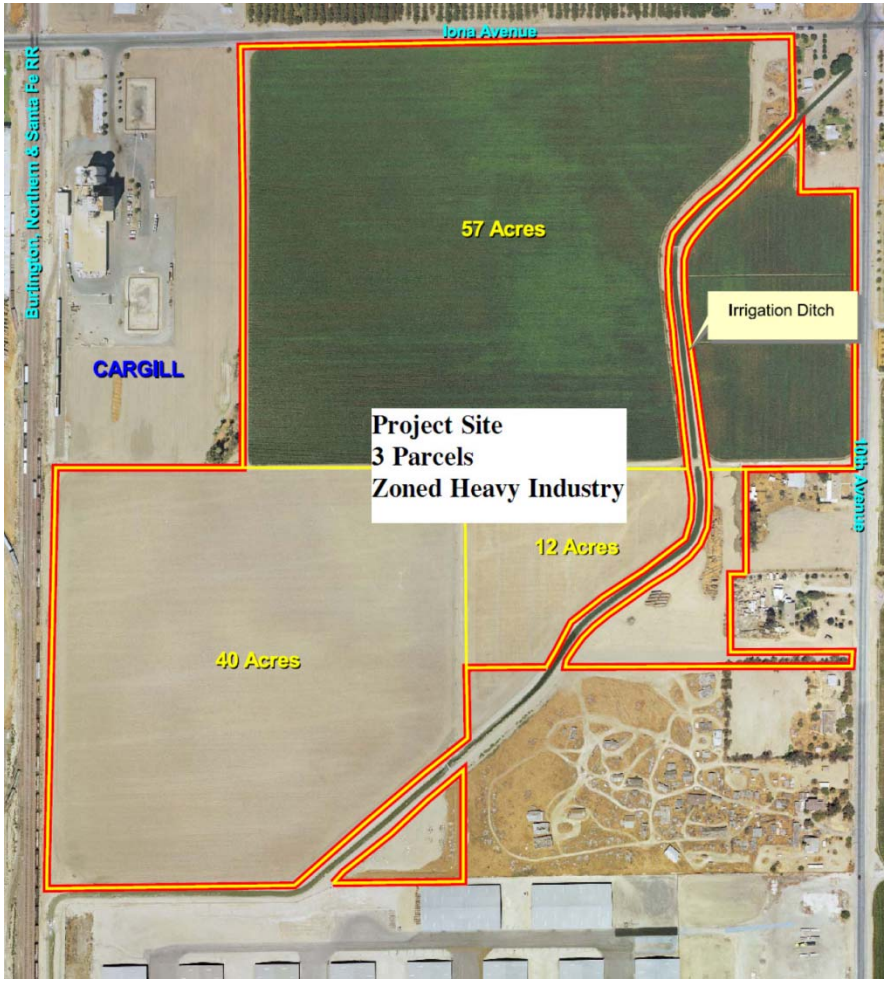
California Energy Commission
AB118 Investment Planning
September 2009

Company Summary

- Founded in January 2006
- Majority-Owned by Californians
- Starch to Ethanol – Destination Plant Model (Corn and Grain Sorghum)
- Project site in Hanford, Kings Industrial Park (Enterprise Zone through 2023)
- Permitting Completed in March 2009
- Settlement with AG and AIR encourages GVE to switch to advanced biofuel feedstocks

Now It's Permitted – What's Next?



- Corn as sole feedstock is out.
- Cellulosic is as yet "unproven on a commercial scale."
- Ethanol Industry on the rocks
- Economy in turmoil
- Project finance is limited

