

Our focus – Regional Triple Helix Collaboration

Research & Innovation



⊕ Hydrogen Value Chains

Connecting production, storage, distribution and usage to create future proof jobs and companies

⊕ Circular Carbon

Renewable gas from biomass and re-use of CO₂ and storage through CCUS

⊕ Energy Hubs

Integration of energy in the grid by balancing supply and demand in the total energy system

Human Capital

Labour market, policy development, education and training.



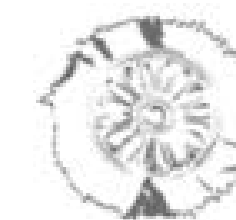
New Energy Business School (international) energy education for professionals and companies



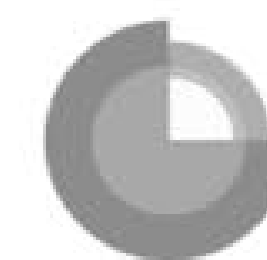
New Energy Academy

free extracurricular energy programmes, inspiring students to study and work in the field of the energy transition





CERTH
CENTRE FOR RESEARCH & TECHNOLOGY HELLAS

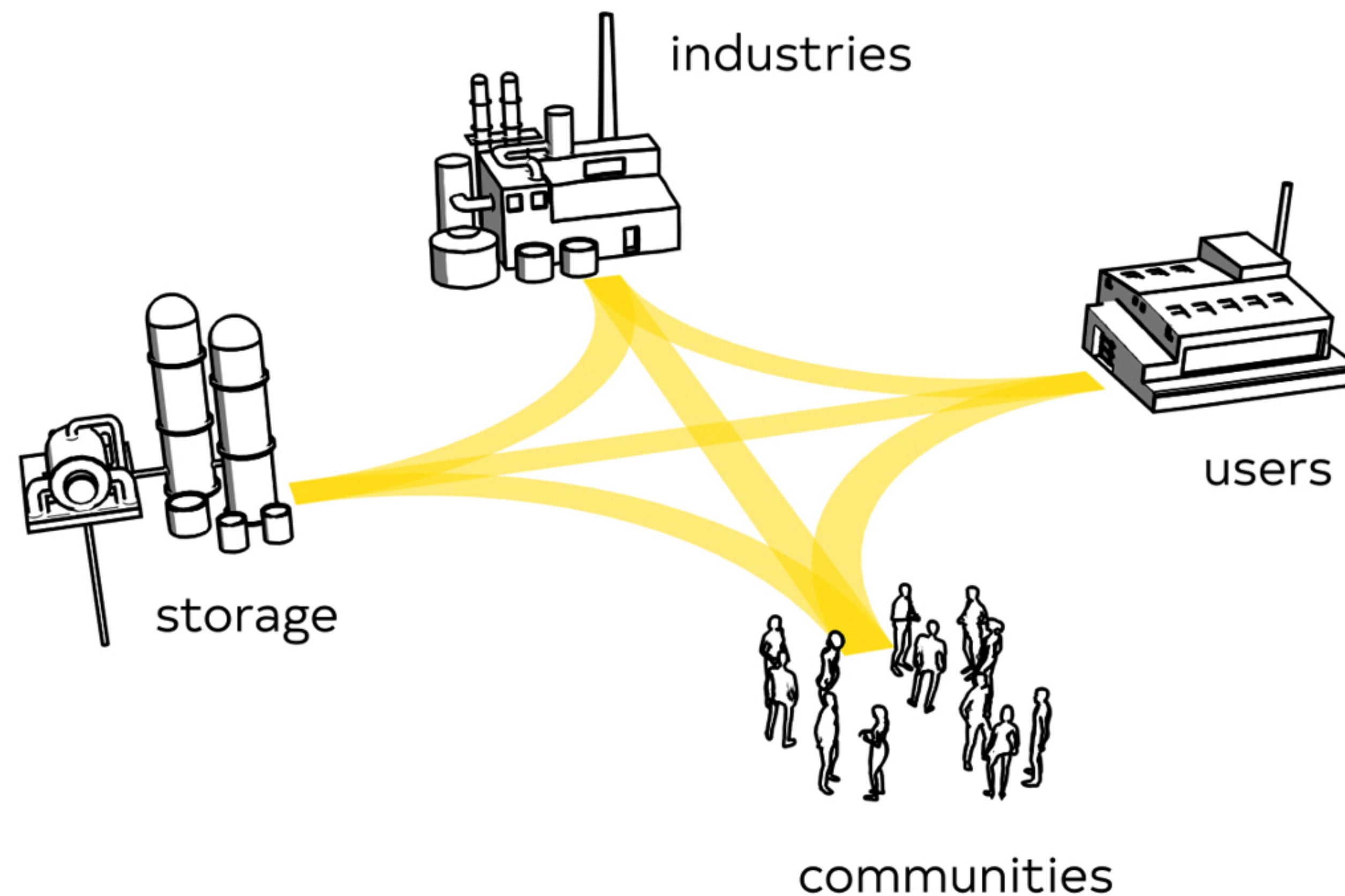


GEUS



Introduction ConsenCUS

CarbOn Neutral clusterS through Electricity-based iNnovations in Capture, Utilisation and Storage.



Goals:

- Demonstrating CCUS innovations
- Design of CO₂ value chains and Net-Zero Industrial Clusters
- Community awareness

ConsenCUS demonstration campaign at the Petrobrazi refinery in Romania

The demonstration unit was home to our operators for several months at the time. See how they experienced the project:

<https://www.youtube.com/watch?v=n2dbnDNPKpk>



As shown in the picture, the capture process consists of:

1. The CO₂ absorption column;
2. Solvent regeneration and CO₂ separation module; and
3. CO₂ utilisation module deployed to convert CO₂ into useful chemical building blocks.

Key facts & figures

- 4 years: 2021-2025
- 19 partners
- 7 countries



Demonstration results

- Cement, refinery, magnesite integration, >1000 operational hours
- 10 kg/hour scale of capture achieved
- 5 GJ/t energy consumption achieved

Emission compared to fossil

- CO₂ to potassium formate at 17 GJ/t; formate to formic acid at 10
- Levelized Cost Of Capture: €87-143/t
- 70-93% GWP reduction compared to business as usual over the full life cycle
- 32-70% GWP reduction compared to benchmark CO₂ capture when powered with RES



ABOUT NEW ENERGY BUSINESS SCHOOL

- Programs developed by leading academic researchers and industry experts.
