



# Using renewable raw materials to drive the transition to a low-carbon economy

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Stefano Facco

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# Who we are



The **Novamont Group** is an industrial company with its roots in the Montedison School of Science of Materials, created to pursue the ambitious project of various researchers: **the integration of chemistry and agriculture.**

Established in **1990**, it is today a **Benefit Company** certified **B Corp** and international leader in the production of **bioplastics** and the development **biochemicals** and bioproducts of **renewable origin.**

# Our DNA

## Novamont: a group with a triple vocation



### INDUSTRIAL STRUCTURE

Turnover 2021

€ 414 mln

**Mater-Bi / Bioplastics**

total production capacity

>180.000 ton/y

**Bio BDO** from fermentation

total production capacity

30.000 ton/y

**Pelargonic Acid**

**Azelaic Acid**

(Matrica - JV Novamont  
Eni Versalis )

**Tetrahydrofuran - Thf**

Employees

> 650

**Origo-Bi / Biopoliesters**

total production capacity

>110.000 ton/y

**Bioplastic applications**

production capacity (BioBag)

9.000 Mton/y

Dielectric oils and  
biolubricants

**Matrol-Bi**

**Biomethane**

### RESEARCH AND DEVELOPMENT

3

Research  
centers

5

world's first  
technologies

~ 1.500

patents / patent  
applications to 2022

50 ML

industrial  
investment and  
R&D in 2021

~ 20%

people dedicated to research,  
development and innovation  
activities\*

3

Technology hubs with pilot plants  
and demo plants

### TRAINING CENTER

> 450

training activities since 1996 for young researchers and expert figures  
multidisciplinary training paths activated with national and international  
universities and research centers

# Circular bioeconomy to regenerate local areas



## The three pillars of our circular bioeconomy model



### THE REINDUSTRIALIZATION OF DISUSED SITES



Biorefineries built from the reindustrialization of disused or no longer competitive production sites. Development of innovative and sustainable processes that contribute to the decarbonization of the economy.



### THE INTEGRATED AGRICULTURAL VALUE CHAIN AND SCRAPS VALORIZATION.



Research and innovation for the development of agricultural value chains with low environmental impact, through the valorization of marginal lands and not in competition with food production. Research and innovation for the transformation of waste and by-products into new bioproducts.



### PRODUCTS AS SOLUTIONS



Products designed to close the carbon cycle and ensure that no persistent substances accumulate in compost, treated water, sludge, and soil, overcoming the problem of pollution. Products also designed to be reused and recycled.

# The integrated biorefinery

## The reindustrialization of disused sites



<span style="color: blue;">●</span> NOVAMONT SEATS	<span style="color: orange;">●</span> MATER-AGRO
<span style="color: yellow;">●</span> JV NOVAMONT / ENI VERSALIS	
EXPERIMENTAL FIELDS	

