

Chemelot

Hub for Circularity

Building an innovative, circular and climate-neutral industrial cluster

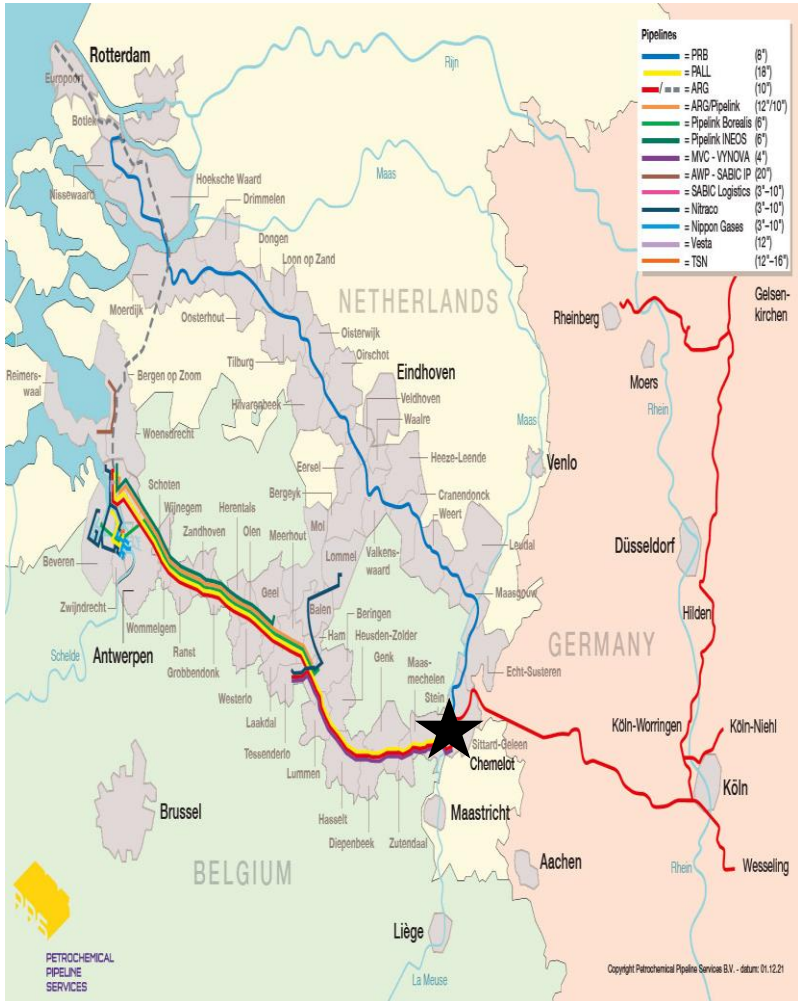
Björn Koopmans

Sittard-Geleen, NL · Chemelot

Chemelot in numbers

8.000 direct jobs

x3 indirect employment multiplier
Important for regional economy & Dutch industry



Brightlands

INDUSTRIAL ANCHOR

60 factories olefins & ammonia value chains
Including (near-)unique like acrylonitrile, EPDM & Dyneema®

7,5bn kg annual product output
Every Dutch household 300kg products having its origin at Chemelot

€8bn turnover
Approx €3,9bn added value (incl. indirect)

INNOVATION ANCHOR

130 companies
30 startups and 5 research & innovation centers

3.000 on-campus employees
+ 1.000 students – academic, professional & vocational
CHILL as learning community & talent office

€0,5bn R&D expenditure
UM & TNO as driving forces

Four layers of symbiosis

1

Industrial Site

Integrated infrastructure

60 factories share steam, H₂, electricity, water & industrial gases

- 800km of pipelines
- 200km of sewers
- 60km of rail
- 50km of road
- 1 inland port, biggest in NL (volume)

By-product valorisation

One factory's output = next factory's feedstock. One umbrella permit; one Seveso establishment



2

Innovation Campus

Brightlands Chemelot Campus:

developing innovative materials, sustainable processes and biomedical solutions

- Brightlands Materials Center
- Aachen-Maastricht Institute for Biobased Materials
- Brightsite
- Startup Loft, Lab Equipment & Multipurpose Pilot Plant
- Brightlands Venture Partners
- CHILL Learning Community & Talent Office
- *From Oct. 2026:* Brightlands Circular Space - World's first open-access circular plastics demo facility



3

Municipalities & Society

Strategic Spatial Vision

Joint spatial vision (2022) for Chemelot + surroundings. Citizen advisory panel meets 3x p.a. since 2025

