

A close-up photograph of a hand reaching towards a mushroom growing on a bed of moss. The hand is positioned at the top right, with fingers slightly curled. The mushroom is in the foreground, slightly out of focus, showing its gills and stem. The moss is vibrant green and covers the ground. A semi-transparent white box with a yellow square in the top left corner is overlaid on the left side of the image, containing the title text.

Novozymes' contribution to the European Green Deal

A European company, with a global reach

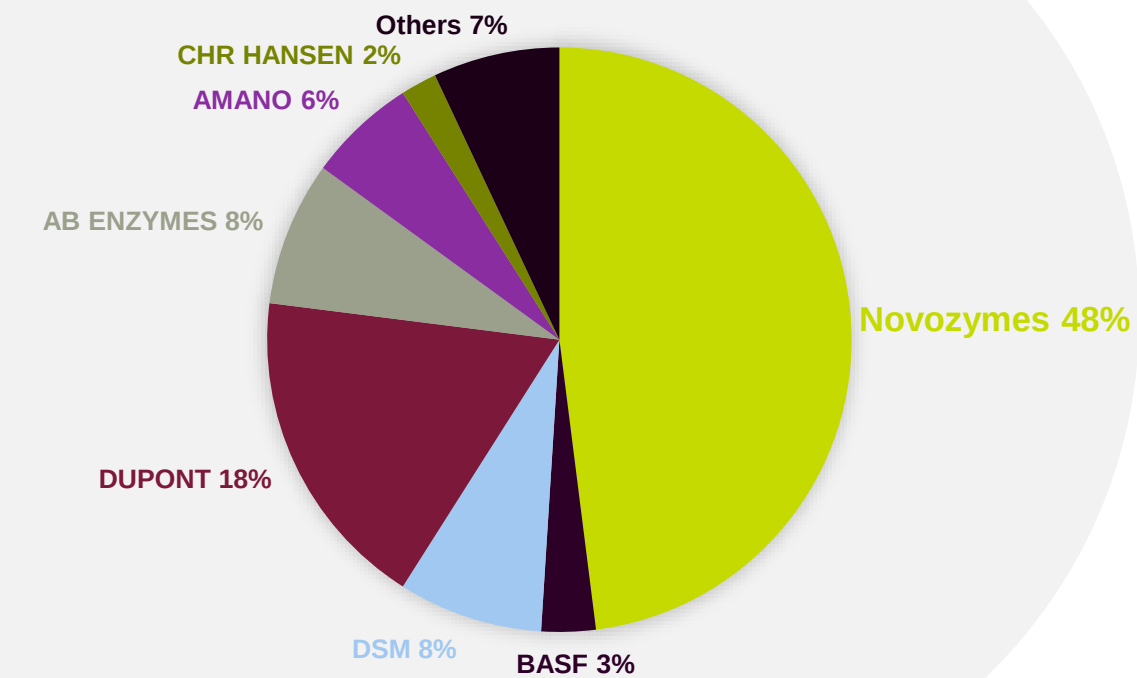
Novozymes is the European leader in industrial biotechnology and the biggest producer of enzyme solutions worldwide



Enzymes – Numbers and people

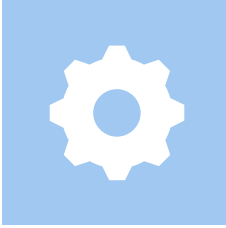
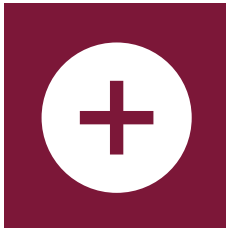
Enzymes are at the core of the EU’s industrial biotechnology sector, which the EU has identified as a Key Enabling Technology

Global market share of enzyme products by company



Source: Guerrand (2017)

Economic effects associated with the activities of the European industrial biotech

	 Employment (FTE)	 Turnover (B€)	 Value added (B€)
DIRECT	94,000	31.5	8.4
UPSTREAM	269,000	38.6	15.2
DOWNSTREAM	98,000	18.1	5.9
INDUCED	25,000	4.6	2.1
TOTAL	486,000	92.8	31.6

Source: EuropaBio (2016)

Where our products are used

AGRICULTURE & INDUSTRIAL BIOSOLUTIONS



BioAg



Animal Health
& Nutrition



Bioenergy



Water



Fine
Chemicals



Grain
Milling



Oils &
Fats



Starch &
Distilling



Textile &
Leather



Pulp &
Paper

CONSUMER BIOSOLUTIONS



Detergent



Softeners



Dishwash



Medical
cleaning



Professional
cleaning



Baking



Dairy



Beverages



Protein



Food

Our plans for the future



Biodegradable plastics and textiles

Enzymes can **break down PET plastic** used in plastic and textiles to make them biodegradable.

With French biotech company Carbios, we are scaling up PET-degrading enzyme production to an industrial scale.



Alternative proteins

Enzymes enable the rapidly growing alternative proteins industry to create nutritious alternatives to animal products.

Enzymes are used in all types of alternative proteins to add flavour, texture, and nutrients.



Energy-efficient and non-toxic Carbon Capture & Storage

The **enzymatic carbon capture** process uses an enzyme present in the human lung instead of toxic chemicals to extract CO₂.

It produces no toxic waste, aerosols or contaminants and is more energy-efficient than conventional processes.

What is preventing us from achieving the Green Deal's goals

Enzymes are safe and sustainable, as recognized in EU Ecolabel and other EU legislation.

However – they are labelled as “**Substance of Concern**” because of their respiratory sensitizing properties.

This will have a **spill-over effect** across legislation and is **counterproductive** to the Green Deal.

REACH Regulation Revision

Products containing enzymes (e.g., EU Ecolabel detergents) would be restricted under the Generic Approach to Risk Management.

Safe and Sustainable by Design

Enzymes would not qualify as a “Safe and Sustainable by Design” substance under upcoming framework

Textiles Strategy

Enzyme use in textile products would be phased out

Taxonomy

The manufacturing and use of enzymes would **not be considered sustainable**. In turn – biodegradable plastics produced with enzymes would not be Taxonomy aligned.

Ecodesign for Sustainable Products proposal

The use of enzymes in many products would be tracked and minimised.

Policy asks

- 1 **Exempt** safe, biological substances as defined in the **Sustainable Use of Pesticides Regulation** proposal from the definition of **substances of concern**
- 2 **Recognize enzymes' role** in the green transition by aligning the **Taxonomy** and **Safe and Sustainable by Design initiatives** with the role that bio-based solutions provide
- 3 **Remove enzymes from the scope of upcoming regulatory tools** (e.g., REACH Regulation – Generic Approach to Risk Management, MAF) to prevent a negative effect on the market
- 4 Envision a **dedicated regulatory framework for bio-based substances** in the long-term

Thank you