**NOVAMONT**  
*Novara (NO)*

- Headquarter and research center
- Technology hub

**Mater-Agro**  
*Novara (NO)*

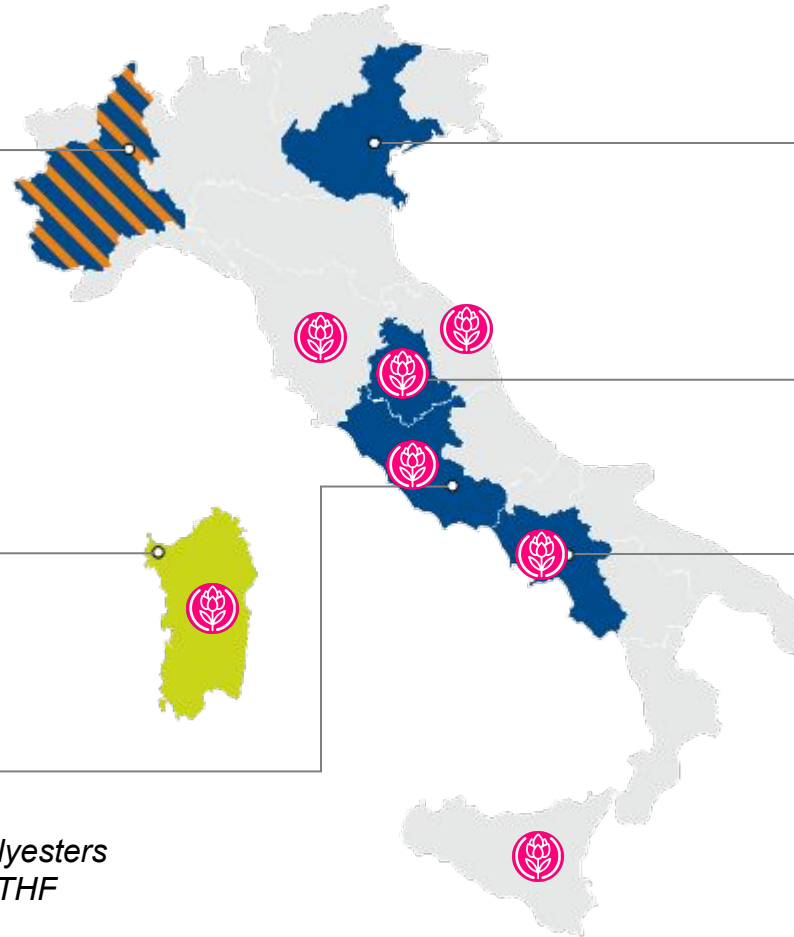
- Agricultural product distribution

**Matrica**  
*Porto Torres (SS)*

- Production of pelargonic acid and azelaic acid from renewable sources

**NOVAMONT**  
*Patrica (FR)*

- Production of biopolyesters  
*Origo-Bi, Mater-Bi, THF*



**Mater-Biotech**  
*Adria (RO)*

- Production of 1,4 bio-BDO

**NOVAMONT**  
*Terni (TR)*

