



Decarbonizing industry with low-carbon materials

SustainableSolutionsMatch

Welcome!



Session Agenda

- Welcome & Introduction
- Sustainability in Energy Intensive Industries
- Pitch Presentations:
 - Pitch 1: **CO2BioClean** (Germany)
 - Pitch 2: **D-CRBN** (Belgium)
 - Pitch 3: **Lavoisier Composites** (France)
 - Pitch 4: **Traceless** (Germany)
 - Pitch 5: **Clariter** (Israel)
 - Pitch 6: **Hydrophis** (United Kingdom)
 - Pitch 7: **Carboganic** (Belgium)
 - Pitch 8: **CCS42** (Germany)
- Closing Remarks

Welcome & Introduction

Who's moderating?



Magali Parent
VLAIO



Sara Maiez-Tribut
Auvergne Rhône-Alpes
Entreprises



Catherine LeBloa
CCI Limoges Haute-Vienne



Isabelle Gouriou
Grand Est Développement

Who's organizing?

Welcome & Introduction




Let's play by the rules: smooth sailing for our session!

- **Mute Policy:** Please remain muted unless speaking to avoid background noise.
- **Q&A Time:** After each pitch, there will be 1–2 minutes for questions. Please use the chat to ask questions.
- **Time management:** Pitchers, please keep track of your time. We will inform you if 5 minutes have passed.
- **Recording and AI:** This session will not be recorded, and we will not accept AI assistant in the session.
- **Technical Issues:** If you encounter issues, use the chat to notify the host.

Sustainability in Energy Intensive Industries

Industries with high carbon footprints (steel, cement, chemical, glass, plastics, ceramics... sectors) face increasing pressure to decarbonize.

Discover European innovations on materials:

-  Reducing production emissions
-  Improving resource efficiency
-  Enabling circular processes



Time to meet the innovators !

- Pitch Presentations:

- 1: **CO2BioClean- Josef Glass-COO** (Germany)
- 2: **D-CRBN - Gill Scheltjens -CEO** (Belgium)
- 3: **Lavoisier Composites - Esteban Villalon - CEO** (France)
- 4: **Traceless - Andreas Genest- Senior Sustainability Manager** (Germany)
- 5: **Clariter - Yariv Eldar - Chief Commercial Officer** (Israel)
- 6: **Hydrophis - Glenn Leighton - Founder** (United Kingdom)
- 7: **Carboganic - Bart Tambuyser, founding father** (Belgium)
- 8: **CCS42 - Knöchel, Arne Frithjof -** (Germany)



Pitch Presentations

Time to meet the innovators!

