



ADVANCES IN THE BIOLOGICAL CONVERSION PATHWAY

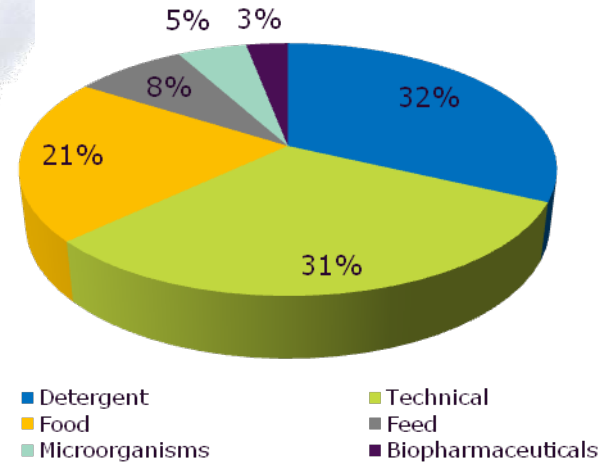
THE ENZYMES ARE READY

ANDERS LAU TUXEN
ENERGY STRATEGIST, NOVOZYMES A/S
European Biofuels Technology Platform
3rd Stakeholder Plenary Meeting
Brussels, April 14th 2010

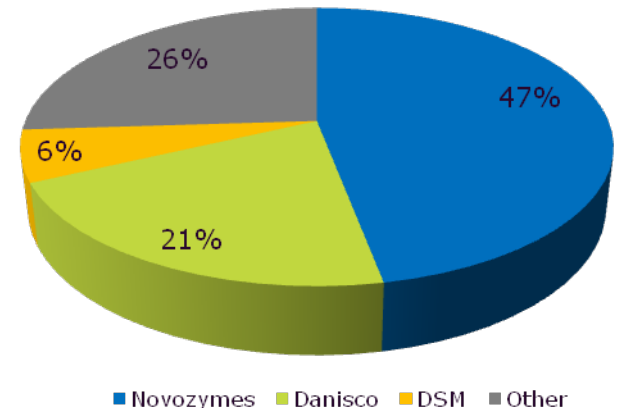
NOVOZYMES IN BRIEF



2009 Novozymes sales by industry



2009 market share of enzymes (industrial use)



GLOBAL PRESENCE

- Global leader in Industrial Enzymes & Microorganisms
- More than 700 products used in 130 countries within >30 different industries
- 5,200 employees worldwide

R&D

- Market leader in all main industries
- 47% global market share within industrial enzymes
- ~14% of sales invested in R&D
- >6,000 patents in place

