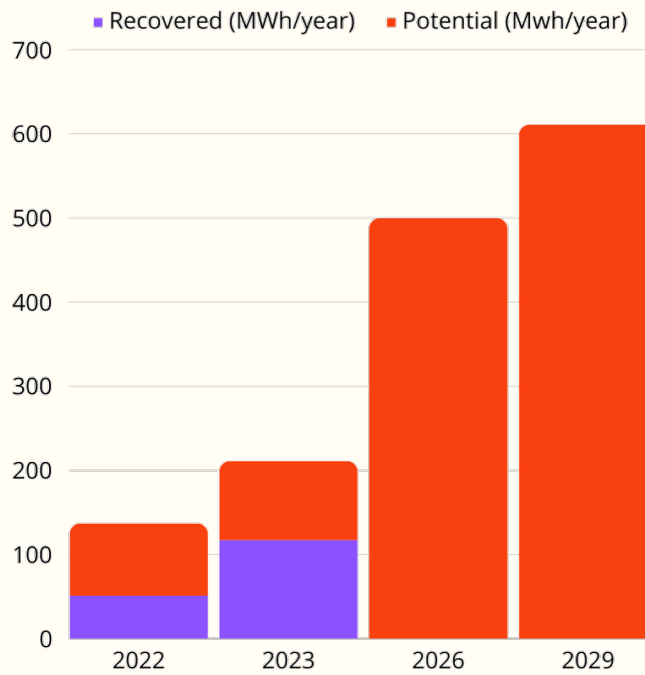




Performance – operations 2020 – 2023 → 2029 - outlook



Water recovered



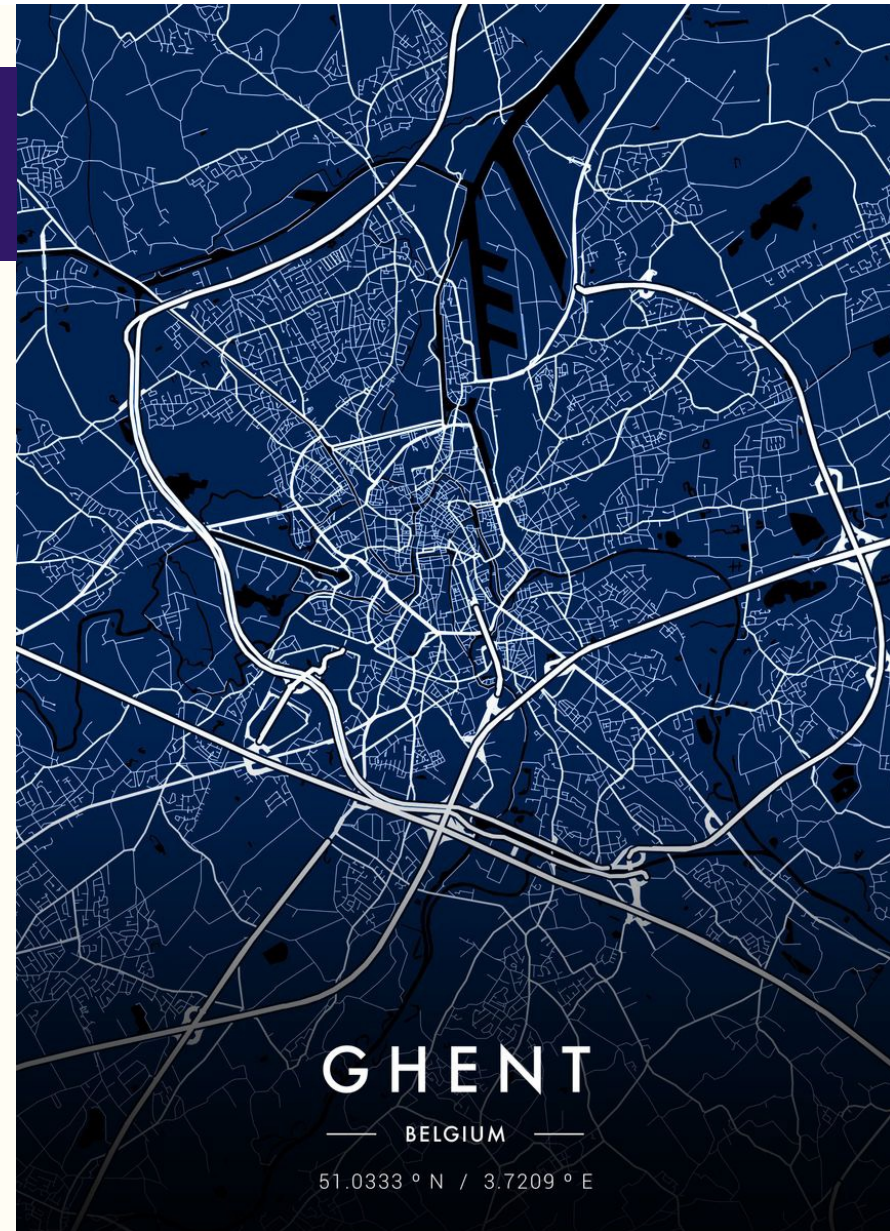
Heat recovered



Struvite recovered

Implementing future proof districts with Local Water Community requires:

- Early urban planning and support by local authorities – part of city blue print
- Modular planning of infrastructure and investments
- Different financing structures: Added value is not always created on the project level



Environmental Transition Drivers



Eutrophication

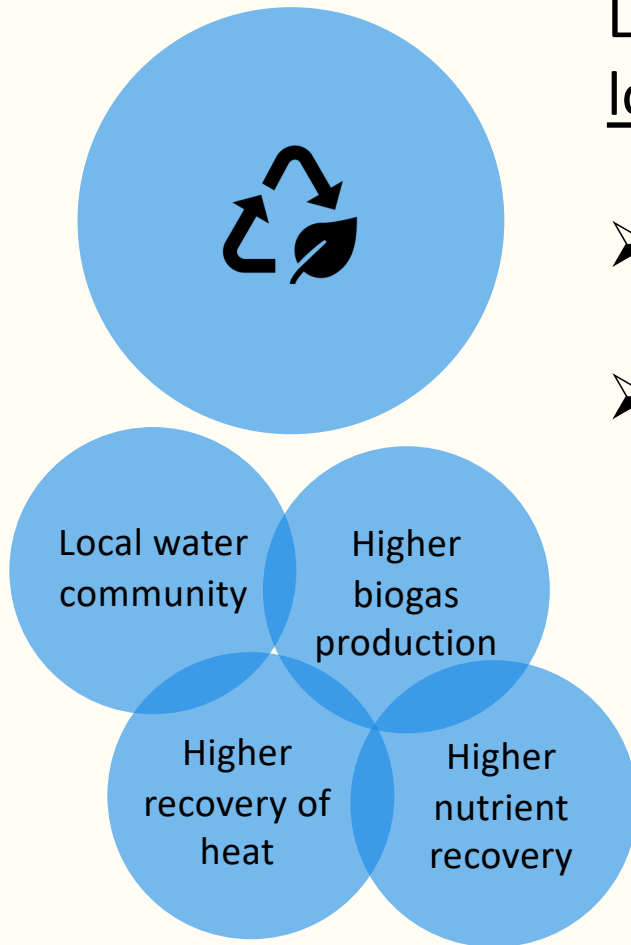
Micro-pollutants

Climate change



- Nieuwe Dokken supports sustainability ambitions of the City of Ghent.
- New Urban WasteWater Treatment Directive (UWWTD) creates opportunities for local decentral water treatment plants.

Circular Economy Transition Drivers



Local recovery enables coupling chances that support local resilience

- Effluent temperatures : on average 5°C higher than central sewer systems (in Ghent, Belgium)
- Up to 25% of local yearly heating demand can be covered by heat recovery from grey water (Data: De Nieuwe Dokken)



Current infrastructure transition drivers

Local recovery may increase connection capacity of Local Water Infrastructure

➤ Robust treatment : last 4 years : very limited use of central sewer connection (emergency connection)