Pitch 1
CO2BioClean
Josef Glass



TURNING CARBON EMISSIONS INTO NATURAL BIOPOLYMERS FOR A FOSSIL-FREE FUTURE

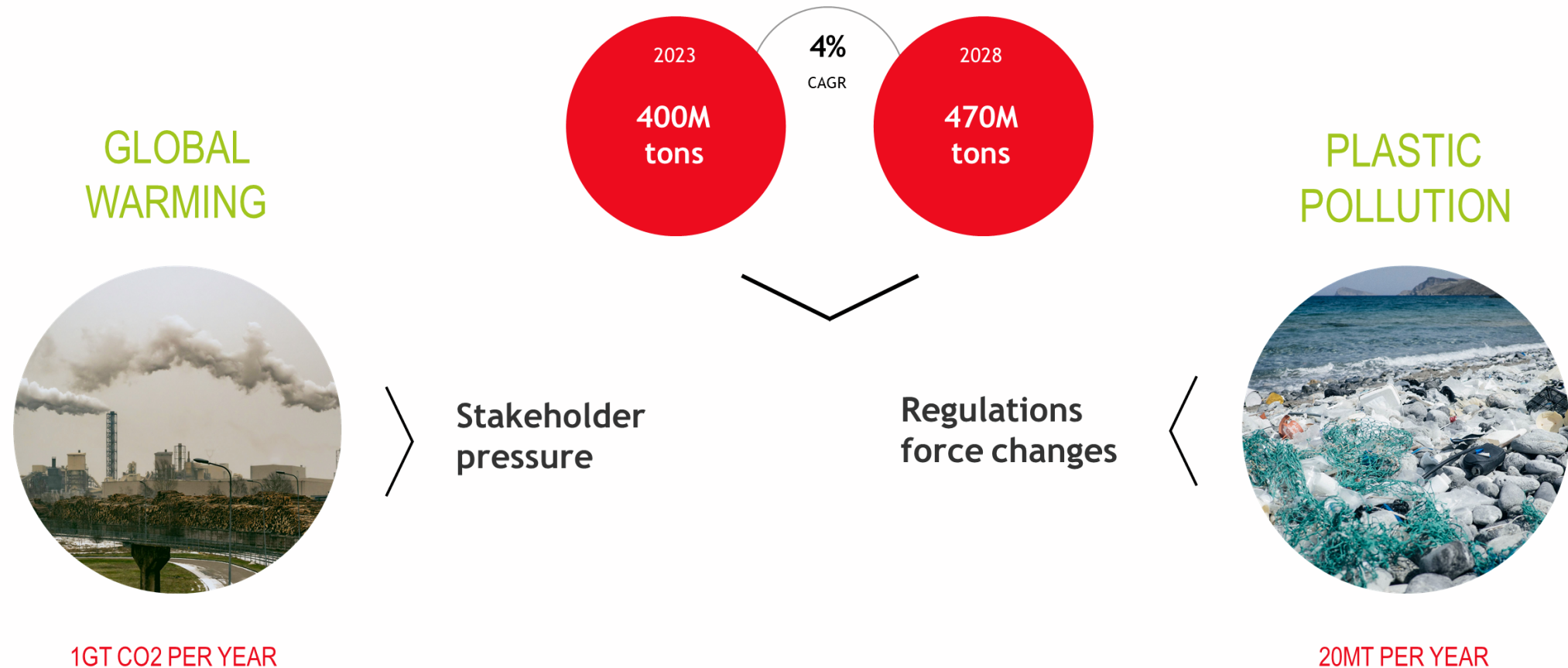
CO2BioClean GmbH

Josef Glass
COO

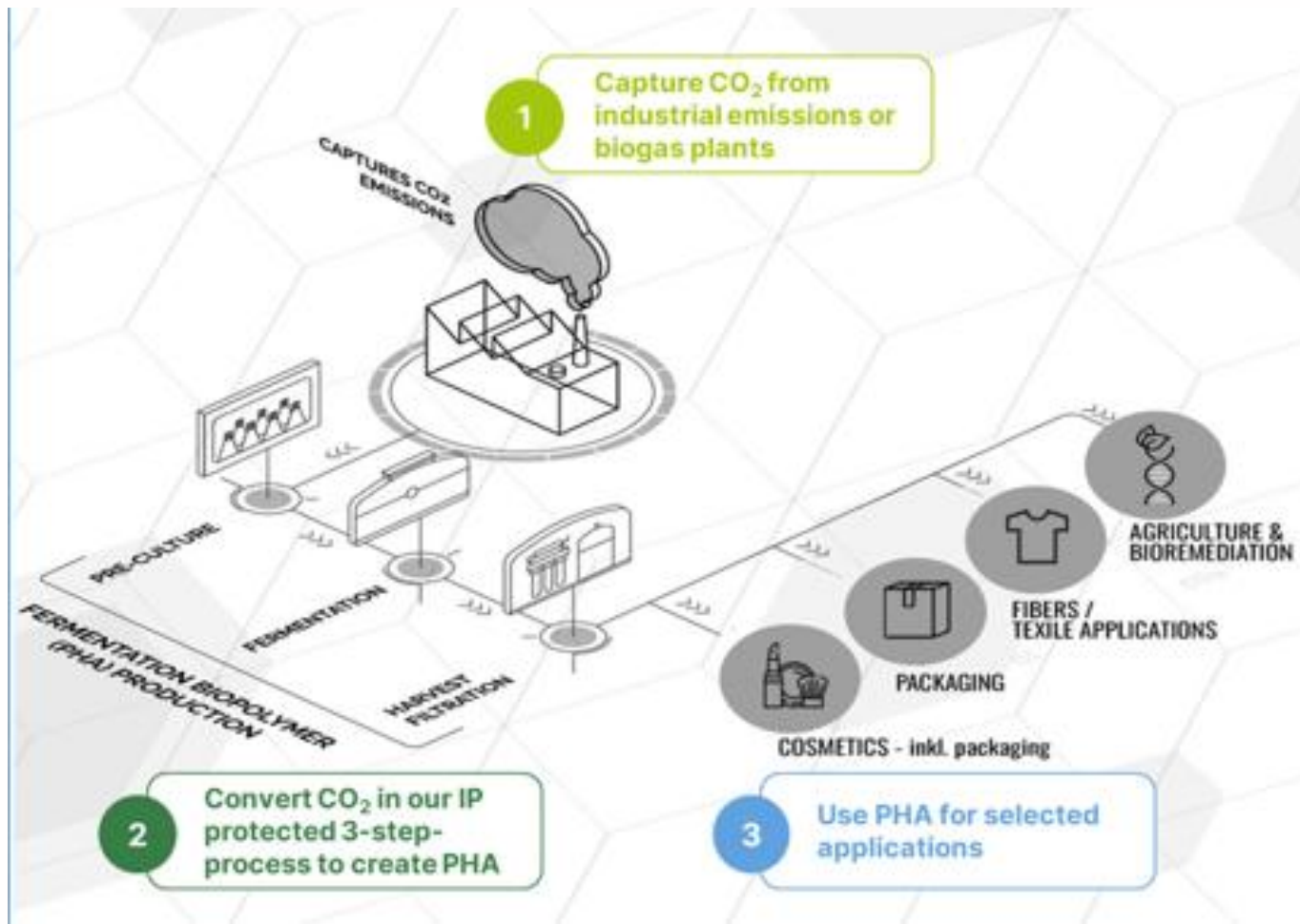


SustainableSolutionsMatch

Plastic has become a major problem



We convert CO₂ into valuable biodegradable polymers (PHA)



CO2BioClean with potential to best cost/price-sustainability ratio

Segments	Price		CO2 footprint	Microplastic pollution
	Today	Future		
Fossil-based plastics	1-2€/kg for standard plastics	Increase by CO2 / plastic taxes / recycling	Fossil-based	High microplastic pollution
Existing bio-plastics	Expensive and hard-to-handle raw materials		Mostly agricultural-based raw materials with substantial CO2 footprint	Theoretically biodegradable (e.g. PLA) however, only in under specific conditions
CO2 based PHA	Not yet commercial	Cheap raw material CO2	CO2 as raw material	Bio-degradable, even in sea water

■ Good
 ■ Okay
 ■ Bad

Our biopolymers substitute mainly PE and PP

Ingredients/ Cosmetics	Agriculture	Packaging	Textile	Other
<ul style="list-style-type: none">• Substituting fossil-based fillers, micro-beads or emulsifiers to comply with microplastic regulations	<ul style="list-style-type: none">• Benefit from very good biodegradability, e.g., in mulch films, tree protection covers, or seed coatings.	<ul style="list-style-type: none">• More sustainable packaging through green packaging films or coated paper (paper recycling cycle)	<ul style="list-style-type: none">• Sustainable textile fibers for use in both clothing / fashion and for industrial/commercial purposes	<ul style="list-style-type: none">• We are open to other application segments where our material can deliver added value.

We are looking for application development partnerships in these segments and Investors

#EENCanHelp

Book a meeting with: CO2BioClean GmbH

Josef Glass

COO

CO2BioClean GmbH

josef.glass@co2bioclean.com



een.ec.europa.eu

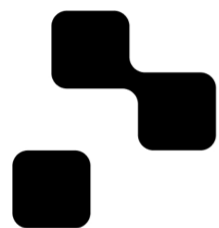




Pitch Presentations

Time to meet the innovators!

Pitch 2
D-CRBN
Gill Scheltjens



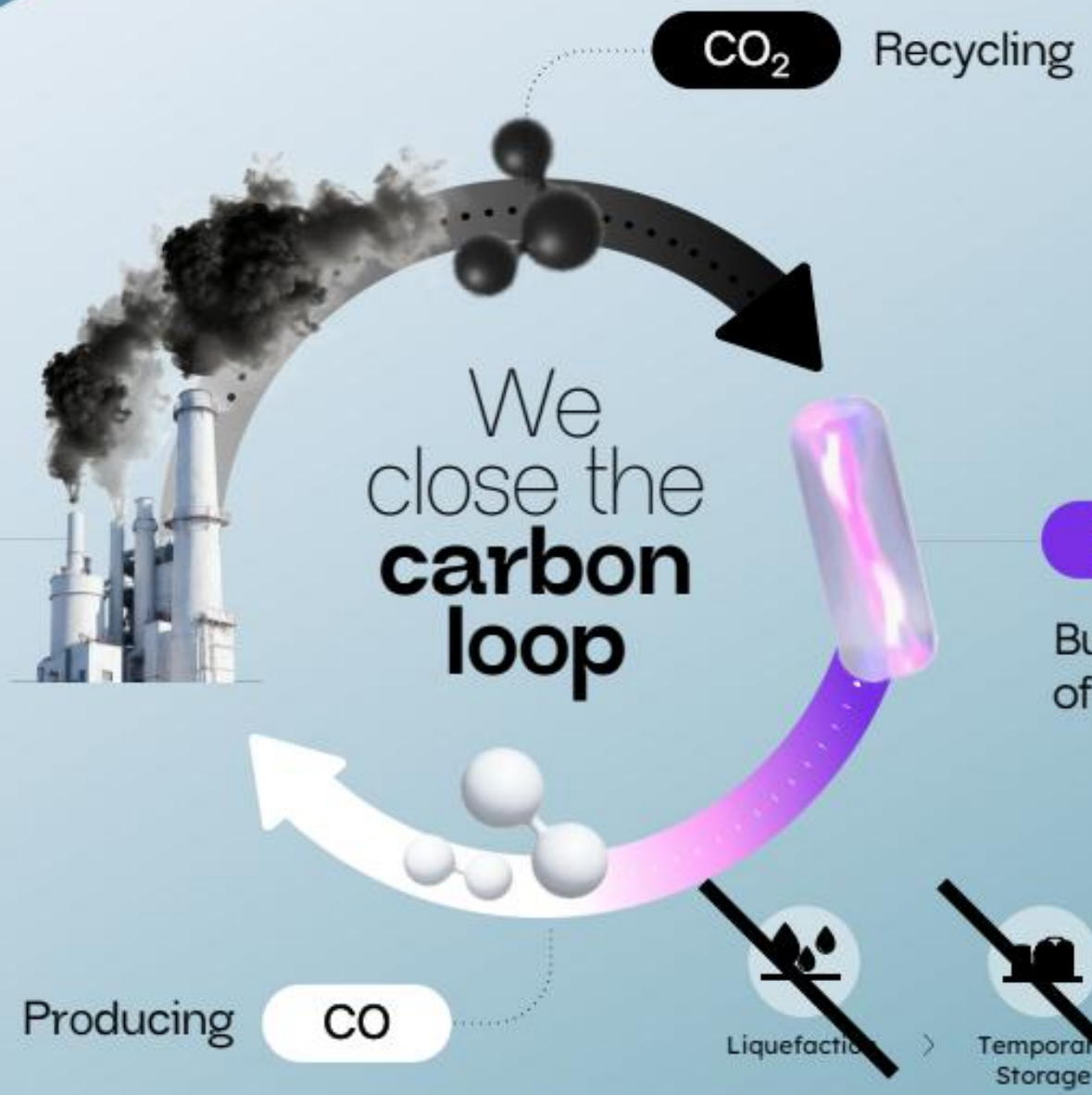
D-CRBN

CO₂ recycling for industrials

Gill Scheltjens
CEO

What do we do?