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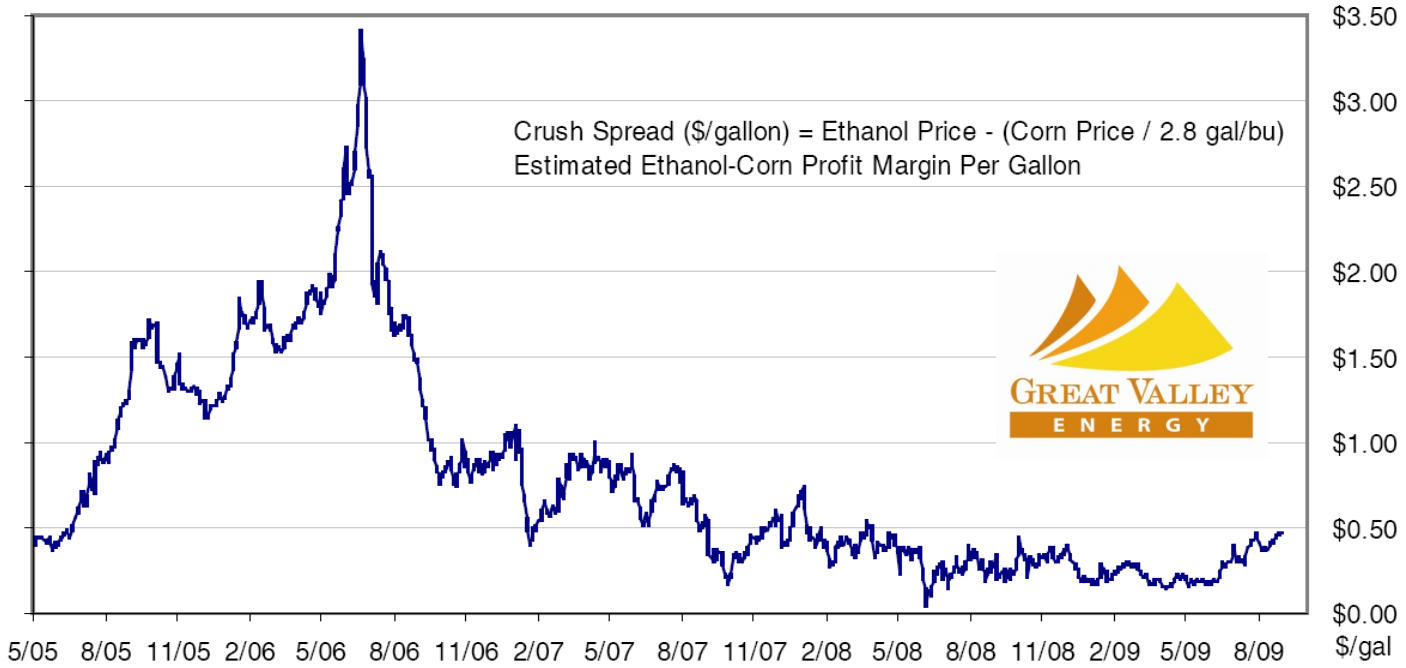
Corn Ethanol - Difficult Economics

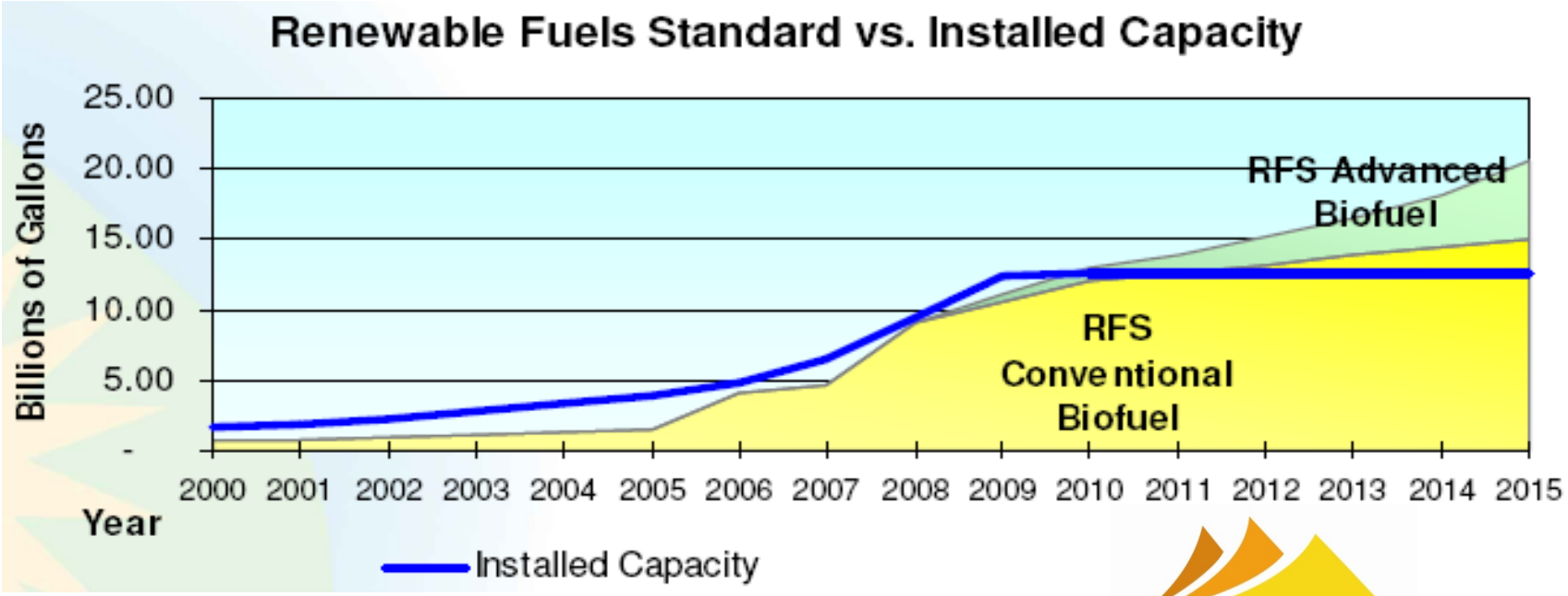
- Economics dictated by externalities (crush spread trading)
- Without fractionation, only products are ethanol & distillers grains
- Limiting factor for production in California is number of cows within economical trucking radius for distillers grains.