- Production of Mater-Bi, Origo-Bi, Matrol-Bi, new monomers
- Research Center
- Technology hub

**NOVAMONT**  
*Piana di Monte Verna (CE)*

- R&D center for industrial biotechnology
- Technology hub

# The agricultural value chain integrated in the local

Areas component of agricultural value chains with low environmental impact



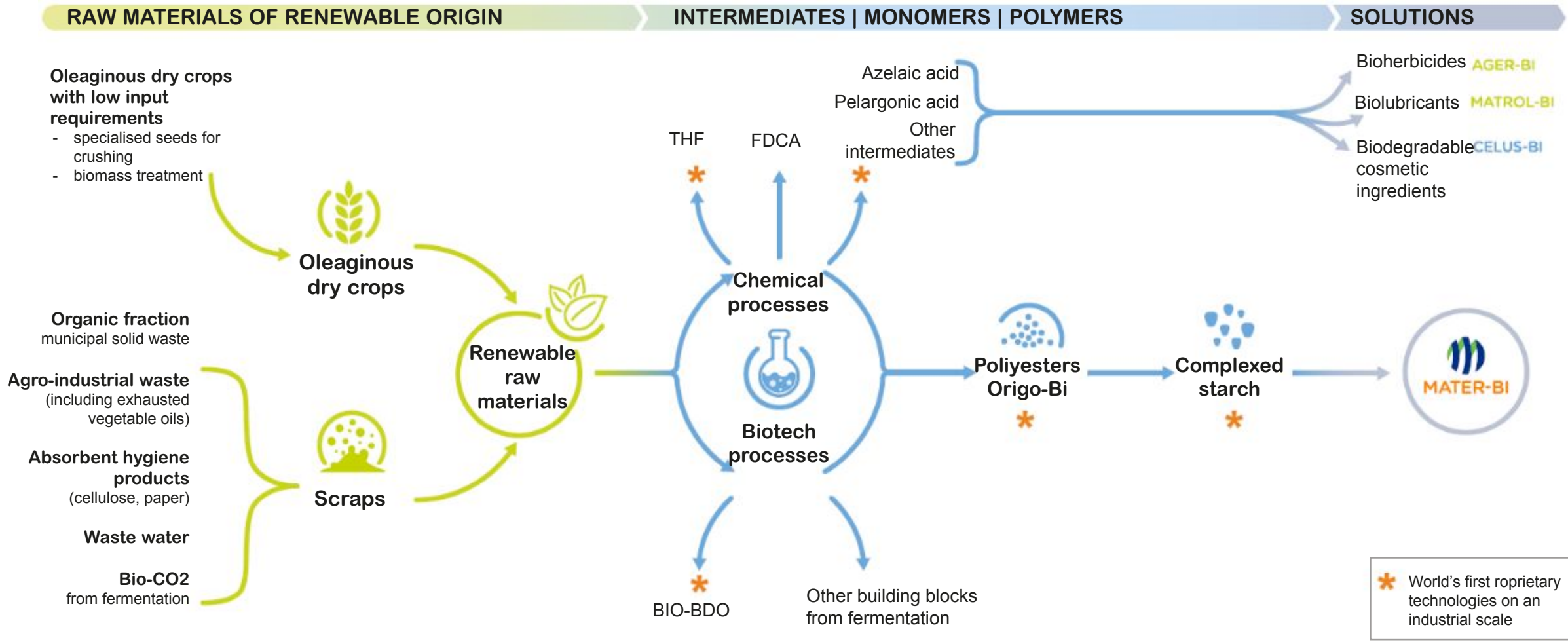
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Novamont has always promoted research projects targeted on different territories according to their specificities