Heavy Industries



We close the **carbon loop**

Electrified Plasma

Building low-carbon materials of tomorrow — from CO₂

- ~~Liquefaction~~
- ~~Temporary Storage~~
- ~~Transport~~
- ~~Long-term Storage~~

Lifecycle assessment

Sustainable...

D-CRBN's process achieves -0.7 t CO₂-eq./t CO, making it **carbon negative** and significantly more sustainable than conventional methods.

LCA

- ✓ Biogenic CO₂
- ✓ Green electricity

+2.1 → **-0.7**
tonnes CO₂-eq. emitted/t CO

Total amount of CO₂ removed by 2035

5.5 Mt → **3.8 Mt**
CO production CO₂ removed

Asset Owner Metrics

		10 ktpa	100 ktpa
CAPEX	[MEUR]	6	52
NPV	[MEUR]	9	98
IRR	[%]	25	30
DPBP	[years]	<4	<3
LPOC	[EUR/t CO]	249	236

Assumptions

- **Plant lifetime** 20 years
- **Uptime** 95 %
- **Discount rate** 8%
- **Electricity** 50 EUR/MWh
- **Taxes** 20%
- **Performance** 1100 kWh/t CO

...and Profitable!

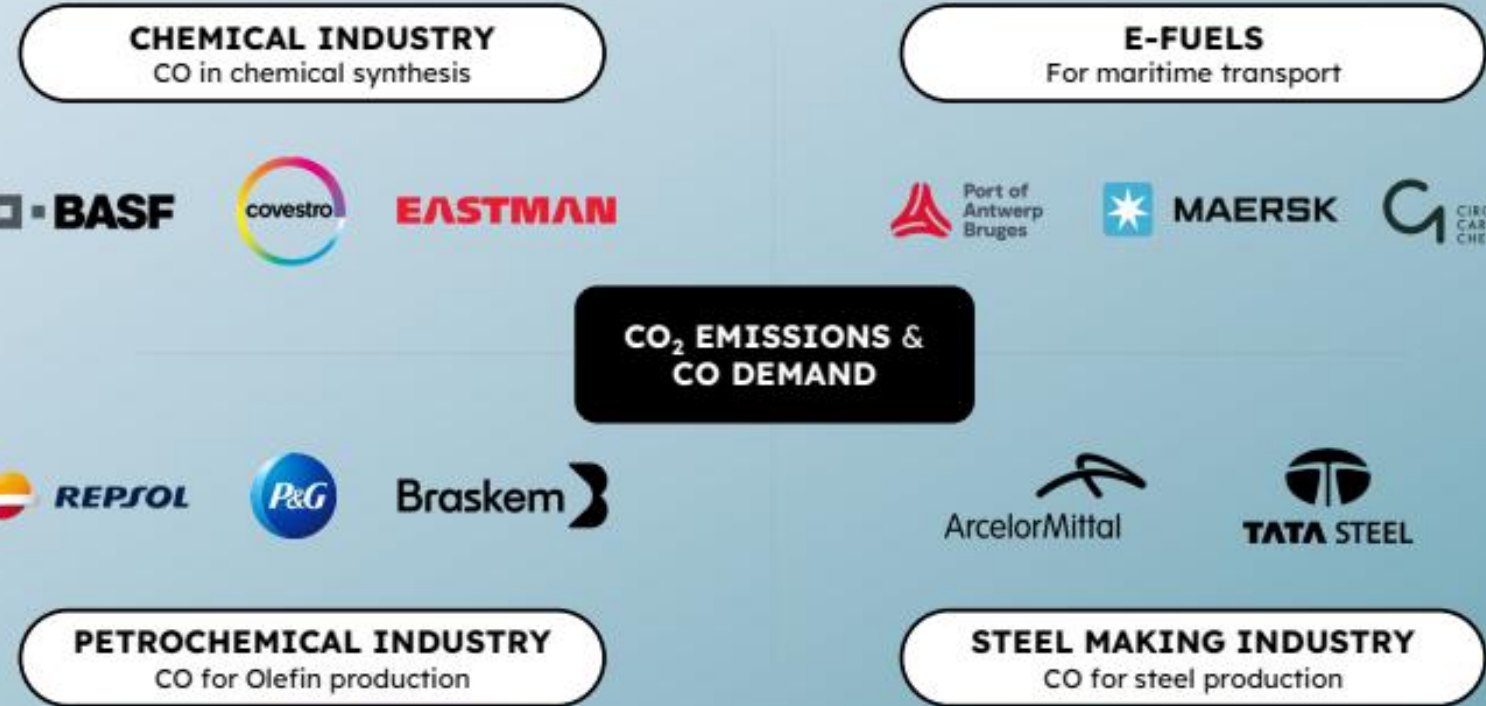
Through the latest advancements in the pilot project at ArcelorMittal, D-CRBN has refined its model by integrating supplier data, off-taker insights, and external validation from industrial partners.

“D-CRBN delivers low-carbon CO at fossil parity – no premium, no ETS.”

Intersection of CO consumption and CO₂ emission

The combined value proposition of CO₂ removal and CO provision leads us to focusing on industries which have requirements in both domains.

The potential for immediate integration has led us to focus on the chemicals industry, which will be followed closely by the petrochemicals and e-fuels industries.



Cooperation partners

PETROCHEMICAL



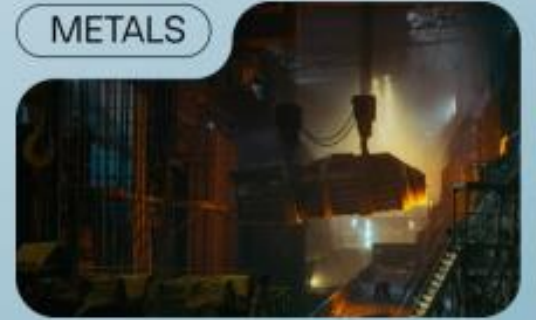
CHEMICALS



FUELS



METALS



Sustainable and circular innovation needs good networks along the whole value chain:

- Engineering service providers
- Equipment suppliers
- Integrators
- Investors

#EENCanHelp

Book a meeting now: D-CRBN

Gill Scheltjens

CEO

D-CRBN

gill.scheltjens@d-crbn.com



een.ec.europa.eu





Pitch Presentations

Time to meet the innovators!

Pitch 3
Lavoisier Composites
Esteban Villalon



CIRCULAR INNOVATION PACK



LAVOISIER COMPOSITES

Esteban VILLALON
CEO



[SustainableSolutionsMatch](https://www.sustainable-solutions-match.com)

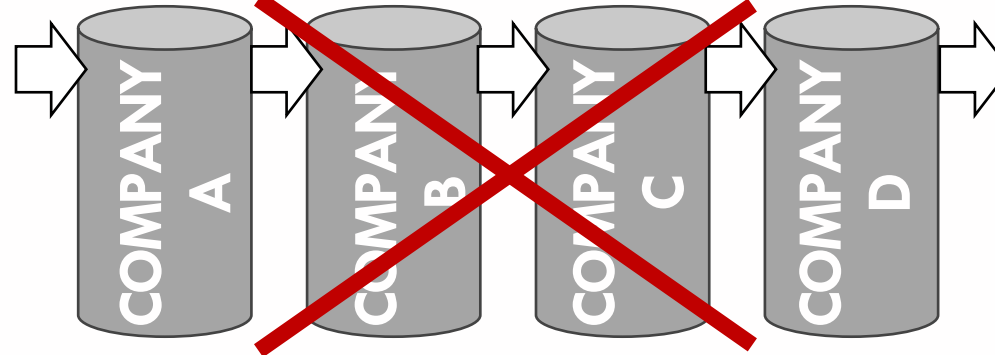
The problem related to the development approach