PERFORMANCE

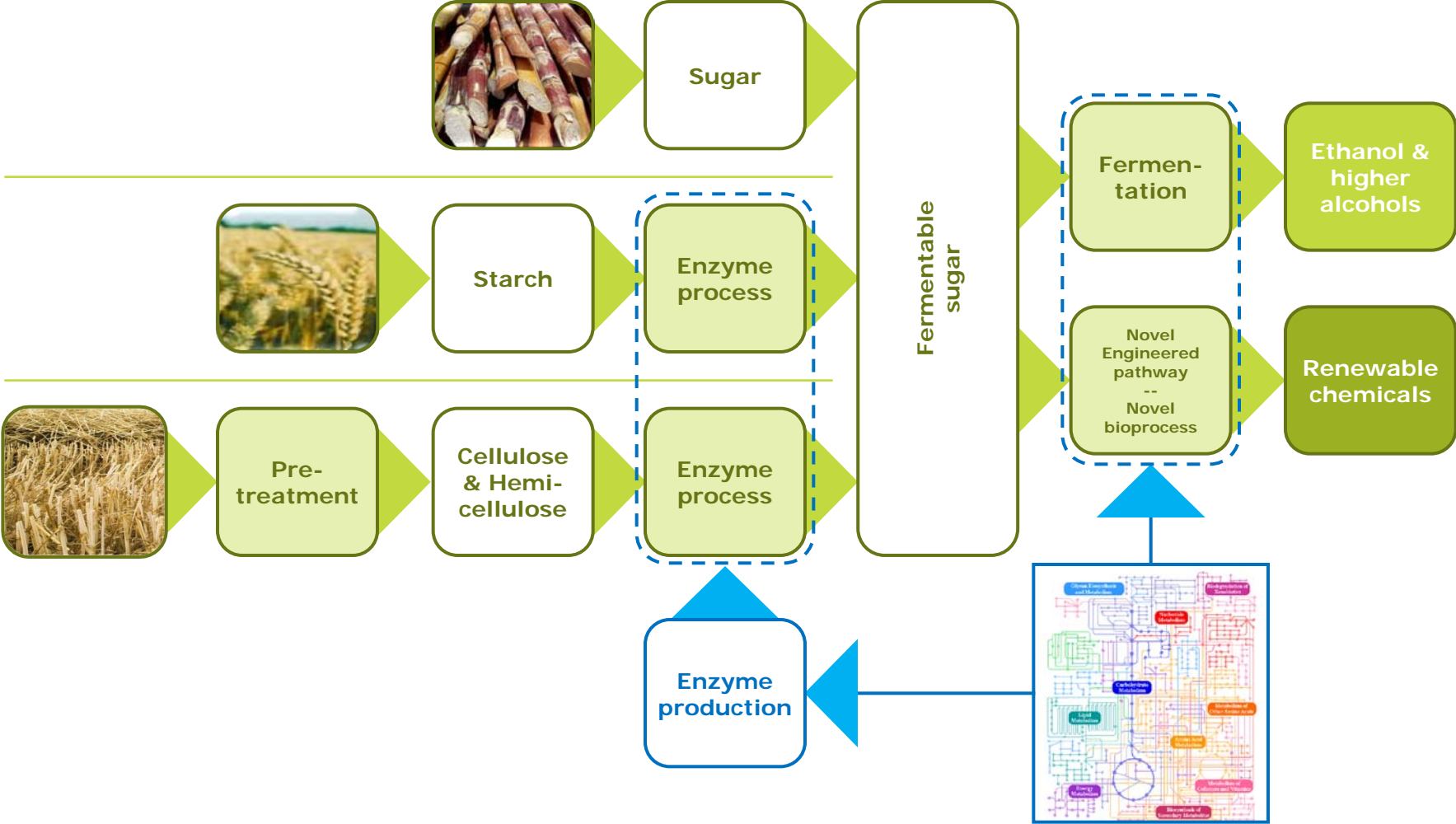
- 2009 global sales USD 1.6B (FY 2009)
- Operating profit margin 20% (FY2009)
- ROIC 20.3% (FY2009)

NOVOZYMES IS A LEADING ENZYME DEVELOPER AND SUPPLIER TO THE GLOBAL FUEL ETHANOL INDUSTRY

- Leading provider of enzymes for ethanol in all regions where we operate
- Broad insight into cellulosic ethanol – we are working on many feedstocks and technologies
- Global R&D focus on cellulosic ethanol
- Unprecedented effort with more than 150 people dedicated to Novozymes' cellulosic ethanol work