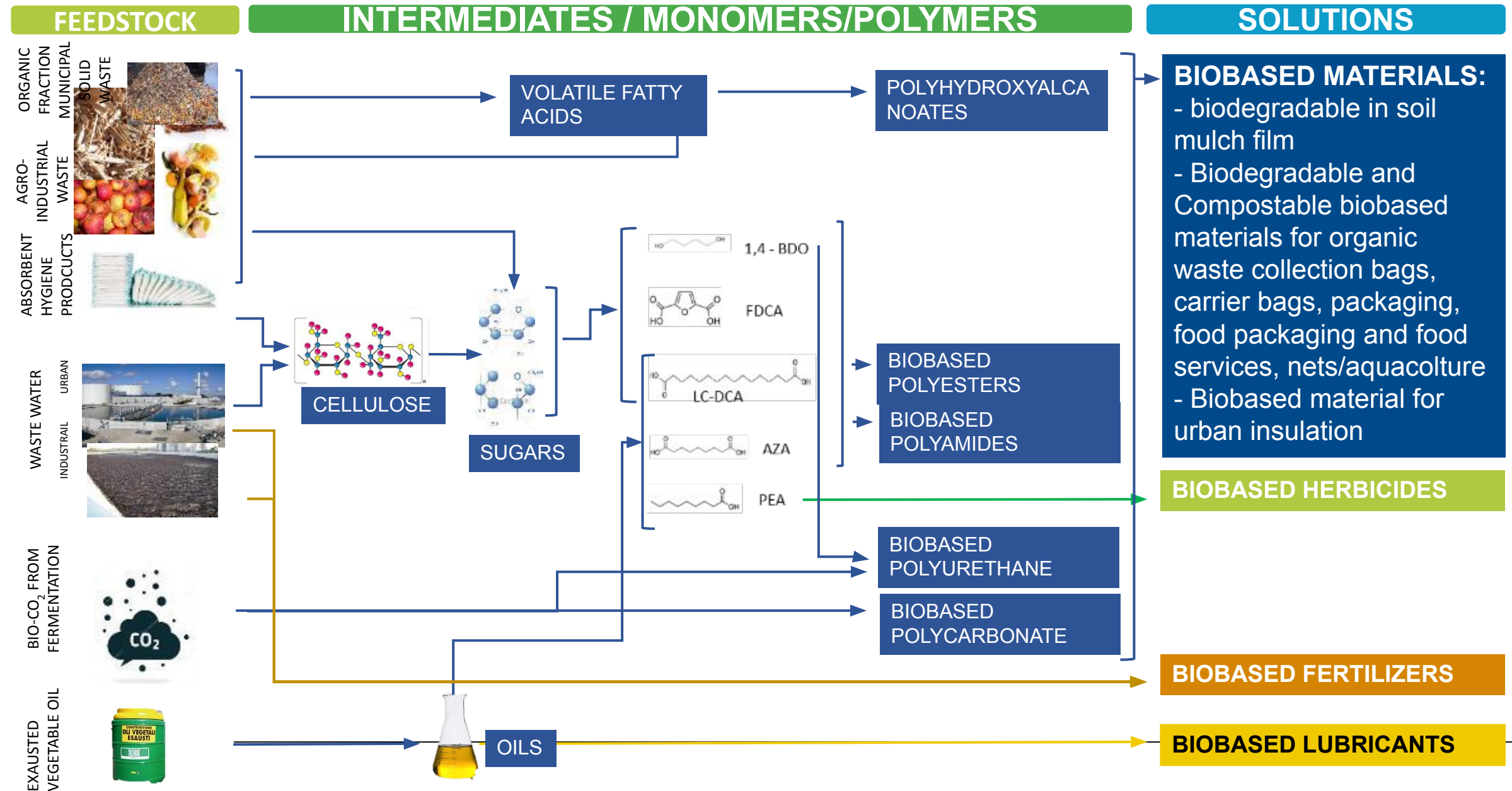
- **Promotion of low input oleaginous drycrops able to restore organic carbon in marginal land**
- Dissemination of sustainable agriculture through training on good soil management practices.
- Reduced environmental impact on soil and water through the use of: biodegradable mulch films, fitosanitary products based on pelargonic acid, biolubricants for agricultural machineries.
- Cascading use of all crop components to make products and co-products ranging from biochemicals to animal feed and to meet the energy needs of the industrial process
- **Collaboration with Coldiretti started more than 10 years ago in the experimental fields in central Italy**

