

# The Value of Biosolutions: Growth & Prosperity to 2035

— European edition

## Executive Summary

Biosolutions could create more than 600,000 direct and indirect jobs in Europe by 2035 — nearly the equivalent of the entire population of Luxembourg. In just a decade, the total economic gain could reach EUR 133 billion, of which EUR 46 billion would come from direct value creation of the biosolutions sector. The direct value alone roughly equals the annual contribution to the EU budget by France, Italy and Spain combined.

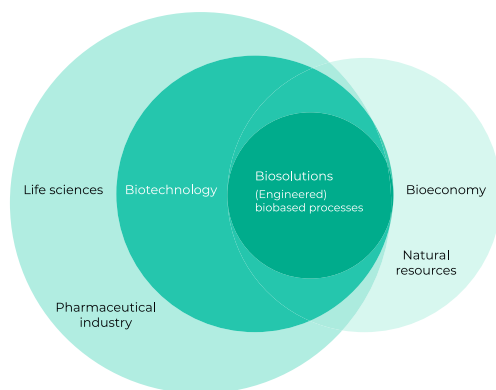
This report is the first of its kind to examine the economic footprint of biosolutions in Europe. As part of a broader series, this edition presents global data and offers a focused analysis of **Europe**, including data for **Denmark, France, Germany, Italy, Poland, Spain** and the **United Kingdom**. Future editions will explore the economic footprint and the value of biosolutions in additional countries and regions.

The report is developed by Amsterdam Data Collective (ADC) and commissioned by Novonesis. The analyses in the report were carried out by ADC with input from experts in the biosolutions field including DI Biosolutions, the European Biosolutions Coalition, the International Advisory Council on Global Bioeconomy, Novonesis, and the World Economic Forum Bioeconomy Initiative and the support of policy knowledge partners Dragoman and Szpirt & Co.

## About biosolutions

Microbes, enzymes, and other proteins are the building blocks of all living things. Using modern science and technology, these microscopic changemakers can be used as solutions to help businesses reduce waste, save energy and water, cut dependence on fossil resources, and develop innovative and profitable products. These biological solutions – ‘biosolutions’ – are already used across more than 30 industries from preventive health and industrial applications to agriculture and food production.

While biosolutions are part of the bioeconomy, the two terms are separate and distinct: bioeconomy leverages biological resources and processes to integrate sustainable growth, circularity and ecosystem regeneration.



Source: Illustration made by ADC.

Note: The sizes of the circles do not represent the actual market values.

## The economic footprint of the biosolutions sector in Europe

The biosolutions transformation is happening now. The sector now rivals traditional industries in scale and impact, creating economic opportunities and reducing reliance on traditional, unsustainable resources and processes.

### Today's biosolutions sector snapshot:

In terms of **economic value** (direct and indirect production output across the value chain) the biosolutions sector represents **€60 billion**.

- Direct value: €24 billion
- Indirect value: €36 billion

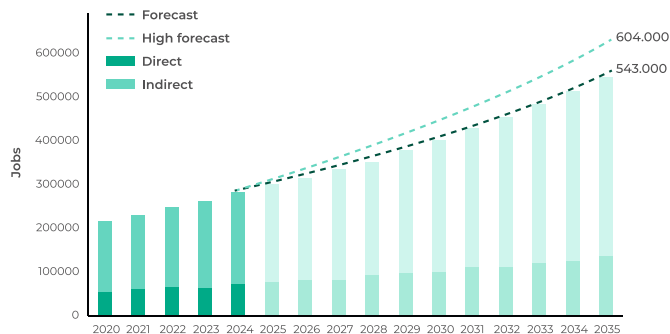
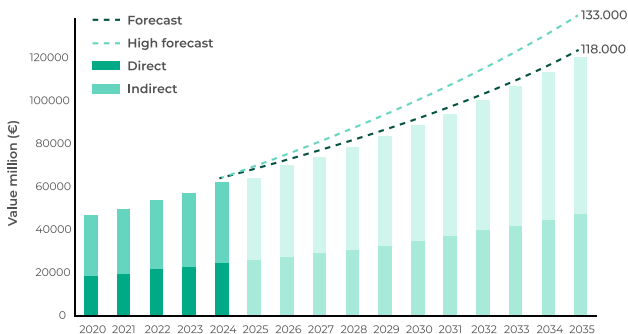
In terms of **job creation** the biosolutions sector supports **278,000 jobs** in the EU, of which:

- 71,000 jobs are directly employed in the sector
- 207,000 are indirect jobs in the value chain
- For every job created in the global biosolutions industry, **an additional 2.9** indirect jobs are created in the value chain

## By 2035:

With the **right policies and investments**, countries can embark on a high-growth trajectory that increases total production value by €17 billion and job creation by 70,000 jobs.

- The economic value: €133 billion
- Job creation: 604,000 direct and indirect jobs



## What about the 2035 opportunity on a country level?

Here's the breakdown:

- Denmark: €12.9 billion in total value and 34,700 jobs
- France: €29.8 billion in total value and 124,000 jobs
- Germany: €22.5 billion in total value and 87,000 jobs
- Italy: €16.8 billion in total value and 60,000 jobs
- Poland: €5.4 billion in total value and 29,000 jobs
- Spain: €11.5 billion in total value and 52,000 jobs
- UK: €16.1 billion in total value and 76,000 jobs

## Seizing the opportunity

For decades, Europe has built competitive industries through early policy, strategic investment, and strong public-private partnerships. Now, we are faced with the unique opportunity to lead the next industrial revolution. But without changes to the EU policy landscape, other regions will reap the benefits of our head start.

This report outlines four critical steps the EU can take to capitalize on the benefits of biosolutions.

- 1. Adopt the EU Biotech Act** with specific provisions to cater for biosolutions and dedicated resources to secure execution.
- 2. Foster public-private partnerships to scale-up infrastructure capacity** for biosolutions production in the EU, which will support SMEs and start-ups.
- 3. Modernize regulatory pathways** for biosolutions in the EU that can cater to the specificities of biosolutions:
  - Streamline regulatory approval processes and create fast-track pathways, especially for biopesticides and novel food products.
  - Use a risk-based approach that is proportionate with the safety profile of biosolutions.
  - Adopt a product-oriented approach to regulating biosolutions.
  - Make a clear distinction between food cultures and chemical additives.
  - Exempt biosolutions from requirements that do not consider their true characteristics and benefits but are designed for conventional chemicals.
- 4. Raise awareness** of the value and potential of biosolutions to achieve job creation, energy self-sufficiency, food security and more.

## A call to action

The EU has already proven what's possible when ambition meets action. It's time to seize the next industrial wave and harness the full potential of biosolutions to build a more prosperous, sustainable, and resilient future for Europe.

**The time for biosolutions? It's now.**



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