A ZYMER’S VIEW OF ENERGY
- A BRIGHTER FUTURE

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President, Novozymes – North America
EESI

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Nature inspires innovation at Novozymes

We find the microorganisms with unique enzymes

We produce them in big fermenters. From one microorganism to trillions in only 24 hours
Bioinnovation effects on the GHG...

45 Million tons CO2 emission reductions in 2011 ~ 17 million cars

<table>
<thead>
<tr>
<th>Industry</th>
<th>CO₂ Reduction kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereal</td>
<td>3,800</td>
</tr>
<tr>
<td>Animal Feed</td>
<td>30</td>
</tr>
<tr>
<td>Textiles</td>
<td>100</td>
</tr>
<tr>
<td>Bioethanol</td>
<td>150</td>
</tr>
<tr>
<td>Detergent</td>
<td>150</td>
</tr>
<tr>
<td>Food</td>
<td>200</td>
</tr>
<tr>
<td>Leather</td>
<td>40</td>
</tr>
<tr>
<td>Oil &amp; Fats</td>
<td>1,300</td>
</tr>
<tr>
<td>Biocatalysis</td>
<td>3,400</td>
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<tr>
<td>Detergent</td>
<td>150</td>
</tr>
<tr>
<td>Paper</td>
<td>Up to 600</td>
</tr>
<tr>
<td>Cereal</td>
<td>3,800</td>
</tr>
</tbody>
</table>

CO₂ COSTS PRODUCING 1KG ENZYME: 1-10 KG

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Today’s facts

2011 Performance

- 2011 global sales DKK 10.51B (FY 2011)
- Operating profit margin 56,2% (FY2011)
- ROIC 21,3% (FY2011)
- ~14% of sales invested in R&D
- More than 6,500 patents in place
- 47% global market share within industrial enzymes
- Global leader in Industrial enzymes & microorganisms
- Market leader in all main industries

Sales by geographical area (2011)

Distribution of sales in % (2011)
PRODUCERS WILL INVEST THE EXTRA HORSE POWER TO SAVE ON OTHER COST ITEMS THAN ENZYME COST
BNEF STUDY BASED ON
THE AGRICULTURAL POWERHOUSES

United States
Mexico
Brazil
Argentina
Australia
China
India
EU-27

G20 countries not included: Canada, Indonesia, Japan, Russia, Saudi Arabia, South Africa, Republic of Korea, Turkey
A maximum of 17.5% is assumed to be available for advanced biofuel production.

Collecting only 25% of agricultural residue is a conservative methodology that takes into account technical and ecological constraints.

This purposefully aims to preserve soil quality and is in the low-to-medium range of comparable studies.

Source: Bloomberg New Energy Finance, "Moving towards a next-generation ethanol economy" 2012
WHAT’S IN IT FOR THE US?

**Energy security**

The US can replace 16% of its annual gasoline consumption by 2030 with advanced biofuels.

**Jobs**

Create almost 1.37 million jobs between 2010 and 2030 mainly in rural areas.

**Economy**

American players would be the major beneficiaries, including 96 billion USD domestic engineering, construction and feedstock market.

**Environment**

Save CO2 and reducing GHG emission from gasoline related road transport by 11%.

*Source: Bloomberg New Energy Finance, “Moving towards a next-generation ethanol economy” 2012*
BUT POLICY SUPPORT IS NEEDED TO KEEP US MOVING TOWARD COMMERCIALIZATION

To attract investments and commercialize cellulosic ethanol, policymakers must support the industry with:

- **Bankable future demand for advanced biofuels**
  - RFS
  - Market Access
  - Blender Pump Support
  - E15

- **Support for scale-up of sustainable biomass supply**
  - Biomass Supply Innovation and Incentives

- **Support for demo and first commercial-scale plants**
  - Investment Tax Credits
  - Loan Guarantees
We are investing in this potential

SAVE THE DATE

The future of America’s workforce and economy is about to open in Blair.

Mark your calendars to help inaugurate our new enzyme plant, designed to make leading technology for the growing biofuels industry. Our program will include remarks by Senator Ben Nelson and other Nebraska leaders, a ribbon cutting, refreshments and more.

You helped make it possible. Be there as possibility becomes reality.

Date:
Wednesday, May 30, 2012

Place:
Novozymes
600 S 1st St.
Blair, NE 68008

Time:
TBD
THANK YOU

Visit us and Learn More:

www.bioenergy.novozymes.com/sweet-spot