The next generation of sustainable plastics

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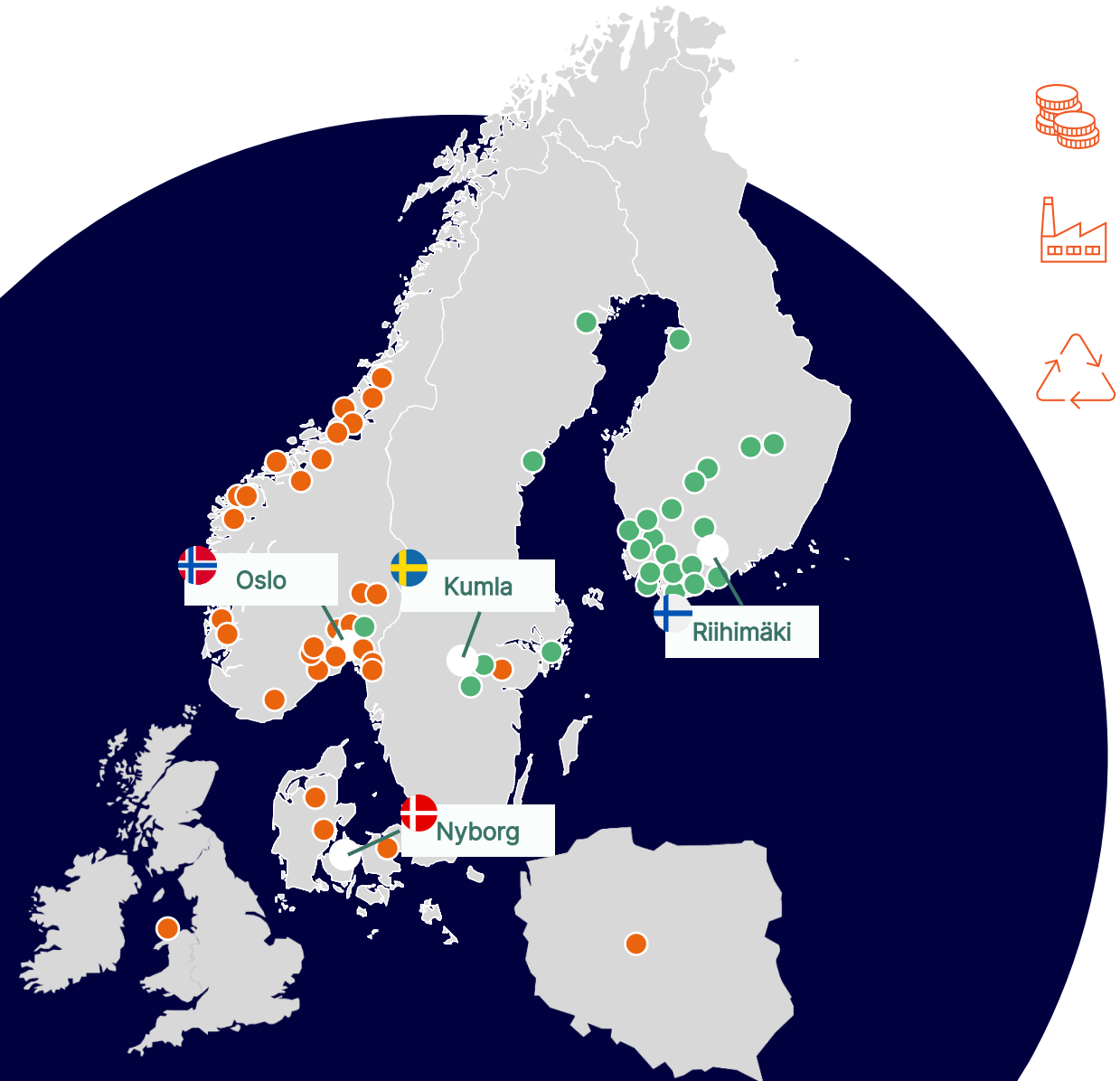
NG Nordic at glance

NG Group & FORTUM Recycling & Waste



14 Bn Revenue NOK / **1.2 Bn** Revenue €

+ 90 waste and processing facilities

Full value chain

~ 4.4m tonnes waste

~ 3500 people

Nordic +

We are a leading Nordic provider of circular solutions and environmental services, tackling the urgent challenges of climate change and resource scarcity.