PROPERTIES



RAW MATERIALS

SILO APPROACH



VS

HOLISTIC APPROACH

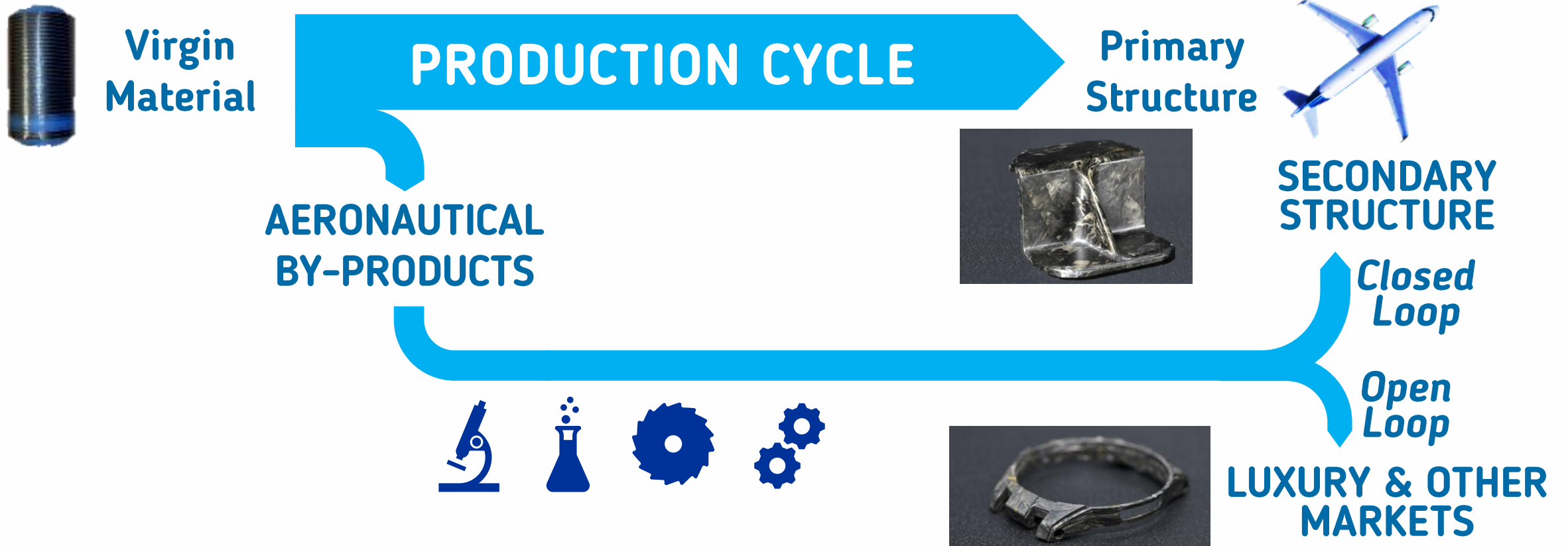
REQUIREMENTS

END PRODUCTS



UNDERSTANDING THE FINAL APPLICATION REQUIREMENTS TO CONNECT
END PRODUCTS WITH ECOSOURCED RAW MATERIALS

Carbon fiber: Example of closed and open loops



Key benefits of closed loop developpement /Structural fitting

- *Sourcing: Waste reduction and virgin material substitution*
- *Use phase: 50% weight reduction vs Titanium*

MATERIAL TRACEABILITY AND ANALYSIS

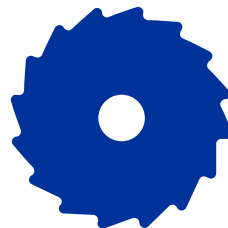


ROBUST PROCESS WITH PROVEN PROPERTIES

Key benefits of open loop developments /Watch casing

- *Sourcing: Traced aerospace grade material*
- *Differentiating aesthetic, lightening reduced environmental footprint*

AESTHETIC & FUNCTIONAL REQUIREMENTS



SUSTAINABILITY & CONSISTENT PART QUALITY



Who is suited to implement circularity in its products?

Companies...

- *Considering that they can also be part of the solution*
- *Willing to innovate for reducing their environmental footprint*
- *Viewing sustainability as a key competitive advantage*
- *Focusing on both structural and/or aesthetic applications*
- *Having identified eco-sourced raw materials (or not)*
- *Open to develop parts made of traced by-products*

Giving sustainability a chance with CIRCULAR INNOVATION PACK



Aesthetic

- Mood board
- Color & pattern
- Origin selection
- Touch & feel
- Features
- Exclusivity



Functional

- Functions
- Technical needs
- Identified volumes
- Differentiation



Performance

- Load cases
- Mechanical requirements
- Weight target
- Corrosion
- Fatigue

3 PACKS TO VALIDATE TECHNICAL AND ECONOMICAL VIABILITY

#EENCanHelp

Book a meeting with: LAVOISIER COMPOSITES

Esteban VILLALON

CEO

LAVOISIER COMPOSITES

esteban.villalon@lavoisier-composites.com



een.ec.europa.eu





Pitch Presentations

Time to meet the innovators!