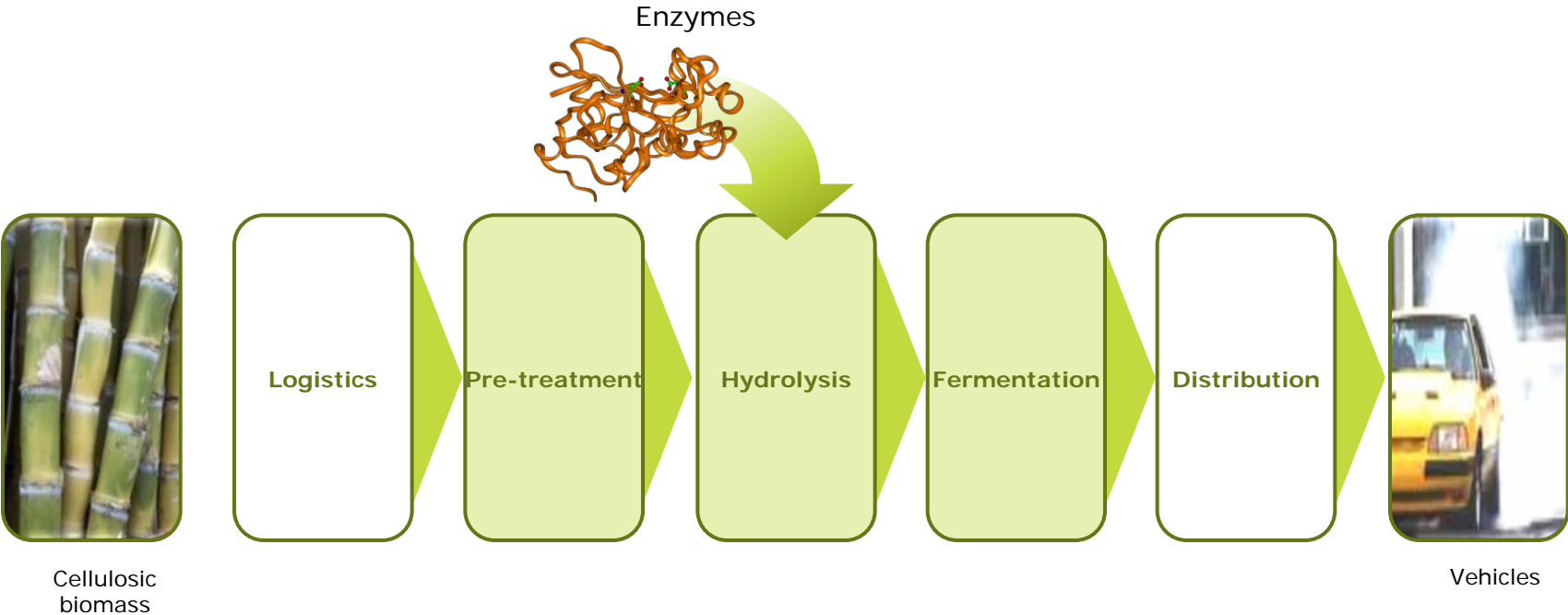
ENZYMES ENABLE PRODUCTION OF ETHANOL AND OTHER PRODUCTS FROM STARCH AND CELLULOSE



