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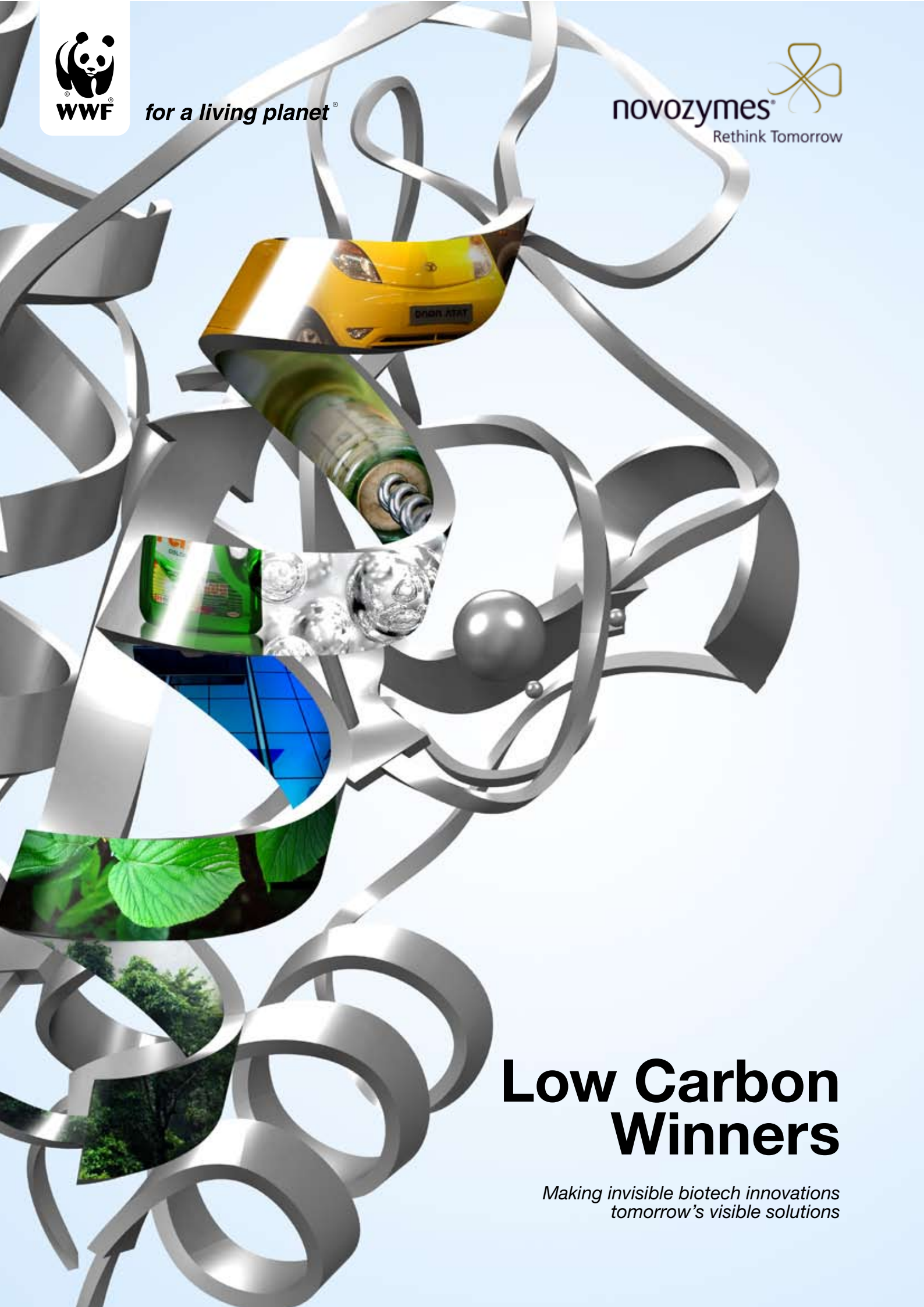
Rethink Tomorrow



Low Carbon Winners

Making invisible biotech innovations tomorrow's visible solutions

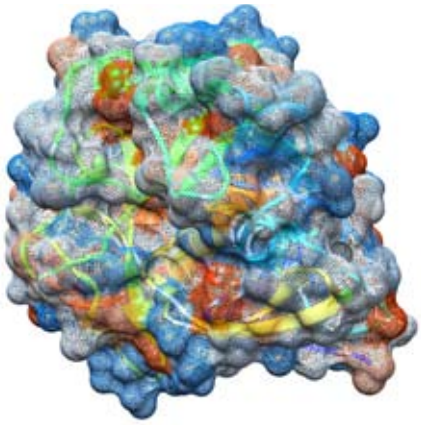
What is biotechnology?