Less problems at combined sewer overflows

Delay investments in existing infrastructure

Comply to legislation

Test and develop future-proof tech

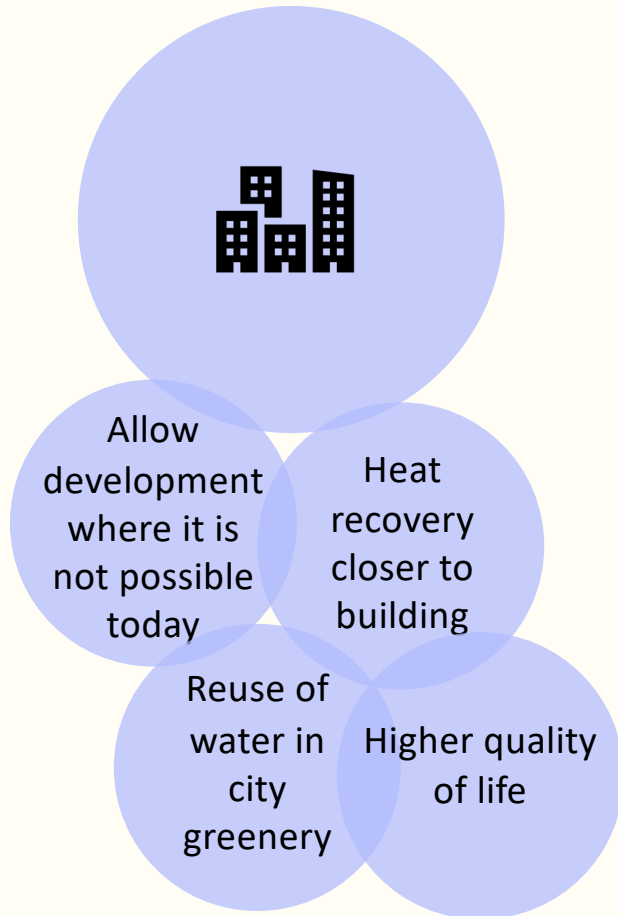


New real estate development transition drivers

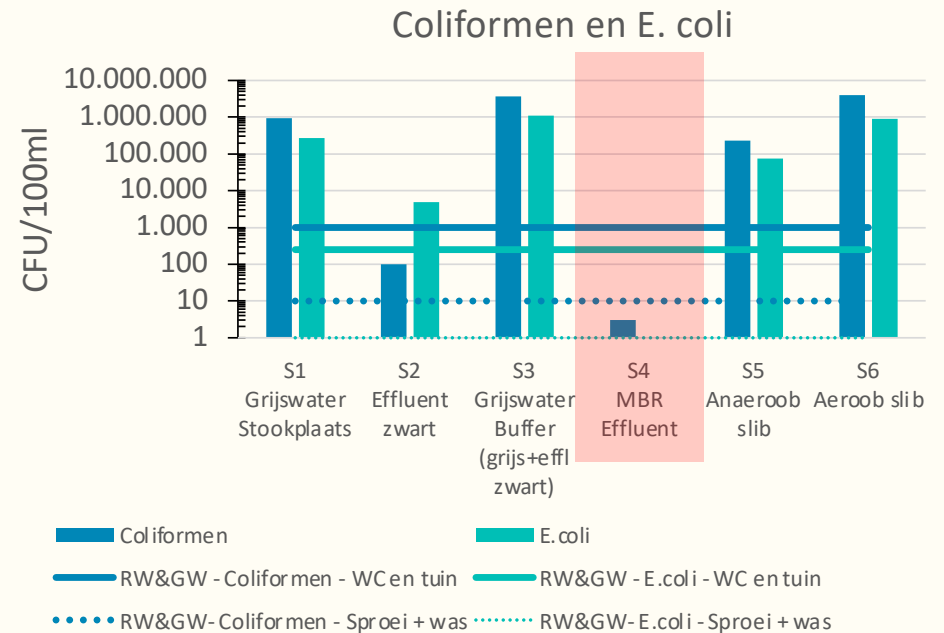
Local Water communities linked with local greenery:

- Water quality produced by De Nieuwe Dokken water treatment plant is sufficient in quality for irrigation
- Reduce heat related health problems

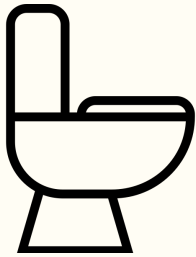
(The climate crisis is also a health crisis, Lancet, 2023, Climate health report)



No enterococci, staphylococci or Legionellae measured in MBR effluent



Replication potential local water community De Nieuwe Dokken



Black water treatment and recovery

- > 1000 housing units
- Biogas digestion coupled with other resources:
 - Kitchen waste
 - SWILL streams (e.g. Jenfelder au, Hamburg Wasser)



Grey water treatment and recovery

- > 150 housing units WHEN coupled with heat recovery
- Context driven:
 - density of urban environment
 - Scarcity of water and renewable heat
 - Re-use potential

Anchor Project: Sharing knowhow about local water communities

- ⚓ By employing a **unique EU demo network** in Belgium, the Netherlands, Germany and Sweden with **source separation technology**, and expanding it with **new pilots**
- ⚓ By mapping the impacts of **decentralized water systems** in urban areas
- ⚓ By closely **engaging with stakeholders**
- ⚓ By delivering **practical tools and transition knowledge**

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North Sea



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Want to know more
or collaborate?
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