International Best Practices in Waste Prevention and Separate Collection

Risks and opportunities of prevention policies: THE ITALIAN CASE STUDY

waste in progress

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6th Edition

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Summary

- Risks and opportunities of prevention policies
- Implementation of the new regulations on prevention of single-use packaging
- Benefits of compostable packaging
- Biodegradable and compostable solutions

Who we are

MATER-BI

Highlights

Turnover 2022

€ 426 mln

Employees

~ 650

Bioplastics
total production capacity

>170.000 ton/y

Biopoliesters total production capacity

>117.000 ton/y

Bio BDO from fermentation
total production capacity

30.000 ton/y

Pelargonic Acid
Azelaic Acid
Tetrahydrofuran – THF
Biomethane
Dielectric oils and biolubricants

13
industrialized proprietary technologies

of which **4**
first of a kind

~ 1.600
patents / patent applications in 2023

> 25%
people dedicated to research, development and innovation activities in 2023

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

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

In 2023, it was acquired by **Eni Versalis,** Italy's leading chemical company, whose strategy is strongly oriented towards specialising its portfolio also through chemistry from renewable sources.

NOVAMONT

Risks and opportunities of prevention policies

THE IMPACTS OF THE SINGLE USE PLASTIC DIRECTIVE (SUP) IN THE ITALIAN SYSTEM

Prevention policies can provide economic, social and environmental advantages if they are clear, flexible and based on solid scientific basis

SUP aims at preventing and reducing the impact of **certain plastic products** on the environment, in particular the marine environment, by excluding them from the market **where sustainable alternatives are easily available and affordable**

COTTON BUD STICKS
CUTLERY, PLATES, STRAWS AND STIRRERS
BALLOONS AND STICKS FOR BALLOONS
FOOD CONTAINERS
CUPS FOR BEVERAGES
BEVERAGE CONTAINERS
CIGARETTE BUTTS
PLASTIC BAGS
PACKETS AND WRAPPERS
WET WIPES AND SANITARY ITEMS

OPPORTUNITIES

If the Directive recognized the role of **compostable bioplastics** it could open a new market for innovative sustainable alternatives, avoiding wasting years of European R&D investment in innovative and sustainable products.

See CBE JU data https://www.cbe.europa.eu/

Risks and opportunities of prevention policies

THE IMPACTS OF THE SINGLE USE PLASTIC DIRECTIVE (SUP) IN THE ITALIAN SYSTEM

Recognizing their role in supporting the organic waste collection, Italy transposed the Directive explicitely **opening the market for compostable bioplastics** in those circumstances where they result in being more sustainable and adapt to hygiene and safety, creating an opportunity for bioplastics

OPPORTUNITIES

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Source: https://www.ecodallecitta.it/piatti-illegali-sul-mercato-la-filiera-delle-bioplastiche-chiede-un-intervento/

Risks and opportunities of prevention policies

COMPOSTABLE BAGS AS OPPORTUNITIES FOR ORGANIC RECYCLING IN THE ITALIAN SYSTEM

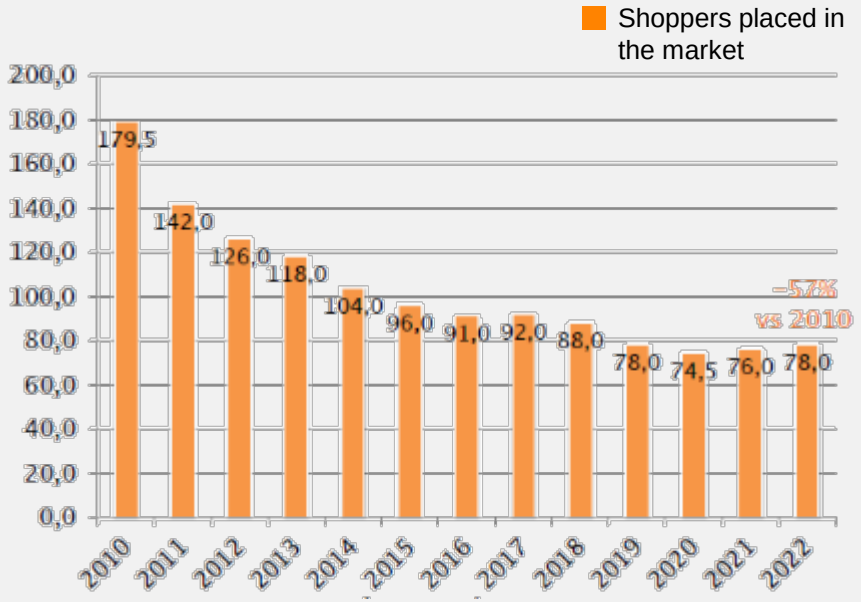
Italy is first in Europe for food waste recycling, thanks in part to the separate collection model initiated by the bioplastics and biochemicals value chain

Annual tons of **organic waste** currently collected:

Europe
9,5 MT
16%
Of the total

Italy
3,6 MT
47%
Of the total

Italian carrier bags market



This confirms the effectiveness of the national regulatory system, which is gradually taking effect: the reduction in the use of single-use carrier bags is evident, despite the slight increase recorded, also favoured by a greater diffusion of non-standard products.

