

### NREL Industry Growth Forum, 2007

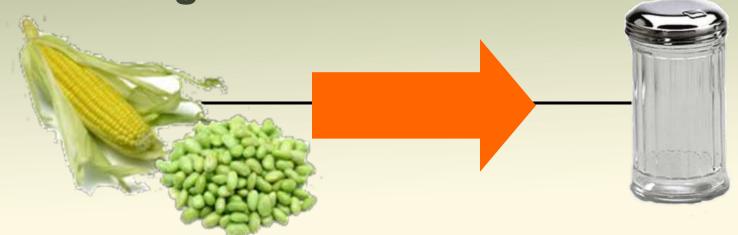


C5.6 Technologies, Inc.

John Biondi, President

## C5.6 Technologies

C5-6 develops and markets enzymes that convert agricultural feedstocks to 5 and 6 carbon sugars



C5-6 Enzymes could be the front end of multiple biorefining processes



### C5.6's Competitive Advantage

# C5-6 has solved one of the fundamental problems in enzyme discovery.

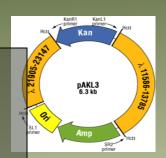
- The entire \$25B enzyme market is based on material generated from less than 1% of the world's microbes
- The remaining 99% cannot be grown in the lab

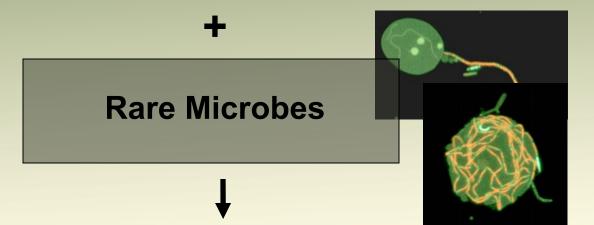


### C5.6's Technology Application

#### **Platform Technology**

- Unique Cloning Tools
- Single Cell Genomics





**Enzymes with Targeted Properties** 



### **Benefits for Biofuels**

# C5-6 has the ability to find and produce new enzymes with targeted attributes

- Developing enzymes to fit the process rather than a process to fit the enzyme
- C5-6 Solution: Find natural environments that match the process environment
  - -Dry mill = high temperature, harsh pH
- Lowest per enzyme cost of discovery



## C5.6 Target Market

#### **Target customer = Dry Mill Producers**

#### C5-6 Opportunity, Dry Mill, U.S. only

	2007	2015
Production volume	7 B gallons	15 B gallons
Enzyme value/gallon	\$0.035	\$0.07
Total Market	\$250 million	\$1 billion

#### Total 2015 C5-6 U.S. Market Potential:

Enzymes = \$1 billion Services = \$500 million Ethanol = \$30 billion

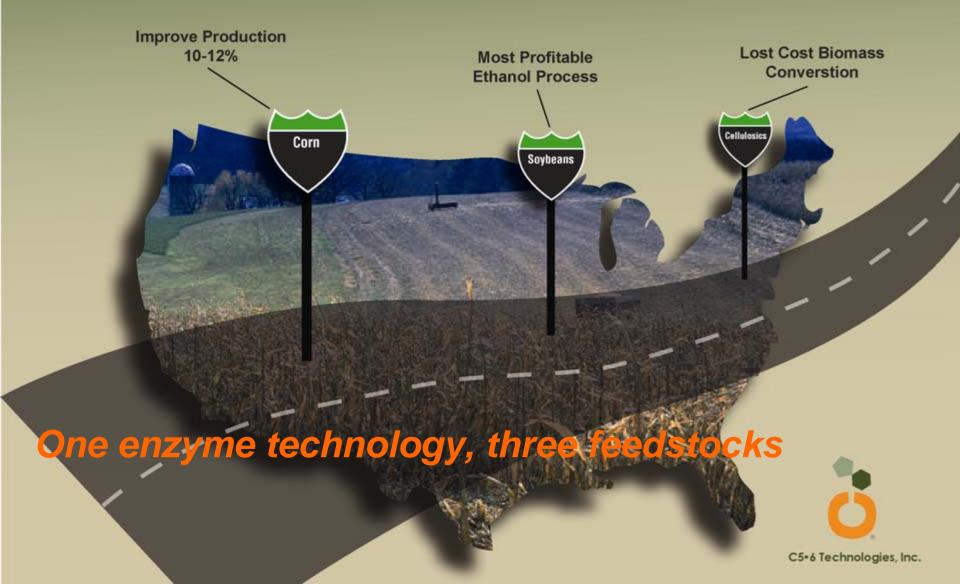


### C5·6 Technologies Management Team

- David Mead, Ph.D. Founder & CEO 20 yrs biotech R&D & management; 4 patents
- John Biondi, MBA President 30 yrs business leadership experience; 5 start-ups
- Phil Brumm, Ph.D. Chief Scientific Officer 20 yrs management in industrial enzymes; 7 patents
- Rick Remeschatis, MBA, CFA, CPA, CFO 30 yrs private & public companies



### C5.6 Technology Roadmap



	Corn	Soy	Cellulosics
Problem Solved	15% wasted due to enzyme limitations		
Value Proposition	\$10M annual savings for typical plant (no capex required)		
Revenue Sources	Enzyme sales		
Intro Date	Q3, 2008		