- In-depth knowledge of existing energy value chains and new energy systems.
- Regular and tailor-made programs.
- Classroom education, E-learning and blended learning at all levels of expertise.
- Global network of energy experts, peers, (business)schools and alumni.

OPEN MARKET



BEGINNER

- Masterclasses (1 day)
- Introductory Courses (3-4 days)
- New Energy Traineeship (2 years)



INTERMEDIATE

- Masterclasses (1 day)
- Intensive Courses (2-3 days)



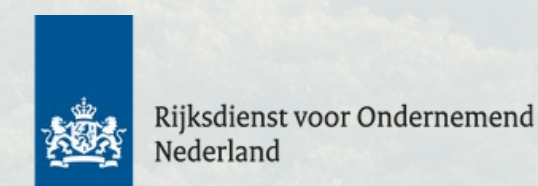
EXPERT

- Executive Programmes (7-8 days)
- Post HBO Hydrogen (9 months)
- Executive MBA Energy Transition (2 years)



IN-COMPANY

- Completely customizable
- With or without site visits.
- Hard skills and soft skills.
- National and international.
- All levels: beginner to expert.



Themes that we cover

- 
- Hydrogen
 - Grid congestion
 - Heat transition
 - System Integration
 - Biogas
 - Smart Energy Hubs
 - Artificial Intelligence and Digitalization
 - Mobility
 - CCUS
 - LNG
 - Nuclear energy
 - Ammonia
 - (Offshore) wind and energy
 - Battery and storage
 - Geopolitics



MASTERCLASS CCUS

Led by industry experts, this Masterclass provides a comprehensive overview of the entire CCUS value chain from capture to utilization and storage:

- Gain insights into the latest developments in CO₂ capture technologies, transport infrastructure, and storage solutions.
 - Explore the CCUS roadmap for the Netherlands and Northwest Europe, focusing on medium- and long-term opportunities.
 - Experience a unique Virtual Reality tour through the CCUS value chain for an immersive and interactive learning experience.

Level: Beginner - Duration: one day– Language Dutch/English



INTENSIVE COURSE CCUS

Led by leading experts, this three-day Intensive Course offers an in-depth exploration of the complete CCUS value chain from capture to storage:

- Understand the latest technologies, costs, and large-scale deployment strategies for CO₂ capture, transport, and storage.
 - Learn from case studies and policy perspectives shaping the European CCUS landscape.
 - Participate in an exclusive site visit to Porthos in Rotterdam..

Level: Intermediate - Duration: three days– Language: English