Pitch 4
Traceless
Andreas Genest



traceless

From Plastic Pollution to Natural Solution

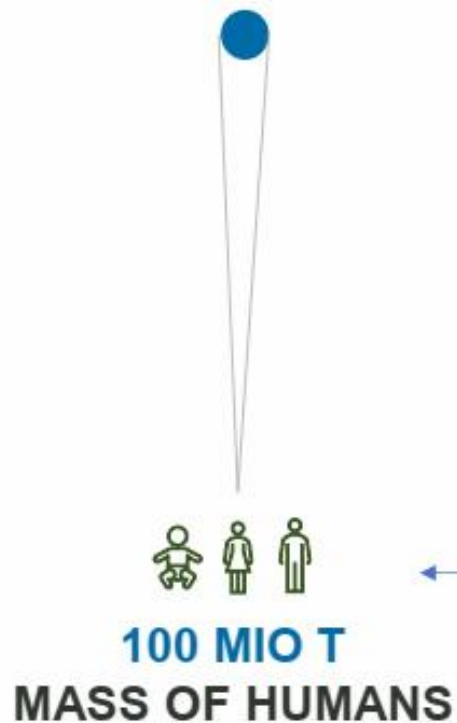
traceless materials GmbH

Andreas Genest
Senior Sustainability Manager

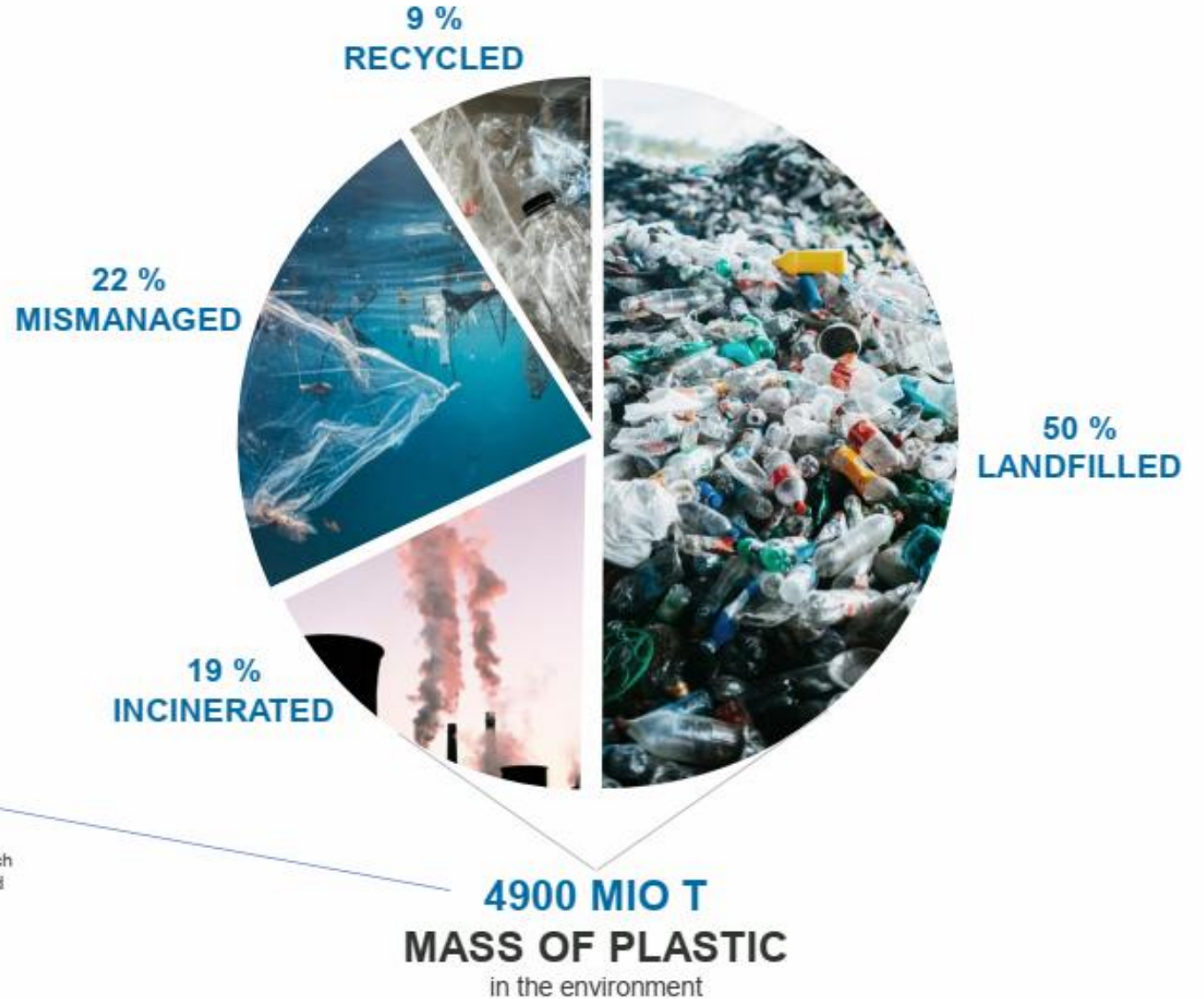


SustainableSolutionsMatch

Global Plastic Pollution



Every week, a person may ingest as much microplastic as the weight of a credit card (~5 grams).

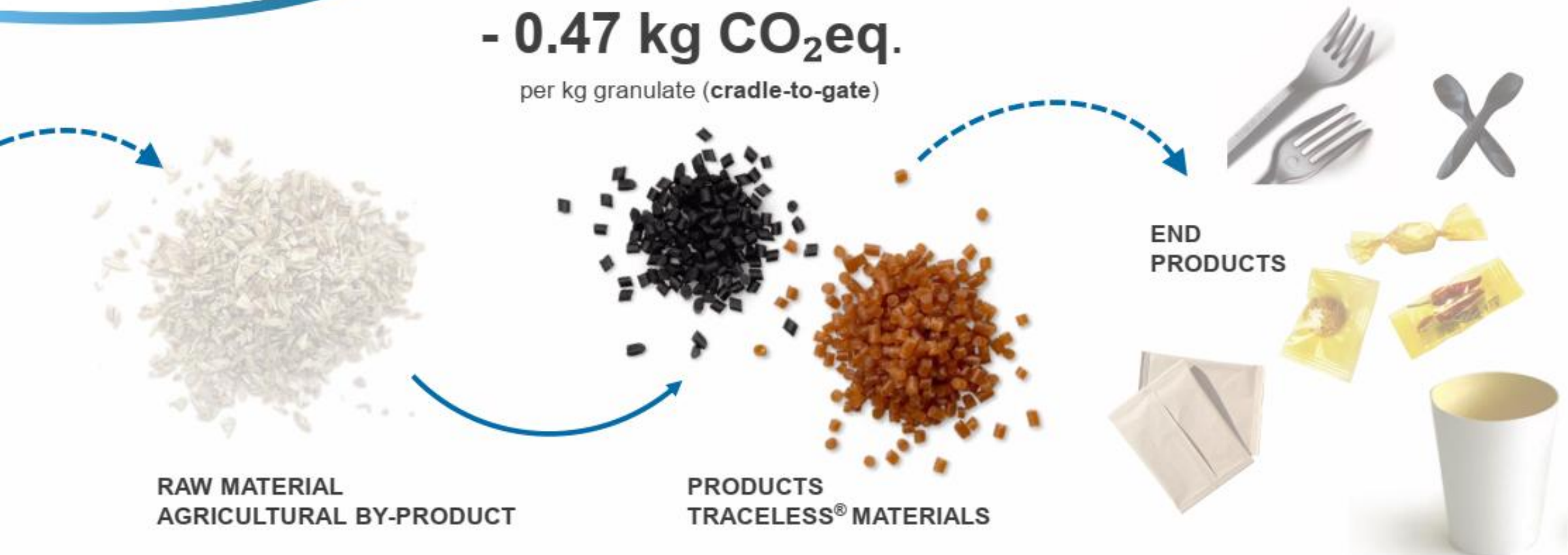


Novel Biomaterial Solution



- 0.47 kg CO₂eq.

per kg granulate (cradle-to-gate)



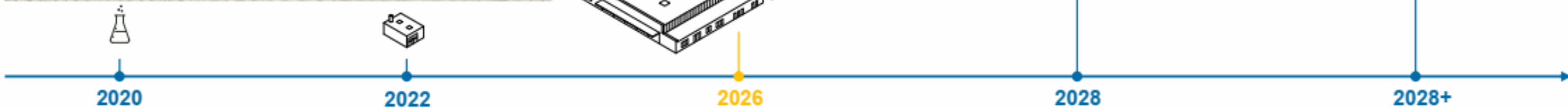
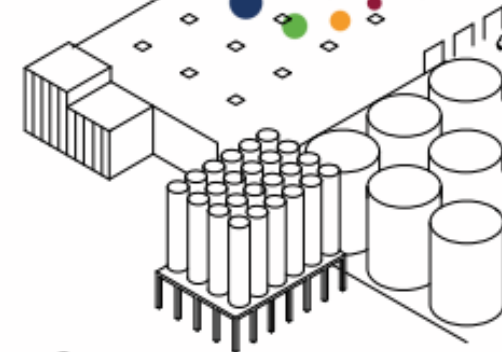
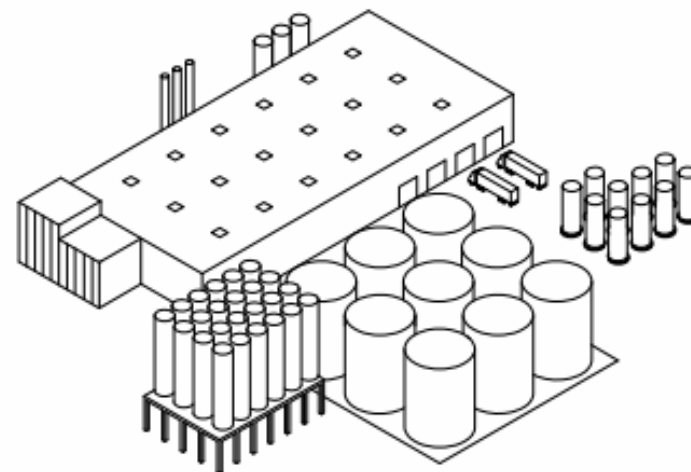
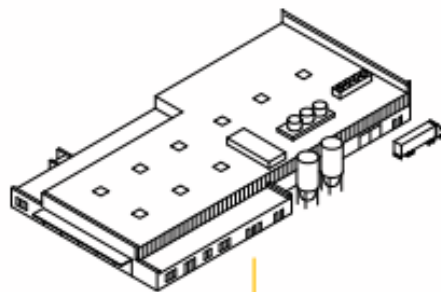
100%

bio-based / plastic-free / home-compostable

Rapid production capacity scale-up



WE ARE HERE



Laboratory Scale

Pilot Scale
3 tons per year

Demonstration Scale
5,000 tons per year

Industry Scale
100,000 tons per year

Global Roll-out
200,000+ tons per year

How we can drive the Bio-Material Revolution Together



PILOT PROJECT COLLABORATIONS

Your Logo

Should be here too!