# Our proprietary technologies

## Upstream integration 1990 - 2023



# Upstream integration

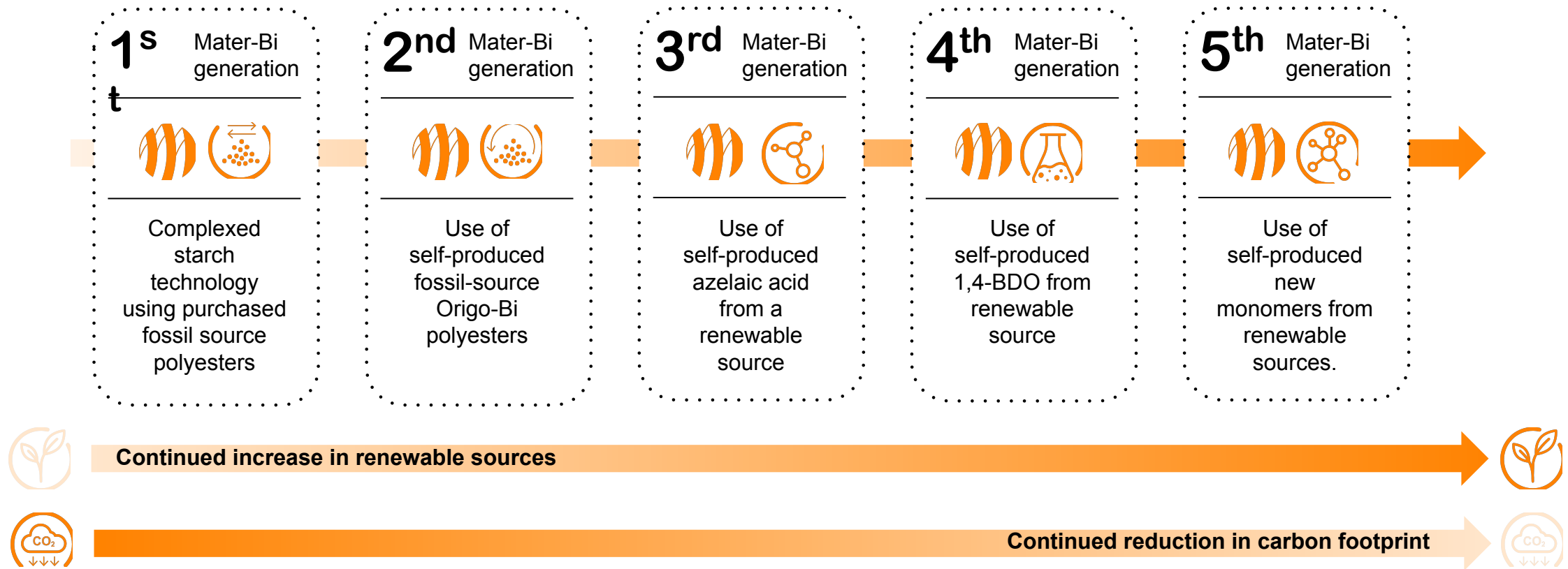




# Mater-Bi



A biodegradable and compostable material evolving toward increasing sustainability and circularity





# Products as solutions

## Where biodegradability and compostability represent real added value



### Retail



Carrier bags and fruit and vegetable bags adopted by large retailers can be reused for the separate collection of organic waste



### Waste management



Bioplastics help improve organic waste management, reducing its potential for pollution and consequently promoting the production of quality compost



### Agriculture



Soil biodegradable products simplify plastic waste management operations and greatly reduce the chances of pollution in a sector where there is a high rate of dispersion into the environment



### Packaging foodpackaging



Compostable packaging can be disposed of with organic waste, representing a solution for all those traditional packaging that today cannot be recycled or end up polluting organic waste

