

A quick dip into biosolutions and how they can accelerate the green transition

Leading the world's most crucial industrial revolution

The world *must* speed up the green transition. And biosolutions are a key way how. But what *are* biosolutions? Broadly speaking, they are any technological solution based in biology.

At Novozymes, biosolutions are substances called [enzymes](#) and [microbes](#). We use them to improve industrial processes or consumer products. Microscopic enzymes and microbes are life's own, natural tools to create change.

Novozymes is the world leader in biosolutions. Every week, nearly 6 billion people benefit from our biosolutions – when eating, drinking, dressing, cleaning, fueling, farming and more.

Our biosolutions increase production output. Save raw materials, water and energy. Reduce emissions. And enable cleaner, smarter and safer production. All of which are essential to the green transition.

“The latest climate reports have made it clear that there's no time to wait! Biosolutions, such as enzymes and microbes, are part of the answer to feeding and fueling the world more sustainably.

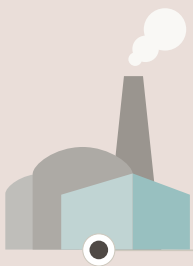
We estimate that by deploying biosolutions that are readily available today, the world can reduce current GHG emissions by around 8%.”

Ester Baiget

Chief Executive Officer, Novozymes

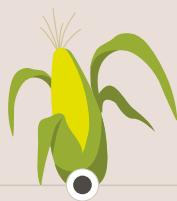
Biosolutions can speed up the transition

Microscopic enzymes and microbes enable meaningful, measurable changes such as these.



Traditional processes/products

If we replaced just 10% of the world's animal protein with alternative proteins enabled by biosolutions, we could avoid 700 million tonnes of CO₂e and save 900,000 km² of agricultural land. That equals 50% of the EU's agricultural area.



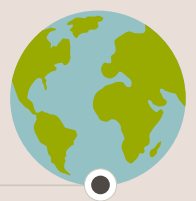
If we replaced just 10% of chemical pesticides with biosolutions, we could prevent 250 million kg of chemicals from entering our ecosystem every year.



If companies switched to biobased formulations, we could take out approximately 5 million tonnes of fossil-based chemicals from laundry detergents globally. Or prevent 10 tonnes of chemicals being poured down the drain every minute.



If just 3% of all liquid transportation fuels were biobased, we could avoid 300 million tonnes of CO₂e every year. That equals taking 125 million cars off the road.



Carbon-neutral society

Our biosolutions are making a difference

Today, over 90% of Novozymes' sales comes from biosolutions that either reduce the use of fossil-based resources, enable agriculture and food sectors to produce more with less, or enable better health around the world.

To name just a few examples, in 2022 Novozymes biosolutions:

- Enabled savings of 65 million tonnes of CO₂e in global transportation alone (that's like taking 27 million cars off the road)
- Shrunk the carbon footprint of doing laundry
- Enabled more sustainable and affordable carbon capture
- Prevented food loss and food waste
- Improved food security in the face of climate change

Biosolutions benefit the economy

The move to biosolutions holds huge opportunities for sustainable growth. What's more, it helps societies everywhere. For example:

- Transitioning to a low-carbon, sustainable economy could bring \$26 trillion in economic gains by 2030¹
- The current addressable market for biosolutions is worth an estimated €15 billion.² Experts expect it to triple by 2040³
- Every new biotech job creates four more jobs in supporting sectors⁴

¹ United Nations, 2021

² The Bio Revolution: Innovations transforming economies, societies, and our lives | McKinsey, 2020

³ World Economic Forum, 2022

⁴ Study conducted by WiFor on behalf of EuropaBio, Dec. 2020

⁵ International Labour Organization "World Employment and Social Outlook Report," 2018

- Making energy production and use greener could create 24 million new jobs globally by 2030. It would also safeguard the existing 1.2 billion jobs that rely on a healthy, stable environment⁵

Biosolutions require global attention

We believe in leading together. That's why we work to engage business and promote collaboration on climate action on many global stages.

Organizations where our voice helps drive the green transition include: The B Team, the International Chamber of Commerce, the Science Based Targets initiative, the United Nations Global Compact and the World Economic Forum.

We've walked the talk for decades

Novozymes has a long history of making bold sustainability commitments – and keeping them. In the 1970s, we were among the first companies to pioneer a circular approach to production called the industrial symbiosis. In 2002, we became the first company with a fully integrated triple bottom line report. In 2022, we became one of the first companies to have a [net-zero by 2050 target](#) validated by SBTi.

From 2018-2022, we reduced our emissions in operations (scopes 1+2) by 63% while growing our production volumes. Combining with Chr. Hansen will make us an even stronger sustainability leader. Because the world needs us.

Learn more

Explore our technology in action

Get details on our climate journey