OTTO



mondi



C&A

#EENCanHelp

Book a meeting with: traceless materials GmbH

Andreas Genest

Senior Sustainability Manager
traceless materials GmbH
andreas.genest@traceless.eu



een.ec.europa.eu

traceless





Pitch Presentations

Time to meet the innovators!

Pitch 5
Clariter
Yariv Eldar



Solution title: Clariter – a revolutionary technology that transforms plastic waste into advanced industrial products.
For a sustainable future.

Company name: Clariter Group

Yariv Eldar
Chief Commercial Officer



SustainableSolutionsMatch

The world is looking for solutions:

-  *Solving the plastic waste epidemic*
-  *Creating Green Petrochemicals as alternatives to fossil-based petrochemicals*
-  *Increasing sustainability by reducing crude oil extraction*
-  *Reducing dependency on volatile oil prices*

Clariter offers the solution

A cleantech company that ends the life of plastic, transforming it into high-quality green petrochemicals.

Most technologies recycle plastics into other plastics, energy, or fuel. Clariter does what nobody else does - taking recycling to the next level and creating new products for industry.

**TAKING PLASTIC
NOBODY WANTS
AND TRANSFORMING
IT INTO PRODUCTS
EVERYBODY NEEDS**



Take the lead in sustainability and profitability

Our Unique Products



Oiler®

White mineral oils



Clariwax®

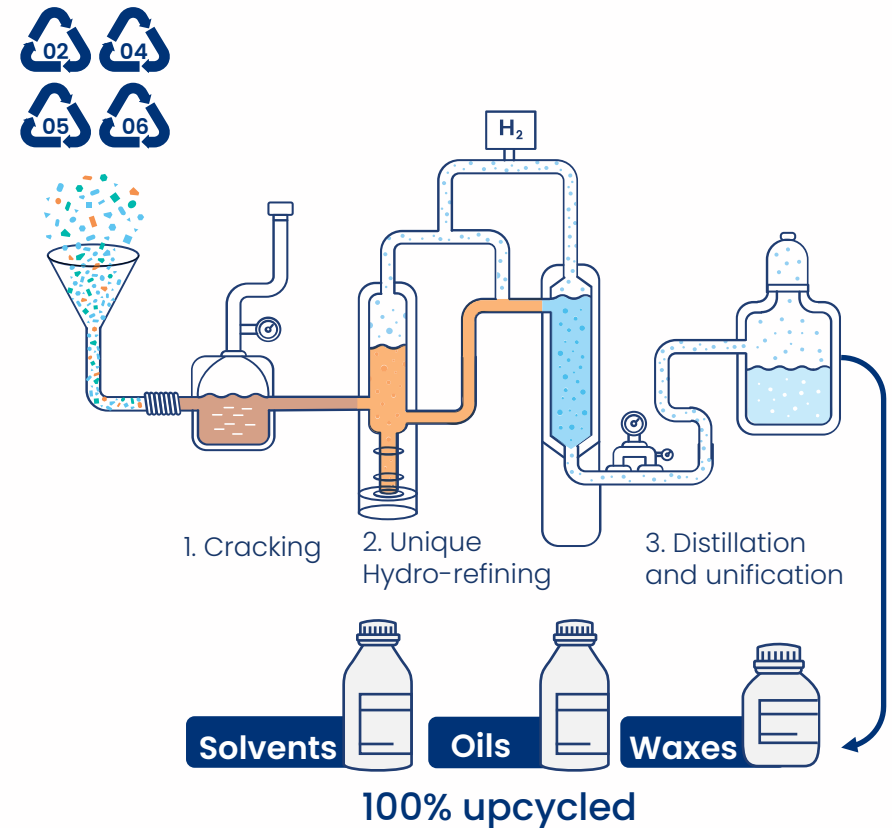
Snow-white paraffin wax



Solventra®

Aliphatic solvents

Our Patented Process





Clariter's Competitive Edge

- **Broad plastic acceptance** - we can process most plastic types, including mixed and contaminated streams
- **High 80-85% product yield** - each plant transforms 60K tons of plastic waste into 50K tons of product
- **Highest compliance and purity standards** - our products meet Industrial Standards, cosmetic and pharmaceutical purity levels and FDA food-contact standard
- **Seamless product replacement** - production lines can easily be shifted from fossil-based petrochemicals to our products, distinguishing Clariter from other bio-based alternatives
- **~100% utilization Rate** - We harness off-gases to save electricity, reduce carbon emissions and the residue becomes a sellable byproduct

1 ton of Clariter products will save 1.9 tons of CO₂ emissions

Plastic waste upcycled by Clariter contributes to avoiding 1.9T of CO₂ emissions

100K tons Emissions saved Per year

75KT emissions abated from avoided plastic disposal
25KT emissions abated by low carbon production of sustainable petrochemicals

Displacing 4.2K barrels per day of crude

Clariter contributes to direct and complementary displacement of crude, lowering reliance on crude oil

Equivalent to the removal of 21,500 cars from the streets per year per Clariter facility

Attractive \$22 billion market potential

Clariter offers a commercially attractive combination of sustainability, efficiency, and profitability.



Oilter®

€ ~\$4.7bn market

4% Overall CAGR

12% Sustainable CAGR

- Lubricants
- Cosmetics
- Personal care
- Data-center immersion cooling fluids



Clariwax®

€ ~\$12bn market

4% Overall CAGR

12% Sustainable CAGR

- Food packaging
- Cosmetics and personal care
- Rubber and plastic industry
- Furniture and leather



Solventra®

€ ~\$5.2bn market

3% Overall CAGR

12% Sustainable CAGR

- Pharmaceuticals
- Paints and coatings
- Agriculture industry
- Cleaning and detergents

Unlimited options for sustainable, high-value applications

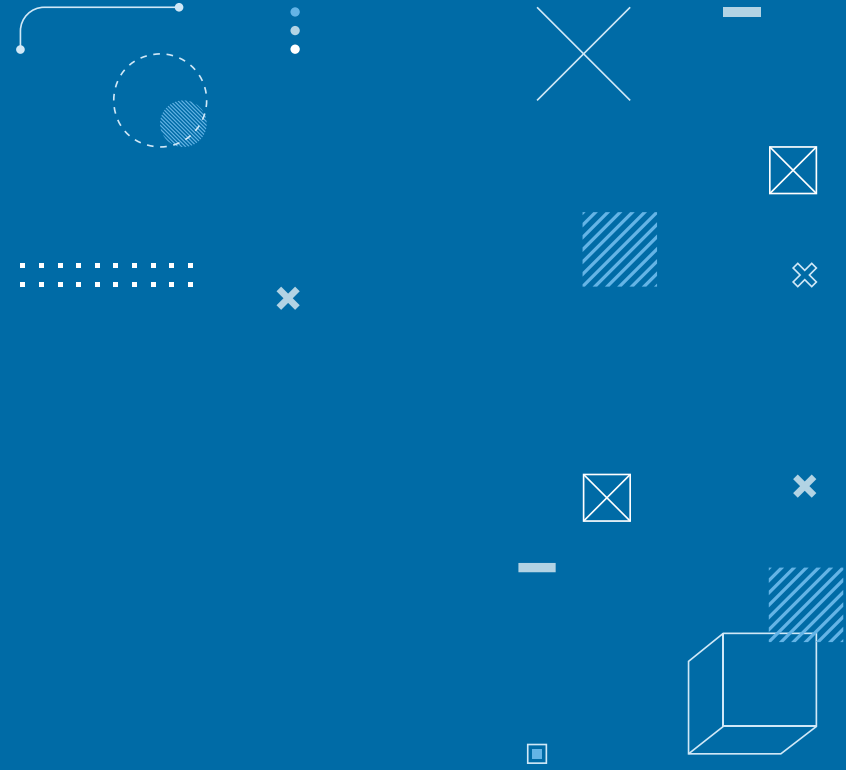
Sustainable and circular innovation needs good networks along the whole value chain.

