Biomass Research and Development **Technical Advisory Committee** Bill Schafer, SVP Range Fuels, Inc.



Range Fuels' Soperton Project Update

February 25,26 2009 San Antonio, TX



Range Fuels Overview



- Formed in July 2006 by Khosla Ventures to commercialize cellulosic ethanol
- Design, build, own and operate business model
- Access to \$82MM in federal and state funds
- Broke ground in Soperton, GA last November for first U.S. commercial cellulosic ethanol plant utilizing woody biomass
- On April 1 announced the completion of an oversubscribed Series B round of private financing greater than \$100 million
- On November 6 announced new CEO
- USDA 9003 loan guarantee for \$80MM announced January 2008





Partnerships













Morgan Stanley



















Making Advanced Biofuels a Reality Five Key Ingredients:



- 1. A Proven Conversion Process
- An Abundant, Sustainable and Cost Effective Supply of Feedstock
- 3. Accessible Biofuels Markets
- 4. Legislative and Regulatory Support & Clarity
- 5. A Sustainable System





A Proven Conversion Process

Flexibility









K2A Optimization Plant, Denver Colorado









The Right Location







First Commercial Cellulosic Ethanol Plant



Soperton, GA

- Groundbreaking November 2007
- Facility is permitted for 100 million gal./yr. of combined alcohols
- First phase is scheduled for mechanical completion by the end of 2009
 - Funding in place
 - Design is fixed
 - Equipment is being fabricated
- First phase will produce < 10 million gal./yr</p>





Groundbreaking



Soperton, GA





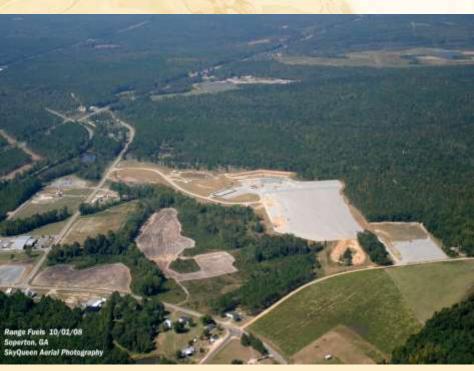




Current Status



Soperton, GA









- 1. A Proven Conversion Process
- An Abundant, Sustainable and Cost Effective Supply of Feedstock
- 3. Accessible Biofuels Markets
- 4. Legislative and Regulatory Support & Clarity
- 5. Sustainability





Feedstock The Supply Chain Will Evolve...



- Today Existing forestry resources
 - Pulpwood
 - Fuel chips
 - Mill residuals
 - Phase II Getting more out of what's there:
 - In forest residue and un-merchantable timber
 - Pre-commercial thinnings
 - Phase III New sources of renewable biomass:
 - Purpose grown trees and energy crops
 - In-woods moisture management







- 1. A Proven Conversion Process
- 2. An Abundant, Sustainable and Cost Effective Supply of Feedstock

3. Accessible Biofuels Markets

- 4. Legislative and Regulatory Support & Clarity
- 5. Sustainability





Accessible Biofuels Markets What is Needed?



- Higher blends
 - Testing indicates +20% is achievable in existing vehicles

- Wider distribution
 - Only 1,800 E85 stations in the United States
 - More Flex Fuel vehicles in high mileage cars







- 1. A Proven Conversion Process
- 2. An Abundant, Sustainable and Cost Effective Supply of Feedstock
- 3. Accessible Biofuels Markets
- 4. Legislative and Regulatory Support & Clarity
- 5. Sustainability





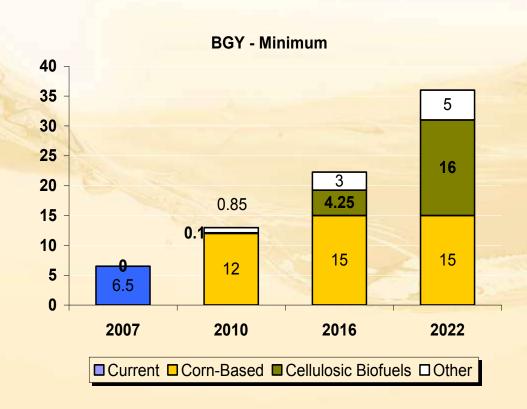




2007 Energy Independence and Security Act

The RFS is critical to create and support a market

The definition of Renewable Biomass needs to be inclusive, not exclusive







Legislative and Regulatory Support



FOOD, CONSERVATION, AND ENERGY ACT 0F 2008

- \$1.01 per gallon cellulosic Biofuels tax credit
 - \$0.56 for cellulosic ethanol
 - \$1.01 for methanol
- Title IX Energy Programs (key provisions for advanced biofuels producers)
 - Biorefinery Assistance
 - Loan guarantees up to \$250 million
 - Grants up to 50% of project costs
 - Biomass Crop Assistance Program
 - Provides financial assistance to growers transitioning to renewable biomass for use by biomass conversion facilities
 - Bioenergy Program for Advanced Biofuels
 - Payments to advanced biofuels producers



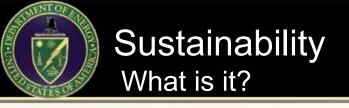




- 1. A Proven Conversion Process
- 2. An Abundant, Sustainable and Cost Effective Supply of Feedstock
- 3. Accessible Biofuels Markets
- 4. Legislative and Regulatory Support & Clarity

5. Sustainability







Sustainable development marries two important themes: that environmental protection does not preclude economic development and that economic development must be ecologically viable now and in the long run.

"Meeting the needs of the present without compromising the ability of future generations to meet their own needs." 1



Improving the Energy
Balance
Reducing the impacts of GHG

Reducing the use of water

¹ The World Commission on Environment and Development – The Brundtland Report - 1987