By transforming waste into valuable resources and removing hazardous substances from circulation, we are avoiding emissions and protecting natural ecosystems.

Through reuse, collection, recycling and depollution, we scale access to circular raw materials and help decarbonize society.

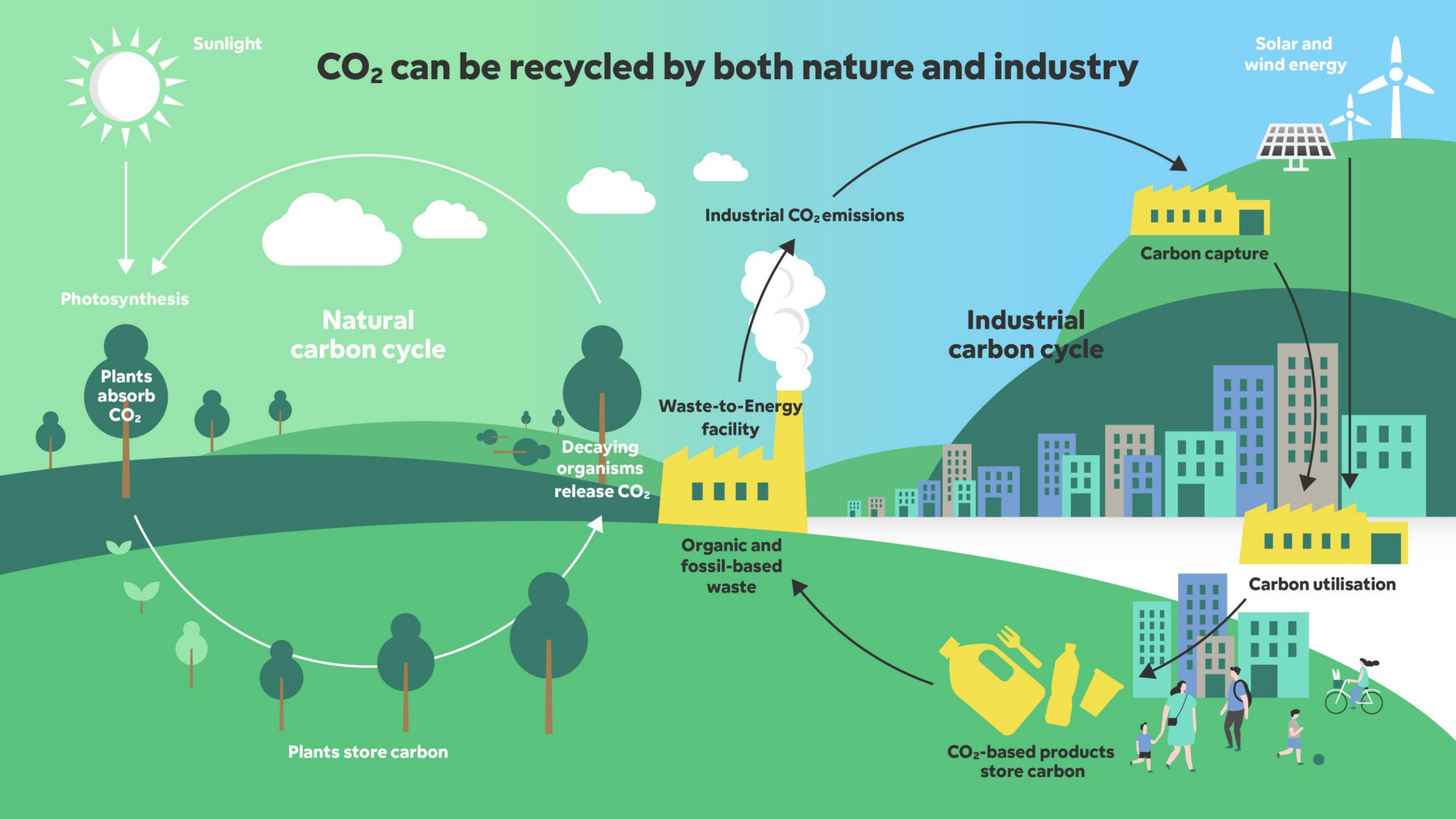
Concept in a nutshell

A new way to cycle materials back to global economy – even the waste that is not recyclable