- **Clariter** stands at the forefront of the chemical recycling revolution. Since 2003, we have transformed plastic waste from a global challenge into a commercial opportunity – developing a breakthrough technology, which in 2026 is commercially proven and **ready for global scale-up**.
- **We are inviting forward-thinking partners who share our commitment to sustainability** to join us on this journey.
- We are currently seeking **strategic collaborations with sustainability-driven clients and equity investors** to accelerate the launch of our **first commercial plant** and **expand our technology worldwide**.

#EENCanHelp

Book a meeting with: Clariter

Yariv Eldar
Chief Commercial Officer
Clariter Group
Yariv.Eldar@clariter.com





Pitch Presentations

Time to meet the innovators!

Pitch 6
Hydrophis
Glenn Leighton



Minerals and Water Reclamation Using CO₂

Hydrophis

<https://www.hydrophis.eco/>

Glenn Leighton
Founder



SustainableSolutionsMatch

The asset everyone else finds too hard

- Aberthaw, Wales: 18 million tonnes of coal ash.
 - Saltwater sprayed. Asbestos-bearing. £200M+ environmental liability?
 - We see it differently: Saltwater brine as feedstock. Use waste CO₂ for high-value mineral precipitation. The asbestos & other contamination is our R&D moat.
- **First commercial plant is under construction in Australia after 6 yrs' R&D (TRL8)**
- **Team:** Dr. Glenn Leighton - CEO, founded Hydrophis in 2019, Dr. Amanda Berger - Head of Chemistry, TRL 5→8 since 2023, Barry Mellor - GM Sales, 20yrs construction materials, Andrew Williams - GM Chem Eng, 25yrs minerals, Ted Dickson - GM Industrial Minerals, 40yrs geology

CO₂ mineral carbonation: waste-to-value cascade

- *Bulk CO₂ + waste brine → sequential mineral precipitation*
- **Minerals extracted from the ash pile:**
Calcite (CaCO₃) · Magnesium hydroxide · Fly ash (cement-grade) · Carbon black
- **Impact:**
 - ✓ *£200M+ liability → revenue asset*
 - ✓ *Asbestos processed safely*
 - ✓ *95-99% mineral recovery · 90%+ water recycled · Bulk CO₂ utilisation*
 - ✓ *300-500 jobs*

Three markets for minerals and IP

- **Now** – South Australia project #1 has started construction. Commissioning – Q4 2026. Wales tender for 20-year site remediation. Proposals underway in Saudi, USA.
- **UK/EU** – Cement producers and aggregates, high-value minerals, carbon black
- **Global** – IP portfolio: licence out over 20 yrs to coastal coal ash lagoons

Partners we are actively seeking

1. **Tidal energy developers** – co-develop the lagoon to power the fly ash processing
2. **Specialist environmental insurers** – asbestos-bearing site remediation cover
3. **Hydrogen hub developers** – site co-location at existing grid-connected infrastructure
4. **International coal ash/mine/desalination owners** – licensing pipeline for technology
5. **Green infrastructure investors** – phased capital to match 20-year offtakes

#EENCanHelp

Meet us here

Glenn Leighton

CEO

Hydrophis UK Ltd

glenn.leighton@hydrophis.eco +447884117056



een.ec.europa.eu

Hydrophis





Pitch Presentations

Time to meet the innovators!

Two spotlights are positioned at the top of the frame, casting beams of light onto a central area. The beams overlap to create a larger, darker blue oval shape at the bottom, which contains the text for Pitch 7.

Pitch 7
Carboganic
Bart Tambuyser



 **Carboganic[®]**
Biocarbon compounding concentrates

A breakthrough for engineered plastics

Bart Tambuyser, founding father



[SustainableSolutionsMatch](#)

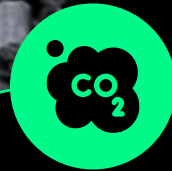
The unbalanced equation: performance, sustainability and cost

	Functionalities	Sustainability	Cost
Carbon black petrol based	+	- -	€
Biobased polymers & additives	+	+ +	€ € €

The unbalanced equation: performance, sustainability and cost

	Functionalities	Sustainability	Cost
Carbon black petrol based	+	- -	€
Biobased polymers & additives	+	+ +	€ € €
Functional biocarbon concentrates	+ + +	+ +	€
	<ul style="list-style-type: none"> - Light-weight - Dimensional stability - Thermostable - Stiffness enhancing - ... 	<ul style="list-style-type: none"> - Globally available - Renewable - CO₂ positive 	<ul style="list-style-type: none"> - Commodity-like material - Proven technology

Driving significant CO₂ reduction



1 ton of biocarbon stores
2,5 - 3 ton of CO₂



Combined with recycled plastics,
the carbon footprint can be as low as
-1,25 CO₂ eq/kg per kg material

Empowering innovation in engineered plastic applications

Proven

3D printing (FGF/FIL)



EU market size
~ 54 kT



Expanding

Thermoplastics

- Mobility
- Aeronautics
- Drones
- Power tools
- Electronic parts
- ...