Synthetic biology:
Metabolic engineering enabling better yields and new products

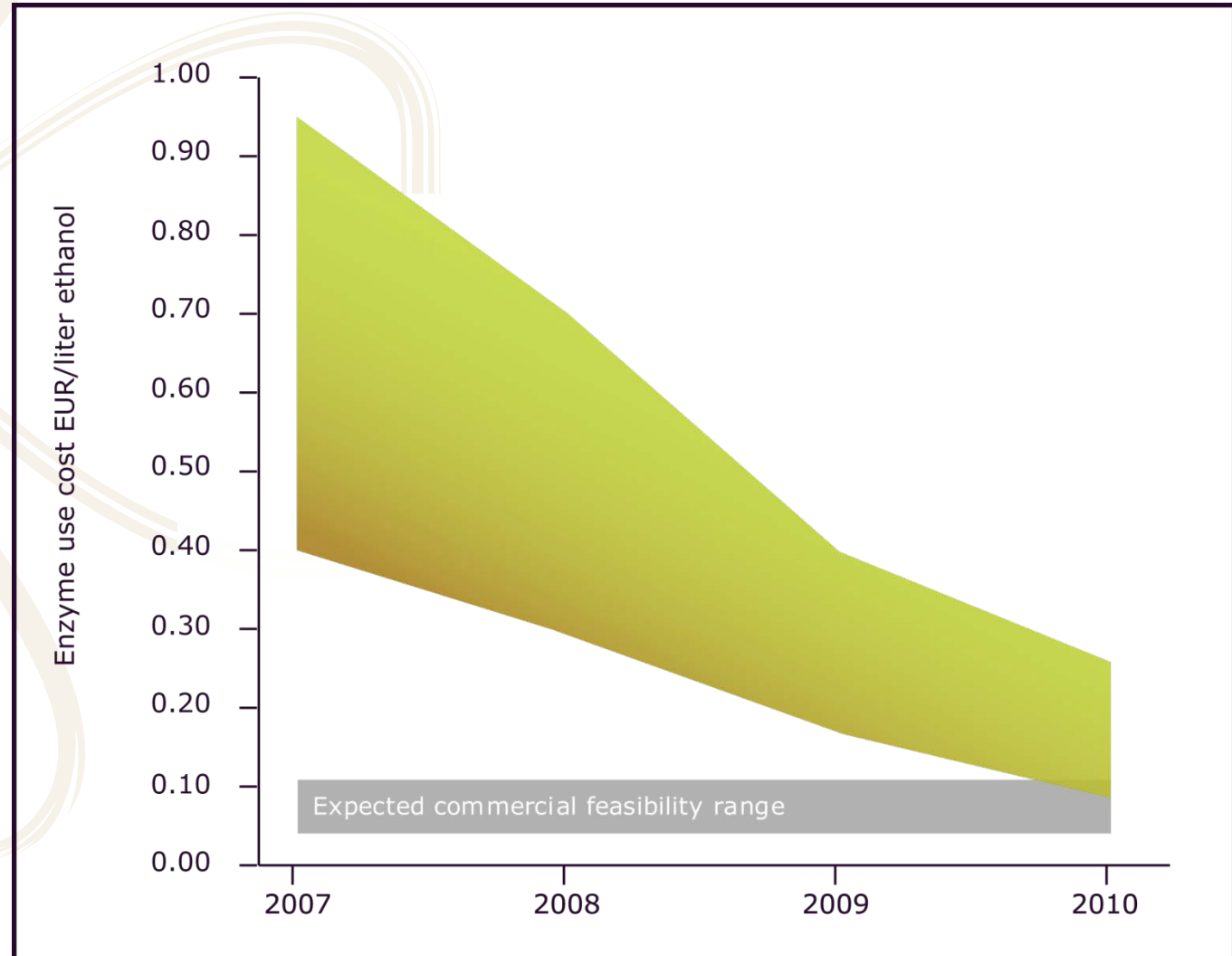
NOVOZYMES PROVIDES THE ENZYMES THAT PLAY A CRUCIAL ROLE IN CELLULOSIC ETHANOL PRODUCTION