Spread: CBOT Ethanol-Corn Crush Margin ($/gallon)



Corn Ethanol – Existing Capacity vs. RFS

- New Corn to ethanol capacity not needed. Future conventional capacity will be met through existing facilities – expansion and efficiency enhancements.
- New Ethanol Production will be Advanced Biofuel.



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Advanced Biofuels using Sweet Sorghum

- Qualifies as Advanced Biofuel – Leading Edge
- No Impact on Corn Market
- Grows Well in Central Valley and Marginal Soils
- Can be Front-End Fractionated

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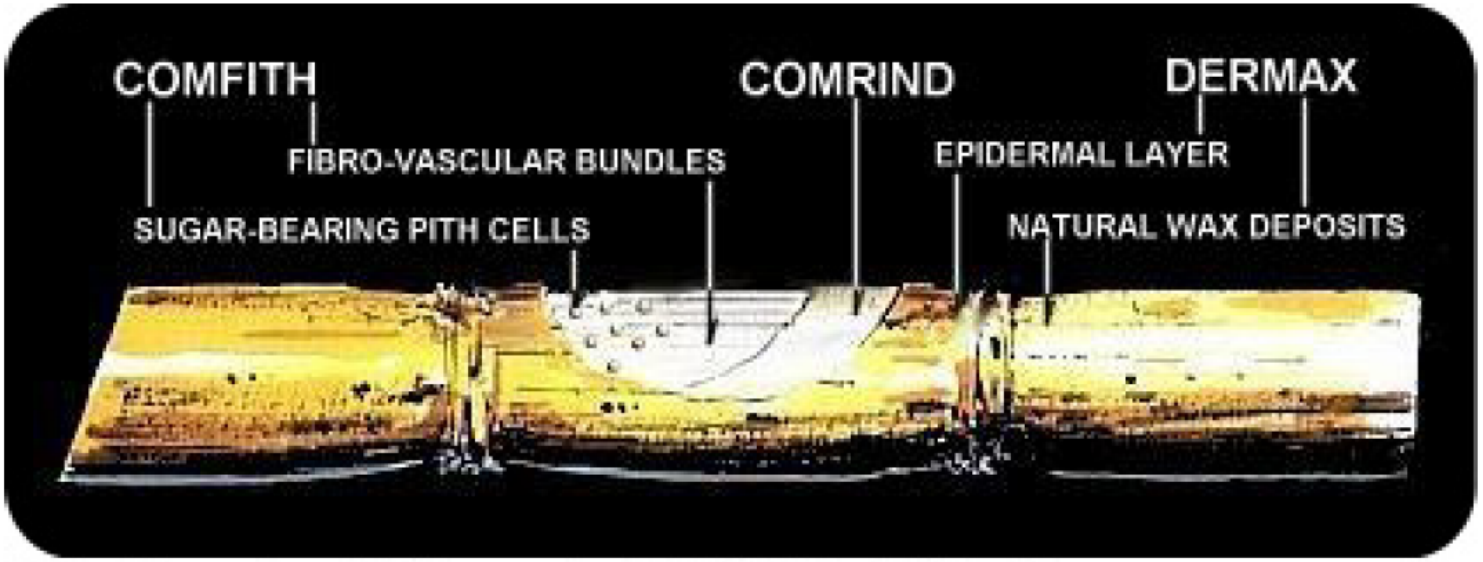
Sweet Sorghum Can be Fractionated

- Comfith contains sugar juice in soft cellulosic material
- Comrind is woody outer material
- Dermax is epidermal layer containing natural waxes