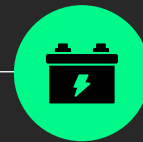
EU market size
~ 54.000 kT



Exploring

Bio-Anode

Battery applications



EU market size
~ 15 - 20 kT

Mastering the end-to-end value chain



Q4 2025



Demo plant with compounding line

Temse

Minimum masterbatch capacity: **30 T / Y**



Patents

- Large-scale 3D printing
- Recycled plastics

Q4 2027



Industrial plant

Flanders

Minimum masterbatch capacity: **500 T / Y**



2026 - 2031

Min. 5 industrial plants

20.000 T biocarbon / Y

= 50.000 T CO₂ reduction per year



Biocarbon compounding concentrates

Shaping the future of sustainable plastics

bart@carboganic.eu

www.carboganic.eu

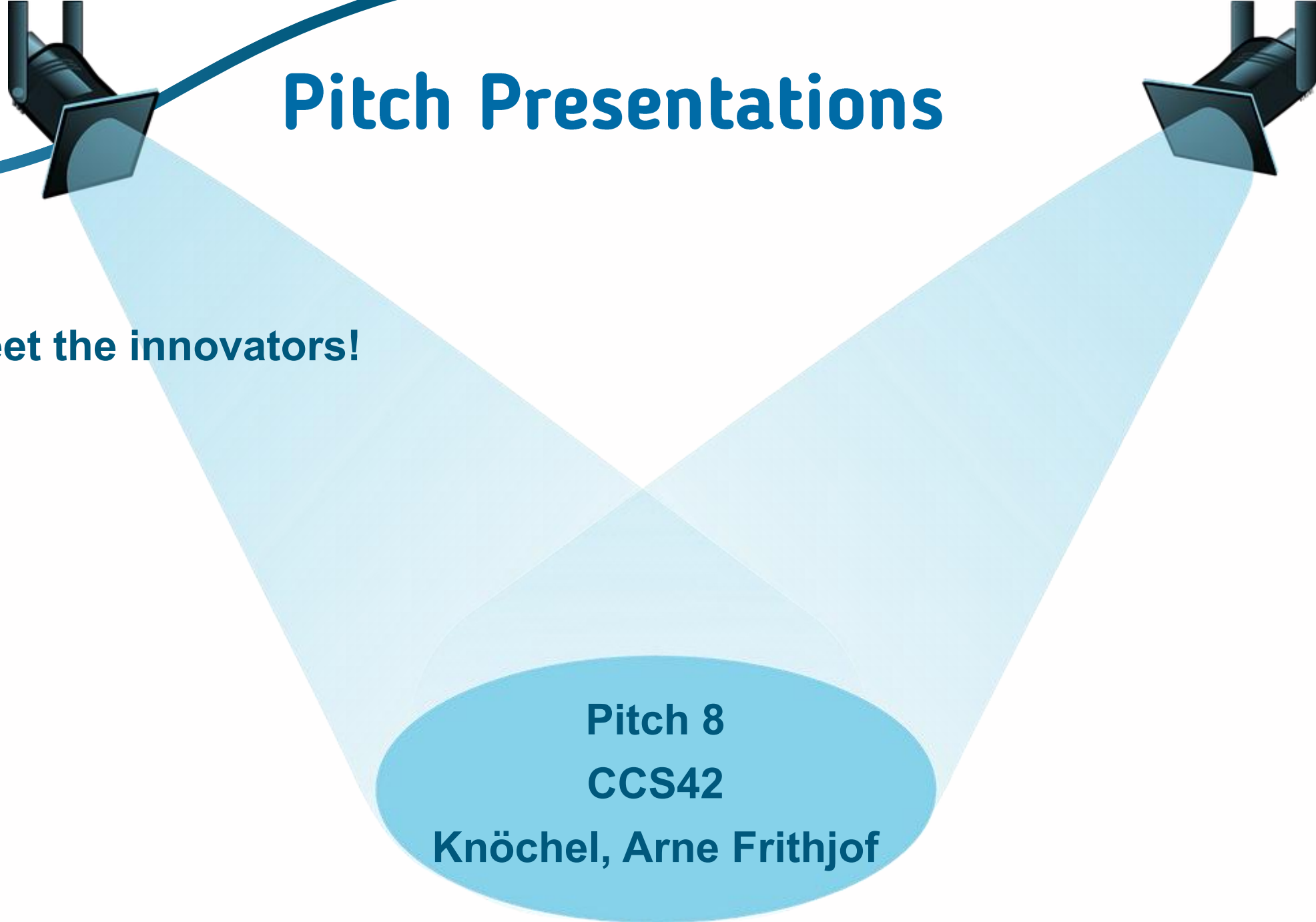


een.ec.europa.eu



Pitch Presentations

Time to meet the innovators!



Pitch 8
CCS42
Knöchel, Arne Frithjof



Decarbonize Concrete

CCS42

CCS42

Knöchel, Arne Frithjof
Managing Director



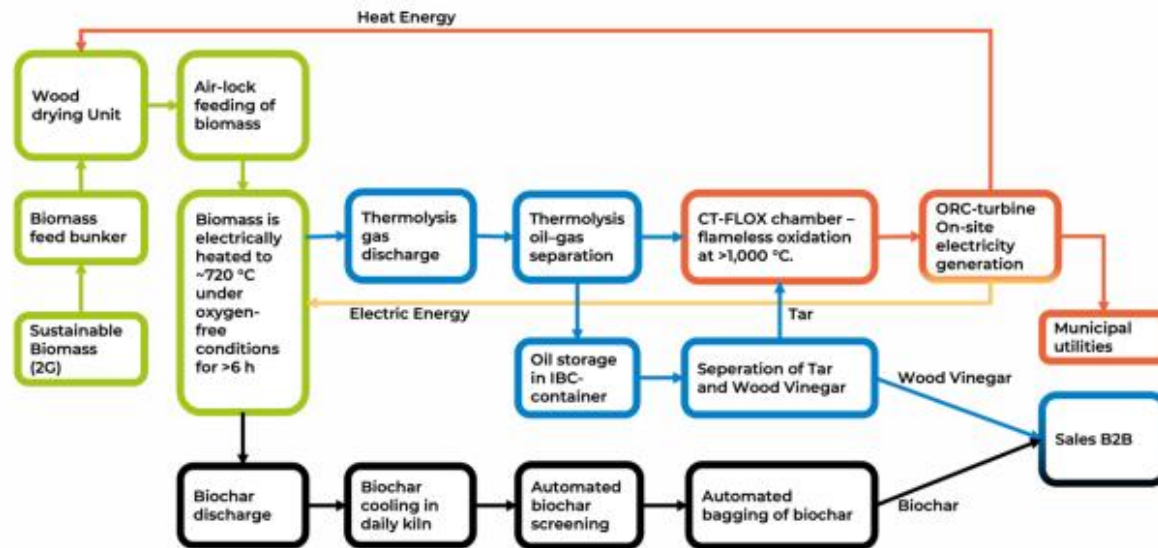
SustainableSolutionsMatch

CO2 as the Next Global Feedstock

Carbon from the air will replace fossil resources.

CCS42 is already using it to produce renewable heat and industrial raw materials.

Biochar production & carbon storage



Differential value & sustainable impact

- **Dual impact:** *CO₂ storage + improved performance*
- **Reduced embodied emissions** (*even below neutral with >3%*)
- **Concrete properties enhanced:**
 - *compressive & flexural strength*
 - *durability & permeability*
 - *thermal performance & shrinkage resistance*
- **C/E-certified as pigment (<5%)**



Market/Target audience

- **Concrete & cement producers**
- **Infrastructure and building projects** with CO₂ targets
- **Municipal utilities & Industrial sites** using high-temperature process heat
- **Public authorities & developers** under EU regulation
- **Co-location opportunities:** material + energy use

Cooperation along the value chain

- *Biomass & residue suppliers*
- *Cement and concrete producers*
- *Industrial and municipal heat off-takers (80–900°C)*
- *Construction, infrastructure & public actors*
- *Research, certification & standardisation partners*

#EENCanHelp

Book a meeting with: CCS42

Knöchel, Arne Frithjof

Managing Director

CCS42

a.knoechel@ccs42.com



een.ec.europa.eu

CCS42





SG Energy Intensive Industries - EII



Within the network, the Sector Group EII provides **specialized support** to **industrial sectors** with high **energy consumption**, primarily focusing on the **production of goods and materials**, such as **steel, chemicals, glass, ceramics, and cement, or on biotechnology**.

We can help you with:

- Finding technologies/solutions to reduce your dependencies to fossil energy
- Boosting your competitiveness thanks to biobased materials
- Introducing you to the right international partners
- Identifying funding for the energy intensive industries



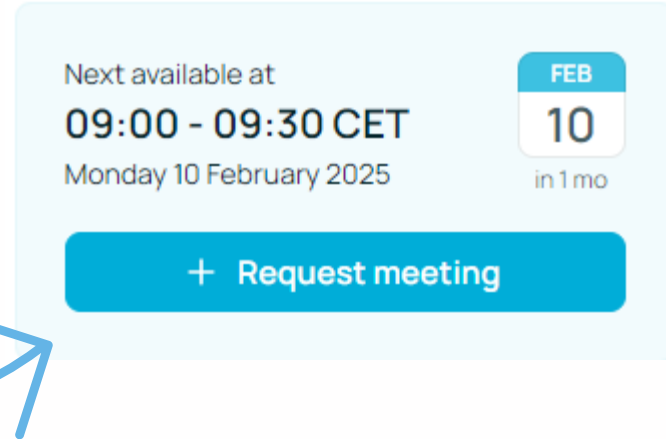
Some highlights

- **More than 5600** participants to Sector Energy Intensive Industry events
- **51** events organised since the creation of the group in 2022
- **125** clients benefit from advanced support

Closing Remarks

A big thank you to all pitchers and attendees!
We appreciate your participation today.

If you'd like to connect with any of the pitching companies, please use the matchmaking tool to **book a meeting!**



Next available at
09:00 - 09:30 CET
Monday 10 February 2025

FEB
10
in 1 mo

+ Request meeting

A blue arrow points from the text 'to book a meeting!' to the '+ Request meeting' button.

Need support? **Enterprise Europe Network is here to help!**

Reach out to your local Network partner:

<https://een.ec.europa.eu/local-contact-points>

#EENCanHelp

Thank you!

Catherine Le Bloa

CCI Limoges haute-Vienne
catherine.lebloa@limoges.cci.fr



Isabelle Gouriou

Grand Est Developpement
i.gouriou@grandestdev.fr



Magali Parent

VLAIO
magali.parent@vlaio.be



Sara Maiez-Tribut

Auvergne Rhône-Alpes Entreprises
Smaiez-tribut@arae.fr



een.ec.europa.eu



Energy Intensive Industries Sector Group