	Corn	"A process delivering an	lulosics
Problem Solved	15% wasted due to enzyme limitations	extra 10% margin in the corn ethanol market	
Value Proposition	\$10M annual savings for typical plant (no capex required)	without capital investment is huge— and exactly what the industry needs right	
Revenue Sources	Enzyme sales	now." Bob Sather, Chairman ACE Ethanol, RFA Board member	
Intro Date	Q3, 2008		



## C5•6 Soy Process Technology



	Corn	Soy	Cellulosics
Problem Solved	15% wasted due to enzyme limitations	Conversion of soy meal carbohydrate	
Value Proposition	\$10M annual savings for typical plant (no capex required)	Two high value co-products • Ethanol • Concentrated protein	
Revenue Sources	Enzyme sales	Licensing Enzyme sales Services sales Plant production revenues	
Intro Date	Q3, 2008	2010	



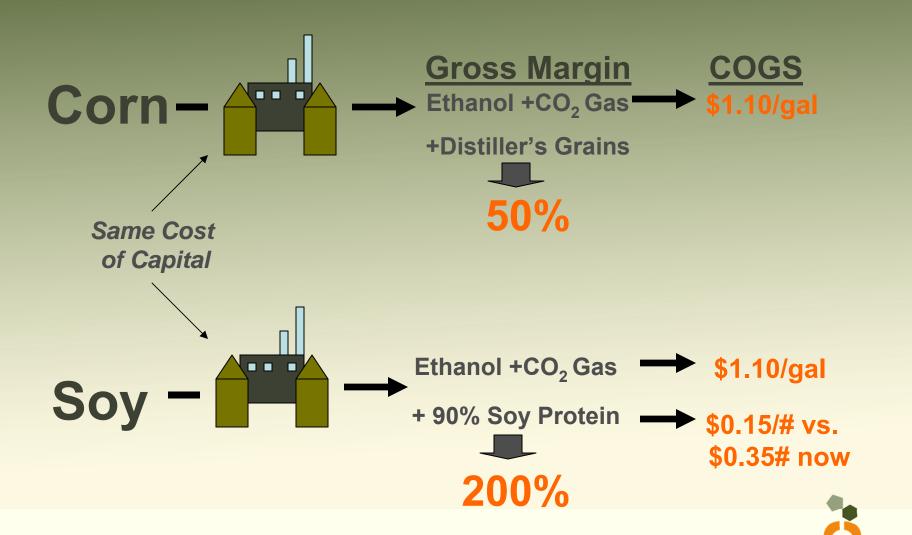
### **National Level Validation**

## C5-6 Science validated at the highest national levels

- DOE/USDA grant--\$1.3 million
  - Only known significant U.S. grant for work in soy
  - Patent field open as well



### C5•6's Soy Process-Market's Most Profitable

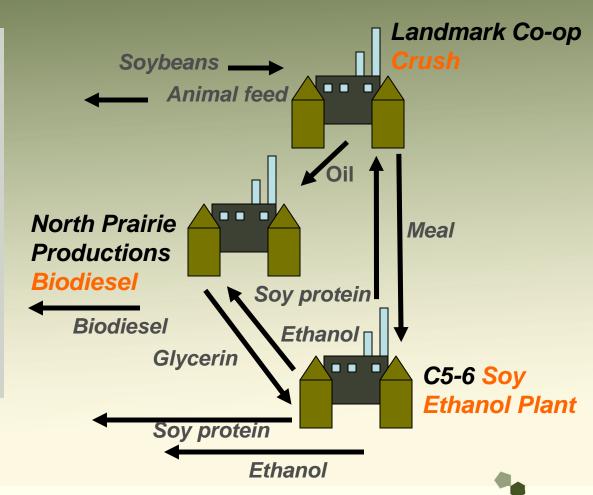


C5.6 Technologies

## Pilot Plant Project in Planning

"C5-6's soy process will allow us to take in soybeans to our Evansville facility, have them converted to two fuels and share coproducts across fuel, food and feed for the first time in the world."

John Blaska, Chairman Landmark Co-ops



	Corn	Soy	Cellulosics
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### National Level Validation

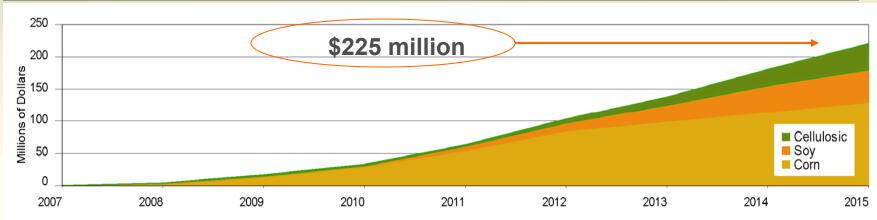
# C5-6 Science validated at the highest national levels

- One of three DOE Bioenergy Research Center Grant
  - Grant = \$125 million over 5 years
  - Only award recipient that is not a DOE lab
  - C5-6 portion = \$400k/year for 5 years
  - Access to large troves of new genetic material



# C5•6 Results of Operations: Three Business Units, Multiple Revenue Streams

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