Technology overview

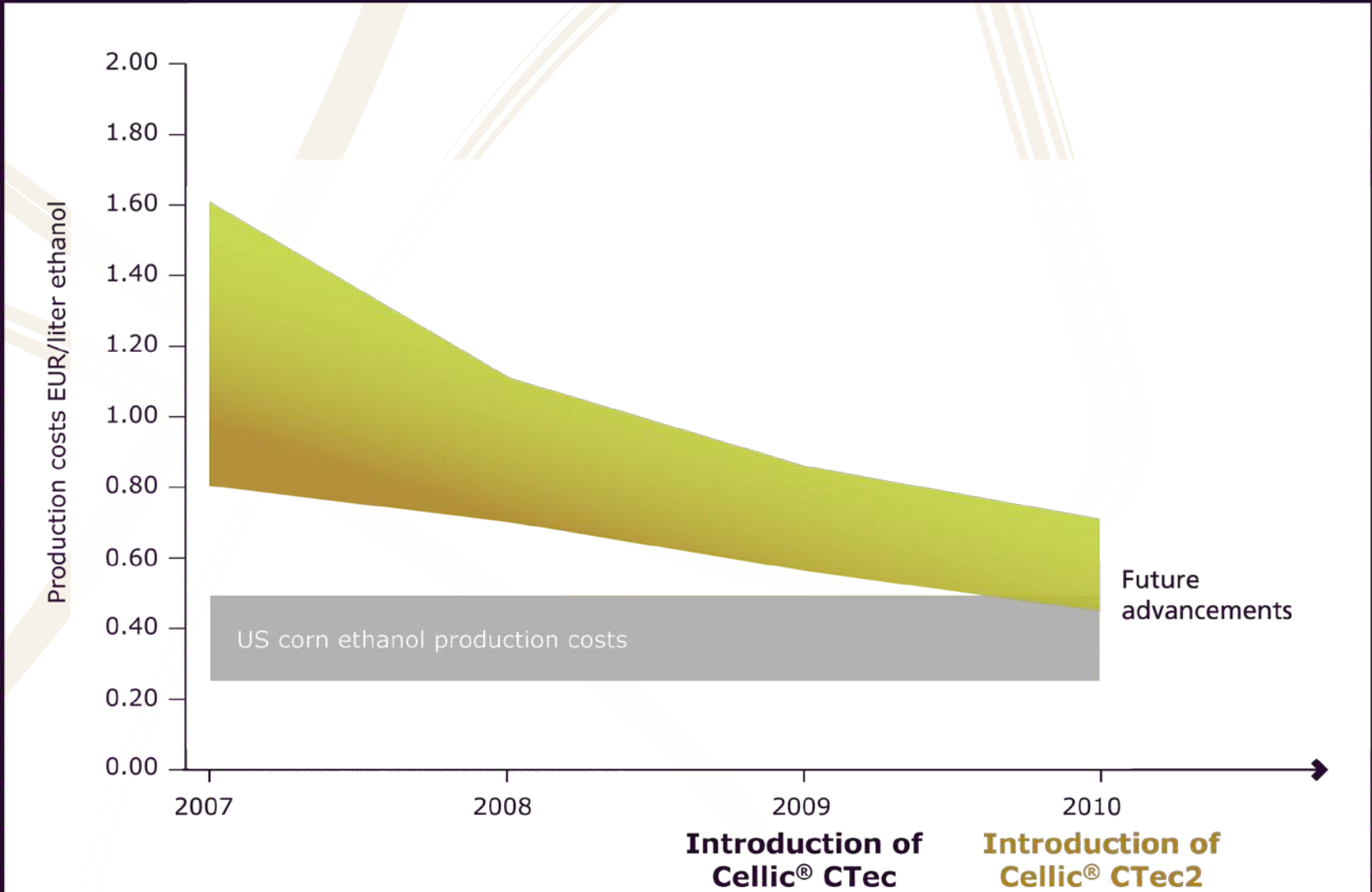


ACHIEVING A COMMERCIALLY VIABLE ENZYMES...

We have delivered on our 2010 promise by further reducing the enzyme dose by up to 50% resulting in an enzyme use cost of as low as EUR 0,10/liter