CO_2 captured from waste incineration can be utilised as raw material for new innovative materials

Cuts CO_2 emissions from the waste incineration

CO_2 based materials can replace fossil materials in different industries (for example in plastics)


CO_2 can be recycled by both nature and industry
Sunlight
Photosynthesis
Natural carbon cycle
Plants absorb CO_2
Plants store carbon
Decaying organisms release CO_2
Industrial CO_2 emissions
Waste-to-Energy facility
Organic and fossil-based waste
Solar and wind energy
Carbon capture
Industrial carbon cycle
Carbon utilisation
CO_2-based products store carbon

*“it is estimated that the **supply of sustainable biomass falls 40-70% short** compared with projected demand by 2050.*

Source: European Commission: “Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU”

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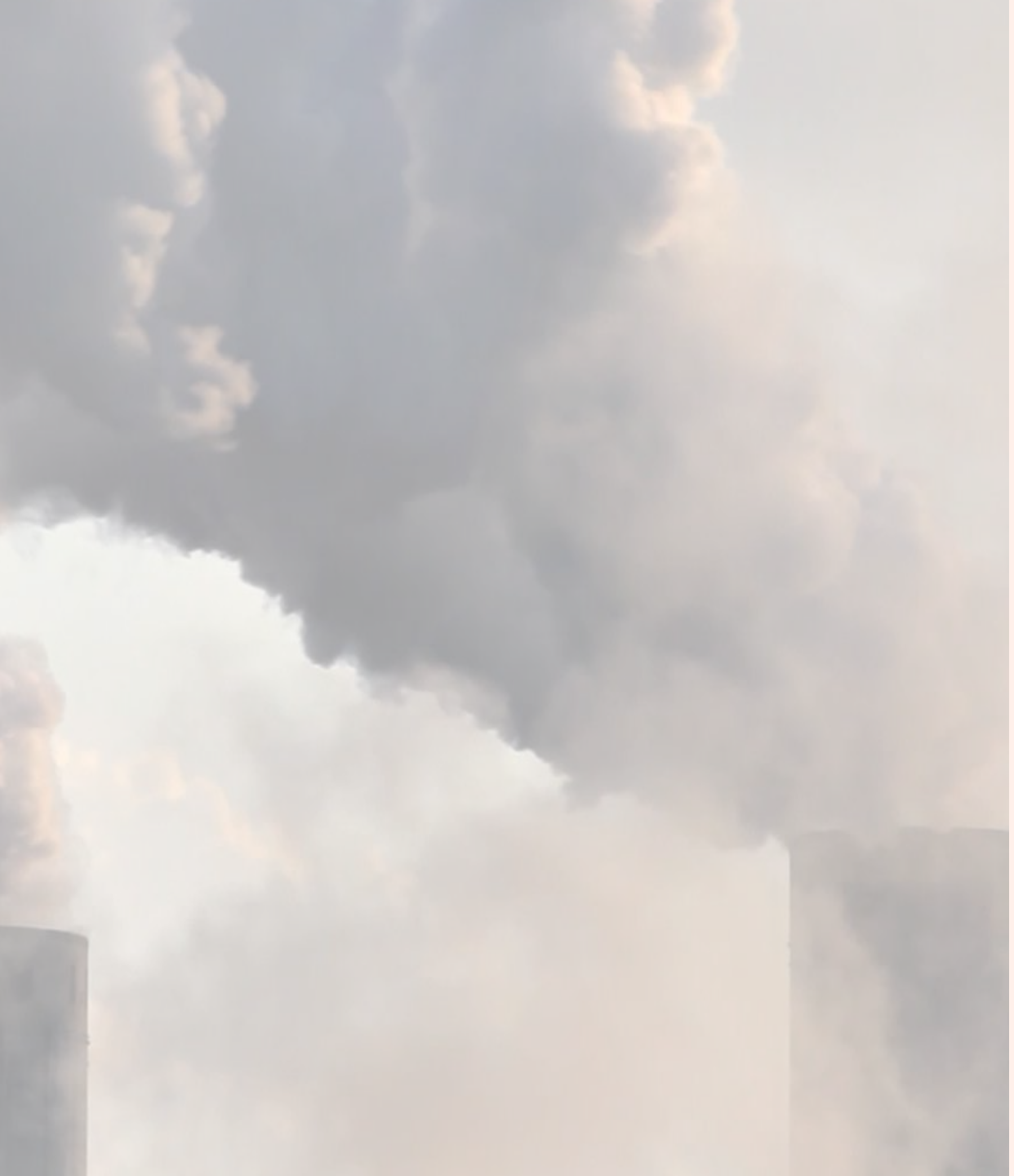