Biotechnology uses biological systems or living organisms in processes and products. Enzymes are biological molecules that help industrial processes run more efficiently. Small amounts of enzymes often save large amounts of energy, water and chemicals. Today, enzymes are produced industrially and used in a broad range of industries around the world.

FROM IMPROVEMENTS TO SOLUTIONS

The need for climate action in the midst of an economic crisis can be seen as a problem, but also as an opportunity. So far, most of the focus has been on sectors with large emissions and on incremental improvements that entail extra costs. In order to make real progress, it is imperative to also include sectors that provide solutions. Especially important are the companies that provide low carbon solutions that create transformative reductions with low-carbon feedback (reductions resulting in further and deeper reductions). This would start us off on the road to a low carbon economy without adding any unnecessary costs.

Sustainable biotechnologies that use nature as inspiration (often referred to as biomimicry), such as enzymes, already contribute to reducing emissions. In fact, initial calculations indicate that low carbon enzyme solutions already help to reduce approximately 50 million tonnes of greenhouse gasses (GHG) per year (around the same as the emissions of Sweden). But the potential is many times greater. Today, neither these contributions nor their potential are well known, and therefore only a small part of the potential is realized. As the climate discussion move from a problem-based approach (focusing on polluting companies) to a solution-based approach (focusing on companies with solutions) it is time to put the spotlight on low carbon enzyme solutions to fully exploit the transformative reduction potential of this technology.



A detergent protease called Savinase

Invisible today, visible tomorrow

Low carbon biotechnology solutions are a good example of hidden solutions that are easy to overlook for policymakers, investors and companies. They exist in the middle of long value chains and the final product or service is often the same as the old one. Things around us, like clothes or paper, produced with low carbon biotechnology often look the same as the products produced with large amounts of energy, chemicals and water.

MAKING THE INVISIBLE VISIBLE

With COP 15 taking place in Copenhagen, 2009 will be a defining year for the climate and the world will be looking for strong climate leadership. This is a unique opportunity to establish biotechnology solutions, based on biomimicry, as an important part of both climate and industrial policies. For this to happen, we need to make the invisible solutions, like enzymes, a visible and integrated part of all major projects and initiatives. To achieve this Novozymes and WWF have come together in the Biosolutions Initiative that will:

Map the potential

Review existing and nearly market-ready biotech solutions in different sectors and estimate their greenhouse gas reduction potential, to identify the first strategic billion tonnes of GHG reductions.

Integrate biotech in climate strategies

Engage in dialogue with central policy makers in key markets to ensure that the positive potential of low carbon biotech solutions becomes an integrated part of all major climate strategies.

Create low carbon partnerships

Support the sustainable and innovative use of low carbon biotechnologies among strategic companies by creating low carbon partnerships.

THE POSSIBILITIES OF A LOW CARBON ECONOMY

A low carbon economy requires that growth and development for the world's population occurs within the limits of the planet's capacity to absorb greenhouse gasses. It also requires an economic model that will provide people everywhere with resources and solutions for a high quality of life. To get there, developed countries need to cut their own emissions by 80-95 % by 2050 and support developing countries to invest in low carbon solutions. This will trigger new innovative solutions and ensure that economic growth amongst the poorest people on the planet becomes an opportunity for the global economy. In other words: we need to rethink our concept of development.

This is a huge challenge but a challenge with a great many possibilities for businesses, industries and governments who want to shape the low carbon economy of tomorrow. In this perspective, low carbon biotech solutions, based on biomimicry, can make an important contribution to a low carbon economy by:

Delivering sustainable climate solutions and reducing poverty

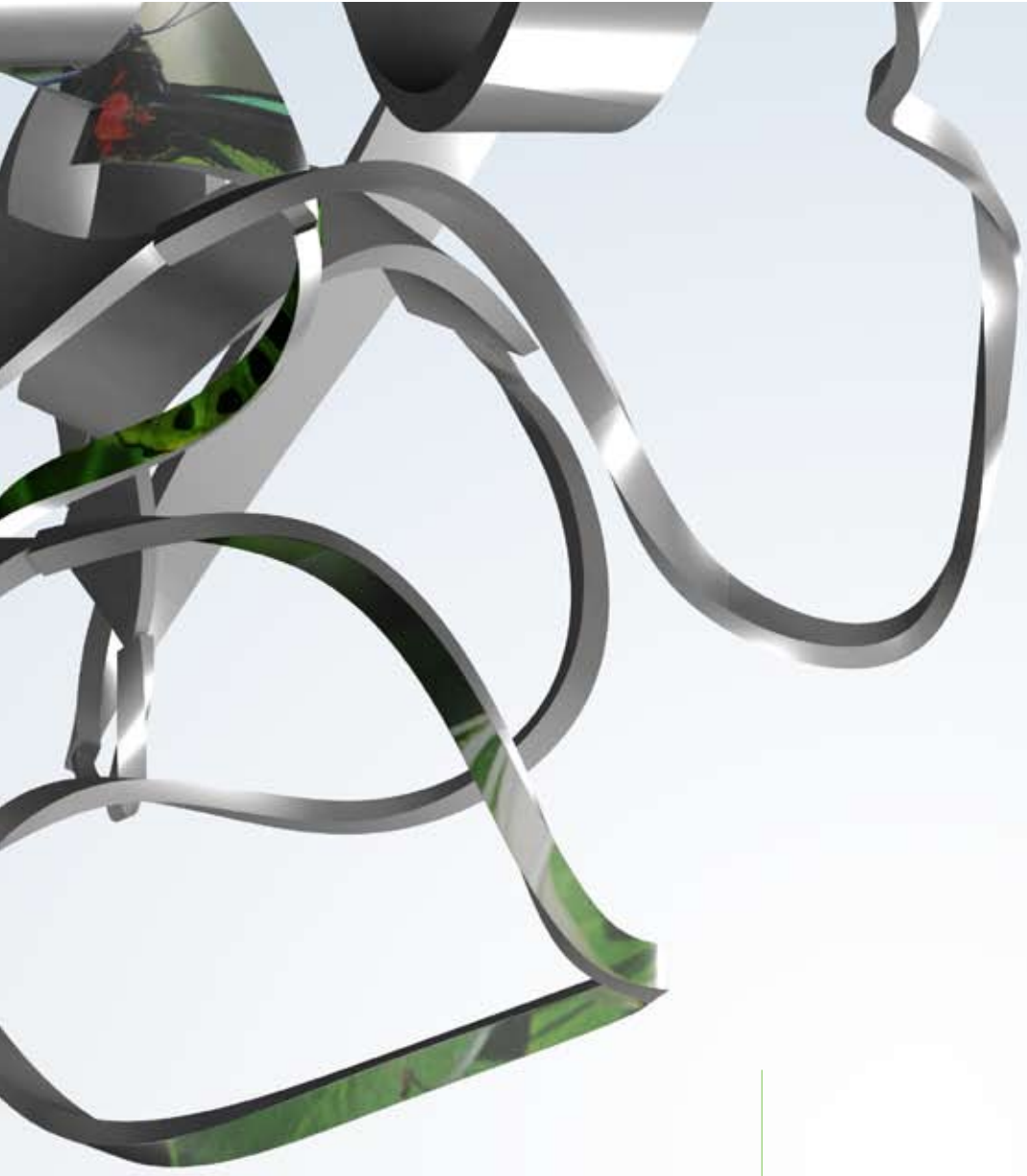
With billions of people fighting poverty and with a world population that will reach nine billion in a few decades, it is crucial that measures to help reduce greenhouse gas emissions are extremely resource efficient. Because low carbon biotechnologies provide transformative reductions without adding any unnecessary costs, they can play a key role in bringing people in developing countries out of poverty and ensuring that people in developed countries not only reduce their emissions but also their ecological footprints.

Moving towards system innovation

To reach a low carbon economy, we must move away from dealing with one problem after the other, when they have already occurred. This kind of reactive 'end-of-pipe' approach is no longer viable. In contrast, low carbon biotechnology solutions, based on biomimicry, are proactive and can offer transformative results. Not only can they deliver smart energy, smart transportation and low carbon food, they can also help us shift to a circular economy where solutions are based on a cradle-to-cradle approach, for example using residues from agriculture to produce energy and fuel thus enabling societies to move beyond the concept of waste.

Securing accelerated uptake of low carbon solutions

Current approaches to tackle climate change tend to focus on single products and how they can be improved. But this fails to address the invisible problems and negative impacts, which occur due to the supporting infrastructure. This means that investments to reduce GHG emissions only result in marginal improvements or even increased emissions. In contrast, low carbon biotechnology solutions can both contribute to direct emissions reduction and also pave the way for further reductions by supporting a long-term sustainable infrastructure, thereby stimulating 'low-carbon feedback'. This will make it easier for further investments to accelerate reductions in greenhouse gases.



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WWF is the world's largest and most experienced independent conservation organisation, with almost 5 million supporters and a global network active in more than 90 countries.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:
- conserving the world's biological diversity.
- ensuring that the use of renewable natural resources is sustainable.
- promoting the reduction of pollution and wasteful consumption.