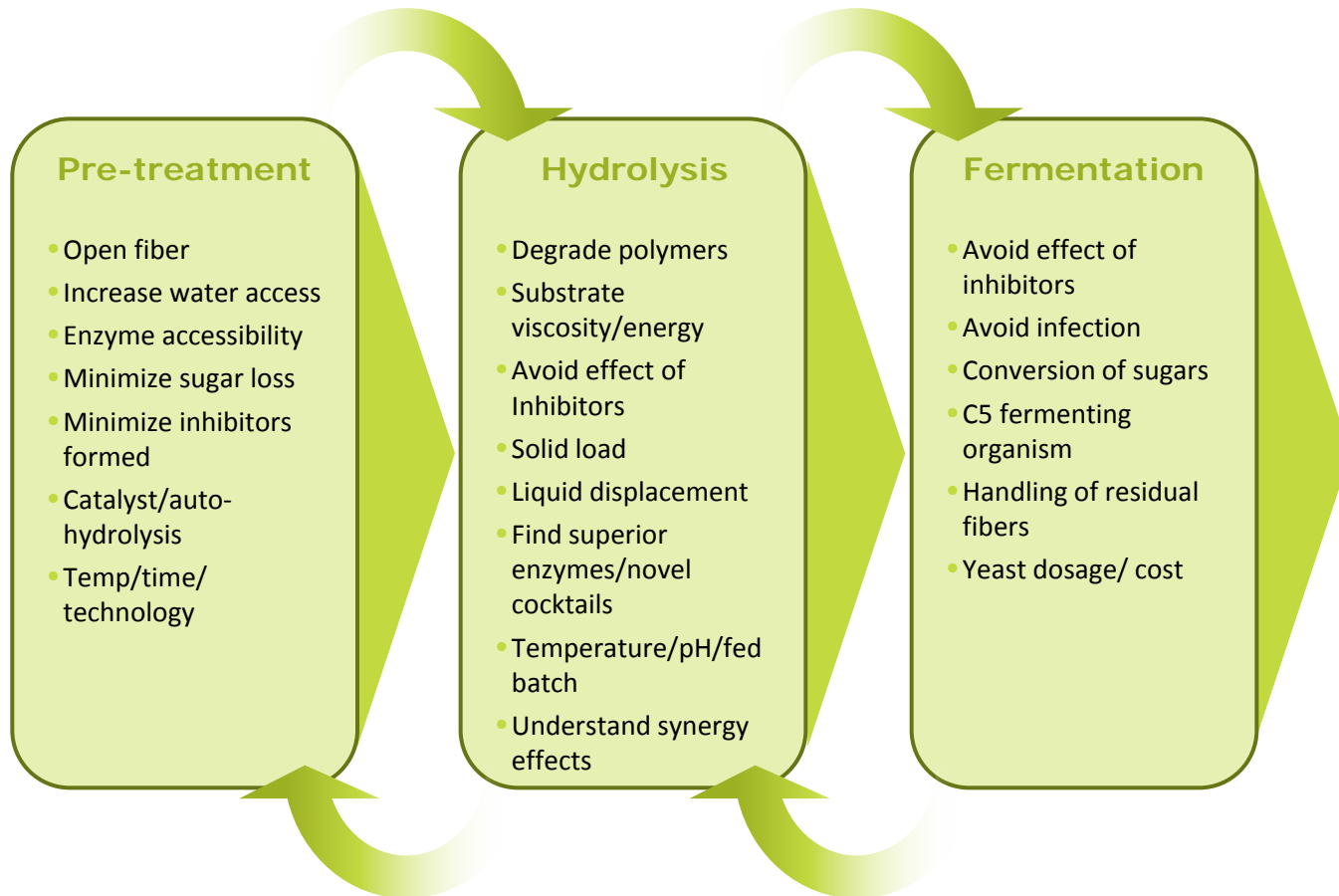
...IS KEY TO DELIVERING COMMERCIALLY RELEVANT CELLULOSIC ETHANOL



BUT MOST IMPORTANT IS AN INTEGRATED VIEW ON ENZYMES, PROCESS STEPS AND PROCESS INTEGRATION

Highly interrelated technology and process choices

Novozymes leverages advanced R&D tools and enzyme application know-how



Applied discovery

Reduce process costs via holistic innovation

THIS IS ALSO WHY PARTNERSHIPS AND SCALE-UP ACTIVITIES ARE CRUCIAL

Examples of Novozymes' cellulosic ethanol partners



SCALE-UP IS TAKING PLACE ACROSS THE WORLD

Cellulosic ethanol plants – status as of February 2010





Read more about how Novozymes is developing fuel ethanol technologies together with our partners at:

www.bioenergy.novozymes.com