*“it is estimated that the **supply of sustainable biomass falls 40-70% short** compared with projected demand by 2050.*

This makes the use of additional renewable carbon sources such as recycled waste or captured carbon necessary. “

Source: European Commission: “Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU”

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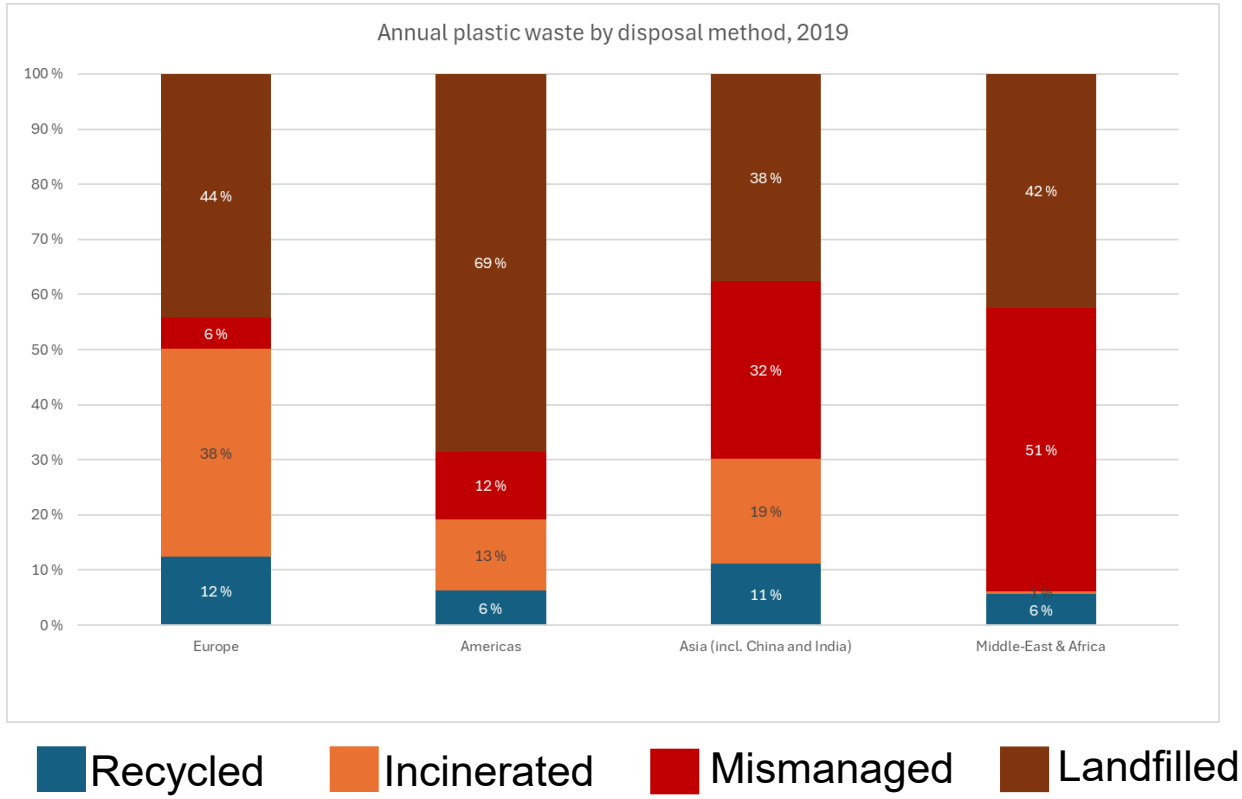
Plastics resistance to degradation causes environmental pollution