Source: Zero Waste Europe and BioBased Industries Consortium, Bio-waste generation in the EU: Current capture levels and future potential, 2020.
Plastic Consult per Assobioplastiche, La filiera dei biopolimeri compostabili, 2023.

Implementation of the new regulations on prevention of single-use packaging

PACKAGING AND PACKAGING WASTE REGULATION (PPWR): COMPOSTABLE PLASTICS

The interim compromise on PPWR requires **some packaging applications** to be compostable and also sets mandatory "essential requirements" for compostable packaging.

National governments can go further and allow **other packaging applications to be collected in the organic waste** stream, **make them mandatory or exempt them from restrictions** on single-use packaging in their territory within 18 months of the regulation coming into force.

It will be a great opportunity to support authorities and promote positive legislation for food waste collection and compostable packaging!



Implementation of the new regulations on prevention of single-use packaging

PACKAGING AND PACKAGING WASTE REGULATION (PPWR): COMPOSTABLE PLASTICS

- Recognized their **role in connection with the collection of organic fraction (FORSU)**: promoted the use of compostable bioplastics in useful applications to increase collection and recycling rates of household organic waste, especially where separation between contents and container is difficult (recital 35 and art. 8)
- Recognized their **dual recyclability**: in the organic waste fraction along with biowaste to produce compost (indicated their count in organic recycling targets, Art. 47.8), but also highlighted the possibility of mechanical recycling (Art. 8.3)
- Exempt **from minimum recycled plastic content requirements**: the exemption is particularly relevant for food contact applications by allowing environmental sustainability to be combined with safeguarding health and food safety requirements [Art. 7(3)]

Possible alternatives to plastic packaging

COMPOSTABLE SOLUTIONS

- The use of compostable food-packaging makes it possible to virtuously obviate the problems associated with the disposal of plastic packaging that is **difficult to recycle**, avoiding its disposal in landfills or incineration. In particular, the **homogeneity** of compostable waste makes it possible to obviate three main problems:
  - the current unrecyclability of packaging made of different (non-compostable) coupled materials;
  - tendency of some of the food packaging to enter the organic stream (contaminating it);
  - tendency of food residues to contaminate the food packaging in the stream of plastics.

- In fact, compostability is a rewarding feature particularly for **food-contact packaging**, packaging that is then partially contaminated by it and, if not compostable, risks in turn contaminating the **separate collection** (think of organic residues in the plastic stream) and at the same time not valuing a waste, the organic one, that if properly treated becomes a resource capable of generating **quality compost to return nutrients to the soils**

Benefits of compostable packaging

COMPOSTABLE SOLUTIONS: SOME EXAMPLES

↓ Retail

↓ Waste management

↓ Agriculture

↓ Packaging and foodpackaging

↓ Foodservice

Benefits of compostable packaging

COMPOSTABLE SOLUTIONS: SOME EXAMPLES

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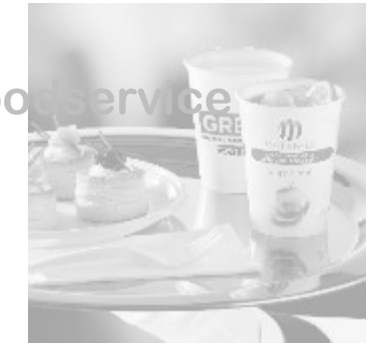

Compostable packaging can be disposed of with organic waste, providing a solution for all the traditional packaging that today cannot be recycled due to:

- Small size
- Multimaterial composition
- Contamination by organic residuals

Biodegradable and compostable solutions

Biodegradable and compostable solutions

BIODEGRADATION IN SOIL

needed for auxiliary products used in agriculture at high risk of dispersion in soil, creating accumulation problems (i.e. bioherbicides, biolubricants, mulch films, slow release devices, coatings for seeds/ fertilizers etc.)

BIODEGRADATION IN WATER

needed for products with problems of accumulation in water and in sewage sludges of water treatment plants, as in case of non biodegradable additives for cosmetics and detergents

BIODEGRADATION IN COMPOSTING

Needed in applications highly likely to be polluted by food residues or which would pollute organic waste that would then end up in landfills (fruit&vegatable bags, waste bags, coffee capsules, food packaging difficult to be recycled, multilayer films, labels, foodservice products, etc.)

Thank you!

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