Safety covenant

Multi-party safety covenant (2023) with above-legal standards

Public activities organized by CHILL, Brightlands Chemelot Campus & Chemelot in the municipalities, Open Day at the Campus & Industrial Park & external Visitors Center in centre of Geleen (since 2025)

Liveability Fund

Fund for projects from & for citizens to improve quality of life and raise awareness for Chemelot's transition (2025)

4

Euregion NL-BE-DE & European Union

Located in the ARRRR supercluster

Antwerp-Rotterdam-Rhine-Ruhr Area: ~40% of Europe's chemical production; connected by pipelines & waterways

Pro-active contributor in Europe

- Chemelot Industrial Park: Critical Chemicals Alliance & EC
- Brightlands Chemelot Campus involved in:
 - Trilateral Chemical Regions
 - A.SPIRE
 - Circular Plastic Alliance on behalf of Province of Limburg/European Chemical Regions Network

Full R&D-to-production chain
Lab → pilot → demo
→ full-scale on one 8 km² site.

Brightlands' Syschemiq project (Horizon Europe) as example of systemic approach on circular plastics
20+ partners (NL-BE-DE), 2022-2026.

Public-private partnership with partner-led implementation

Launched in 2021 → 'floating' Program Office 2022-2024 → since 2025 embedded in Stichting Chemelot (Foundation, not-for-profit) → full integration 2027

How it works

Joint program Compilation of existing strategies and plans into H4C-narrative along 4 pillars Innovation, Human Capital, Infrastructure & Society

Projects ownership Projects are owned and operated by (consortia of) partners themselves. Program Office only provides support upon request, manages some multilateral projects, and contributes to public affairs and project development (funding stack)

Follow up RegioBoard (Triple-helix - industry, knowledge institutions, public authorities) meets 2× annually; follows up program and discusses actual developments. No decisions about individual projects, only about Program Office.

Finance model. Program Office financed with membership fees. Projects funded by partners + third parties (grants, etc.); Program Office supports upon request

Lessons learnt?

1. Do not reinvent the wheel: built upon what already exists
2. Commitment follows project ownership
3. Only setup a separate legal entity when there is no viable alternative.

Examples of partner's projects

CHEMELOT INDUSTRIAL PARK

RWE FUREC

€108M EU Innovation Fund (2023)

Syngas platform converting municipal waste into 55 kt/yr circular hydrogen

Reju Regeneration Hub One

€135M NIKI (national innovation fund) (2026)

First industrial-scale textile-to-textile recycling flagship project

BRIGHTLANDS CHEMELOT CAMPUS

Brightlands Circular Space

€50M (national growth fund) (2023)

Open access research & demo facility. Shareholders Brightlands Chemelot Campus – TNO – UM . Opens Oct 2026.

Results

-27% CO₂e reduction achieved vs 1990

€500M+ Grants & subsidies approved

120+ Projects in the pipeline **€7.5bn** Total CAPEX

Five recurring barriers that constrained progress

1. FOAK bankability

Market risk + OPEX gaps persist.

2. Funding fragmentation

Instruments not matching industrial project development

3. Secondary-materials regulation

End-of-waste, waste shipment, mass balance still delay circular feedstock business cases.

4. Unequal playing field

Below-cost imports undermine EU producers. CBAM is helpful but incomplete.

5. Societal engagement

Public support for industrial transition requires years of relationship-building.

What helps us to address these challenges

- Internal governance : combination of collective programming and individual project ownership keeps members committed.
- External representation: strong cluster approach gives political visibility and credibility.
- Based on existing strategies and ecosystem: not reinventing the wheel, trying to make it spin a bit faster.
- Structural advantage: unique co-location of industrial park and innovation campus, including students.
- IMindset: the balancing act of idealism vs pragmatism, perseverance vs flexibility

Key asks: immediate and structural

Immediate priorities



Hubs as funding-eligible entities

Recognise circular industrial hubs formally in EU and national frameworks.



Front-load infrastructure

Pre-invest in hydrogen backbone, CO₂ pipeline, electricity grid.



Regulatory certainty

Stable, predictable rules circular feedstock & technologies

Structural shifts



Sustain peer-learning

Permanent EU mechanism for cross-hub exchange beyond H4C CoP.



Level the playing field

Address below-cost imports to secure (EU-made) circular product offtake.



Talent & skills at scale

Fund twin-transition workforce development via hub-level models.

THANK YOU

Chemelot is now **a lighthouse** for circular industrial transition in Europe.

This journey - from informal coalition (2021) to funded deployments (2026) - is replicable. The ingredients: governance, co-location, and collective voice

Björn Koopmans · bjorn.koopmans@chemelot.nl