Source: https://ourworldindata.org/grapher/plastic-fate?time=2019..latest&country=~Sub-Saharan+Africa&tableSearch=sub+saha

Plastics resistance to degradation causes environmental pollution

BBC: Wildlife Photographer of the Year 2025

Title: Toxic Tip
Photographer: Lakshitha Karunarathna (Sri Lanka)
Location: Ampara, Eastern Province, Sri Lanka

Source: Wildlife of the Year Award 2025 – the best pictures so far

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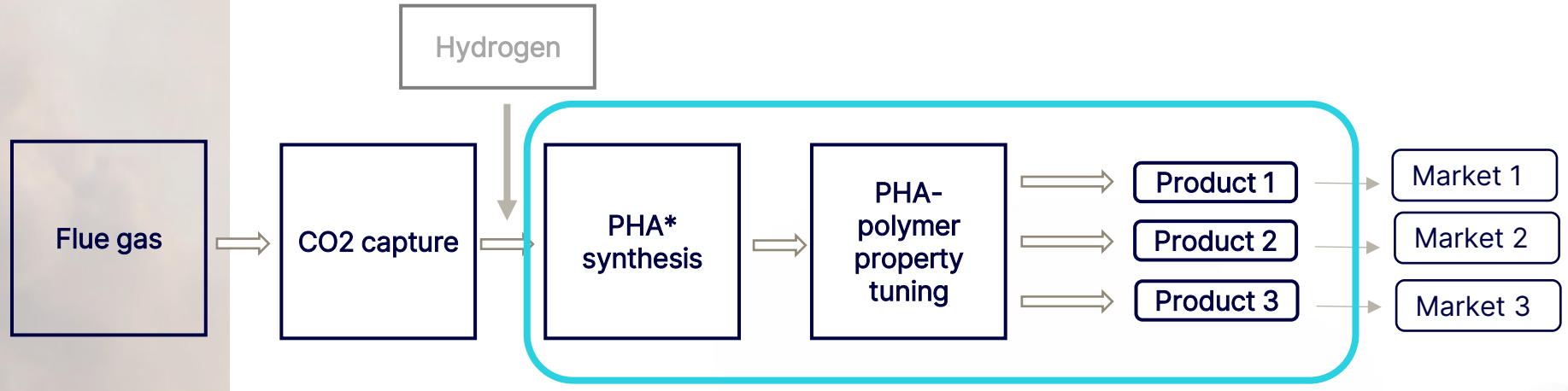
These challenges demand innovative, science-driven solutions

What is INGA ?

It is a plastic called
PHA (PolyHydroxyAlkanoate)