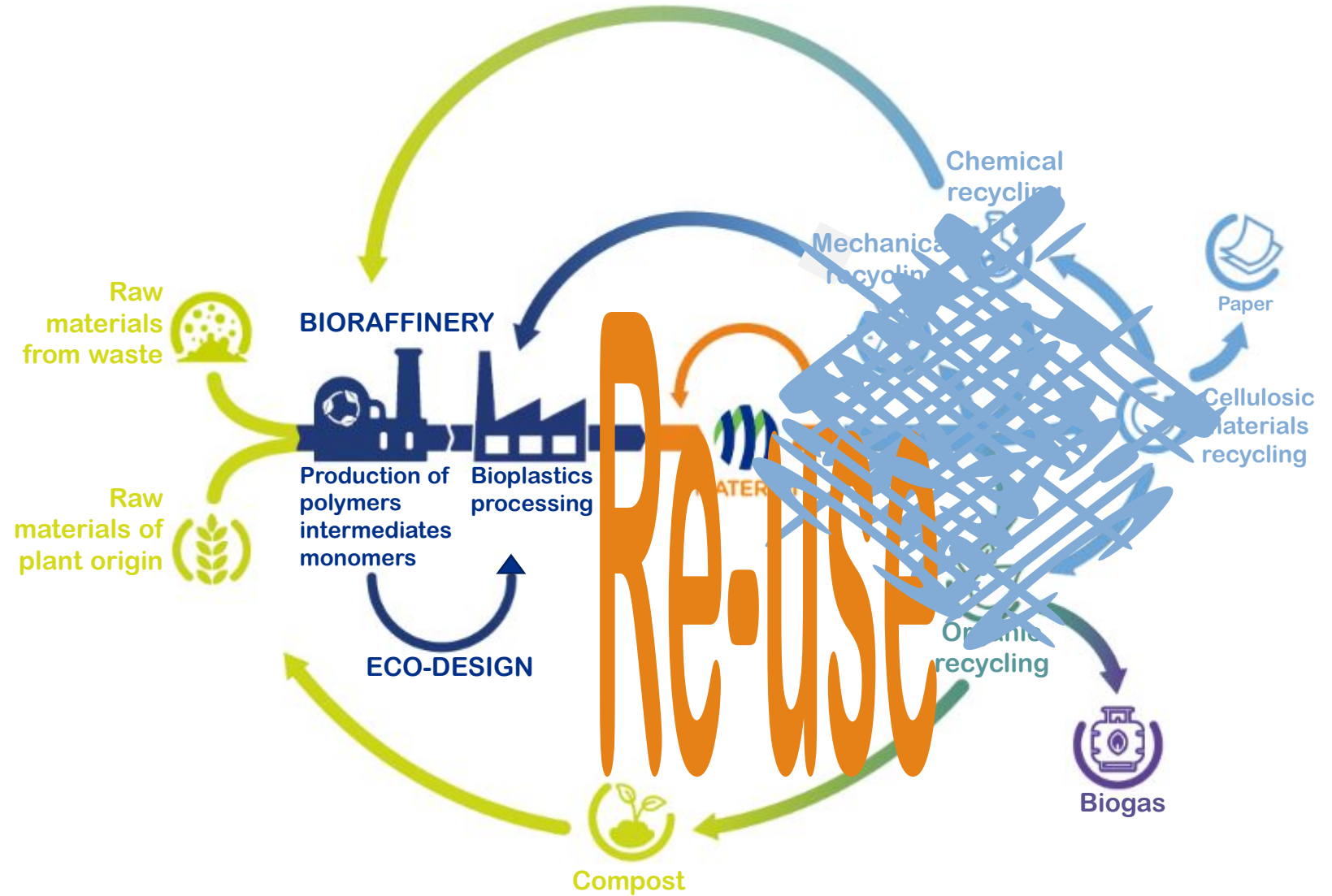


### Foodservice



Compostable foodservice ware allows for simplified waste management when it is not possible or practical to use washable and reusable ones, such as at large events or in closed circuits.

# A model for decoupling development from resource use and consumption





# The Italian case study

## The separate collection of organic waste through the use of compostable bags



A virtuous value chain of high-quality compost with extraordinary cases of excellence and regenerative agriculture

The **organic fraction** collected in Italy:

2007 **2,5**  
Millions of tons

2021 **>7**  
Millions of tons



Revitalization of the plastic bag value chain

New processes and bioproducts at the European level



Italy ranks first in Europe for food waste recycling, thanks in part to the separate collection model initiated by the bioplastics and biochemicals value chain

Annual tons of organic waste currently collected

Europe **2,5 MT** **16%**  
Of the total

Italy **3,6 MT** **47%**  
Of the total

# Innovation Projects: from waste to valuable raw materials



## Scalable technologies for bio-urban waste recovery

Novamont, through biotechnological processes, has demonstrated the conversion of sugars obtained from the organic fraction of municipal solid waste into biobased materials suitable for the realization of sustainable applications, such as organic waste collection bags and food packaging trays

[www.scalibur.eu](http://www.scalibur.eu)



## Conversion of diluted mixed urban bio-wastes into sustainable materials and products in flexible purple photo-biorefineries

Novamont, through biotechnological processes, is demonstrating the conversion of sugars obtained from cellulose recovered from urban wastewater into biobased materials suitable for the realization of sustainable applications, such as mulch film or injection moulded caps for cosmetic packaging

[www.deep-purple.eu](http://www.deep-purple.eu)



## Establishing a Multi-purpose Biorefinery for the Recycling of the organic content of AHP waste in a Circular Economy Domain

Novamont, through biotechnological processes, has demonstrated the conversion of sugars obtained from cellulose recovered from the recycling of absorbent hygiene product waste into biobased materials suitable for the realization of sustainable film applications, including packaging for the absorbent products themselves

[www.embraced.eu](http://www.embraced.eu)

The three innovation projects support the demonstration of a biorefinery model strongly based on the concepts of modularity and flexibility, which allow the exploitation of alternative waste feedstocks with a focus on those widely available in the urban environment of any European Region, such as the organic fraction of municipal solid waste, absorbent hygiene product waste and urban wastewaters

“The challenge of our millennium is in the balance between the technical means that humanity possesses and the wisdom in how we will make use of them”.

Umberto Colombo

Thank you!



[www.novamont.it](http://www.novamont.it)