Decentralized nutrient & resource management to feed Europe’s bioeconomy
Introduction Company Scope

Cascading Valorisation

Constructed Wetlands

Houseful Project circularity in communities

Valorisation of aquatic macrophytes
**Alchemia-nova Company Scope**

**Circular**
- Valorise resources in conversion & transformation hubs
- Innovate the whole value chain

**Nature-based**
- Regenerate & restore agriculture
- Apply regional synergies & multifunctional NBS

**Participatory**
- Coordinate with transition broker & frontrunners
- Attract interest through engagement

**Build a Regenerative Economy**
- Create New Jobs
- Connect Supply Chain Actors
- Convert Resource Flows Locally
- Turn a Problem into a Solution

**Reimagine our Society**
- Rearrange Agriculture
- CO₂ Sequester Carbon
- Establish Diversity as Commons
- Rebuild Flourishing Ecosystems

**Strengthen the Social Muscle**
- Activate Cooperations
- Empower Social Entrepreneurs
- Share Benefits
- Social Urban Mining

[www.alchemia-nova.net](http://www.alchemia-nova.net)
Cascading valorisation
Cascading valorisation
vertECO® - vertical ecosystem®
for on-site wastewater treatment

› Resource & water recovery
  • Bioremediation (carbons, salts, HM)
› Modular sizing and materials, adaptable plant selection
› Indoor & outdoor application
› Multiple award winner

COD: 208 mg O₂/l
BOD₅: 96 mg O₂/l
Turbidity: 67.5 NTU

COD: 17 mg O₂/l (125)*
BOD₅: 4 mg O₂/l (25)
Turbidity: 1.6 NTU (2)

*after 91/271/EC

V: 500 – 1500 (l/d)

 GREYWATER is water effluents from showers, baths and wash basins, but can also include effluents from kitchen basins.

www.alchemia-nova.net
Location: Northern railway station Vienna
**Aim:** Self-sustaining community (~80 people)
Cambium – Houseful project

1) Bio-waste
   - Biogas
   - Compost heater „Bioneel“
   - Compost humus
   - Heating greenhouse

2) Green clippings
   - Biogas
   - Compost humus
   - Heating greenhouse

3) Domestic wastewater from community
   - Biogas
   - Compost humus
   - Heating greenhouse

Biogas
0.6m³/day

Winter garden

Compost Heater

Life expectancy 12-24 months

Temperature 70 – 30 °C

marco.har@tlalchemia-nova.net

www.alchemia-nova.net
VAM - Valorisation of aquatic biomass

Macrophyte (Old Danube / Vienna)

Low solid content (~10 wt.%)

Challenges

› Transport
› Silage
› Utilisation as biogas substrate
› Heavy Metal (bioremediation)

https://www.3sat.de/wissen/nano/210527-sendung-nano-104.html
tomorrow’s use of biomass will look very different from yesterday’s expectations, and both business leaders and policymakers will need to adjust

Thank you for your attention

This project has received funding from the European Union’s Horizon Europe Framework Programme (HORIZON) under Grant Agreement No 101081833

Topic: Circular Economy and Bioeconomy sectors
HORIZON-CL6-2022-CIRCBIO-01-03

EUCircularTalks
05.10.2022
Armin Winter PhD
Armin.winter@alchemia-nova.net