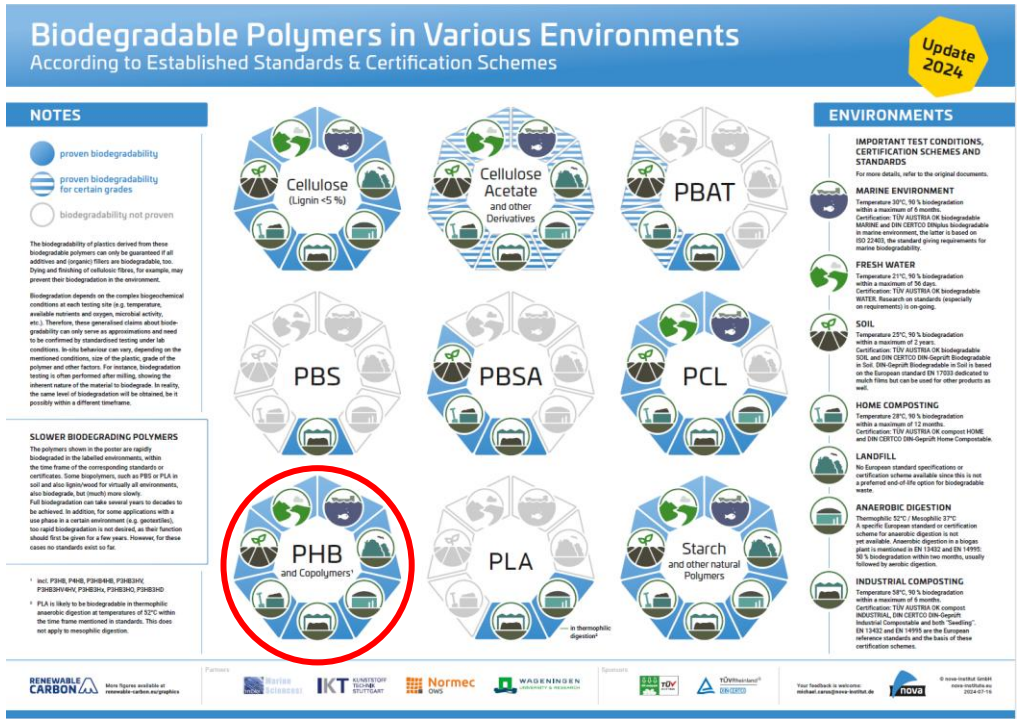
INGA is made from emissions



*PolyHydroxyAlkanoate

INGA
Plastics born from CO_2

PHA is the only polymer that is biodegradable in all tested environments



- Littering is not ok, but if the plastics leaks to the nature, it should not cause environmental pollution
- PHA is thermoplastic so it can be molten and reshaped making it recyclable

Source: https://renewable-carbon.eu/

Source: Biodegradable Polymers in Various Environments According to Established Standards and Certification Schemes – Graphic (PDF, current version) | Renewable Carbon Publications

INGA Plastics born from CO_2

INGA is the world’s first biodegradable plastic born entirely from CO2

INGA can be both stiff and flexible as well as easily moldable, making it suitable for different processing methods, such as injection molding and coating

Where can INGA be used ?

COATING FOR PAPER AND CARDBOARD

COSMETICS

ELECTRONICS

INGA
Plastics born from CO_2

What have we achieved so far ?

2024

World's first biodegradable plastic produced from CO2 emissions

2023

First own laboratory containers built for testing conversion of CO2 into plastics

2022

Launch of Carbon2x and first CCU Pilot

2021

Waste-to-Materials program started

First full-time recruitments to the program – 2 persons

5 full-time persons working in the program

7 full-time persons working in the program

10 full-time persons working in the program

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This is our plan towards commercialization

2023

Ramp-up of Laboratory Pilot containers for production of raw – materials for CO2 based plastics

Investment size:
< 2 M€
Production quantity:
Technology piloting

2025

Piloting of entire production process of CO2 based plastics

Investment size:
10 M€
Production quantity:
< 1 ton/year

2028-2029

Demo scale industrial plant for CO2 based plastics production

Investment size:
TBD
Production quantity:
> 1 500 tonnes /year

2035

Large scale industrial plant for production of CO2 based plastics production

Investment size:
TBD
Production quantity:
> 10 000 tonnes /year

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INGA – Key benefits

1.

It turns
emissions into raw material

Since it uses CO2 as a feedstock

2.

It is
Biodegradable

The only polymer type that breaks down in all tested environments

3.

INGA leverages
novel process technology
that allows

- continuous process
- flexibility to adjust the polymer design to influence the end properties

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Call to action

We’re looking for visionary partners - early adopters - who believe in turning carbon dioxide into a resource, not a liability.

Join us in shaping the future of materials

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