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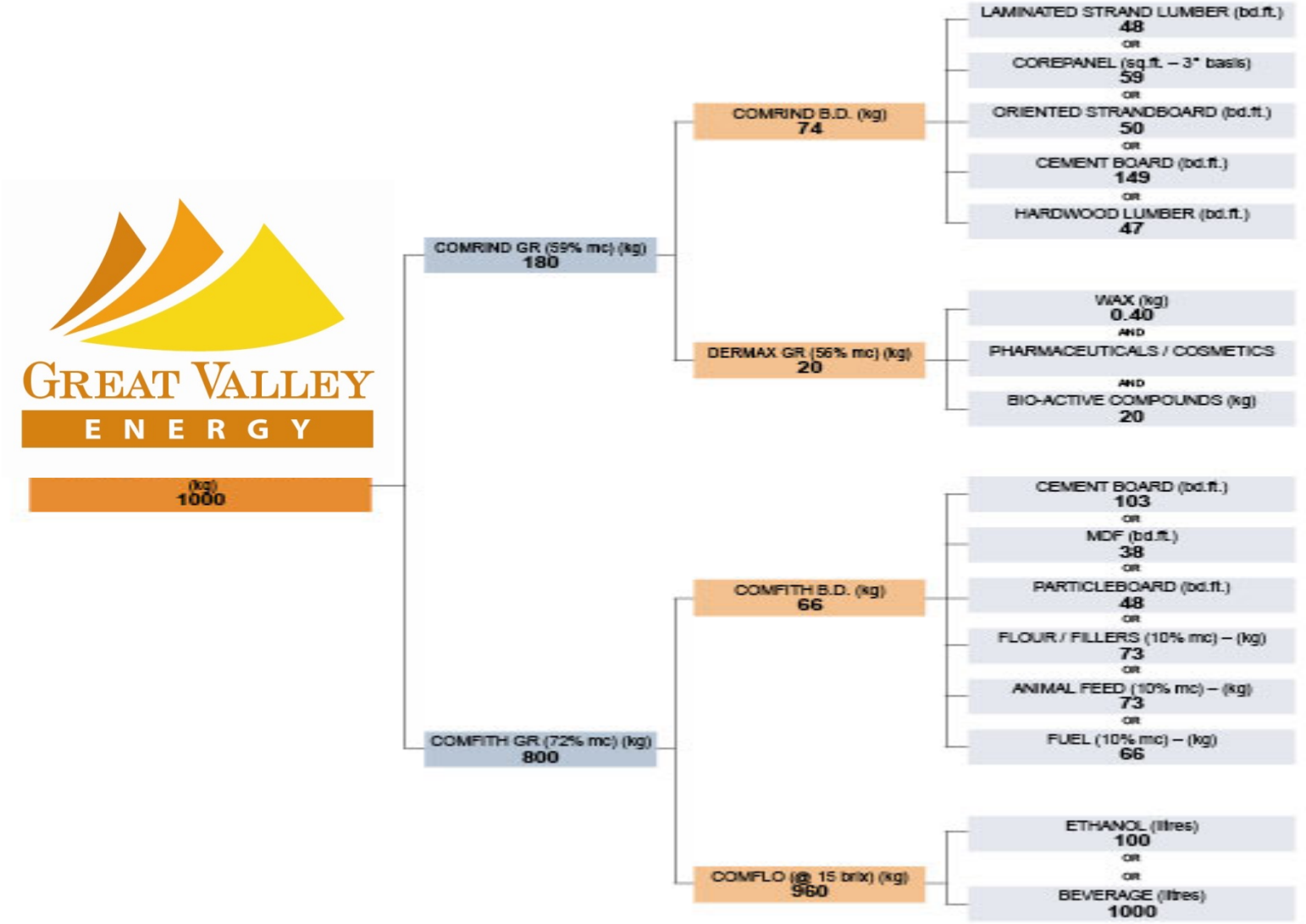
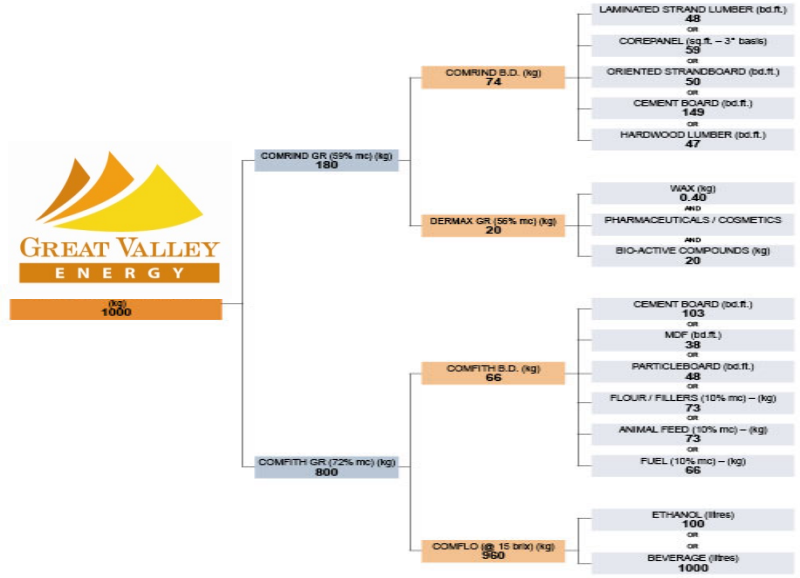
Fractions Can Be Processed to Products



Fractionation - So What?

- Multiple products = multiple income streams = greater economic stability
- Flexibility to adjust to market changes
- Foundation for further optimization (e.g., cellulosic ethanol when commercially available)
- Follows oil refinery model (many products – gasoline, diesel, LPG, waxes, fertilizers, etc.)



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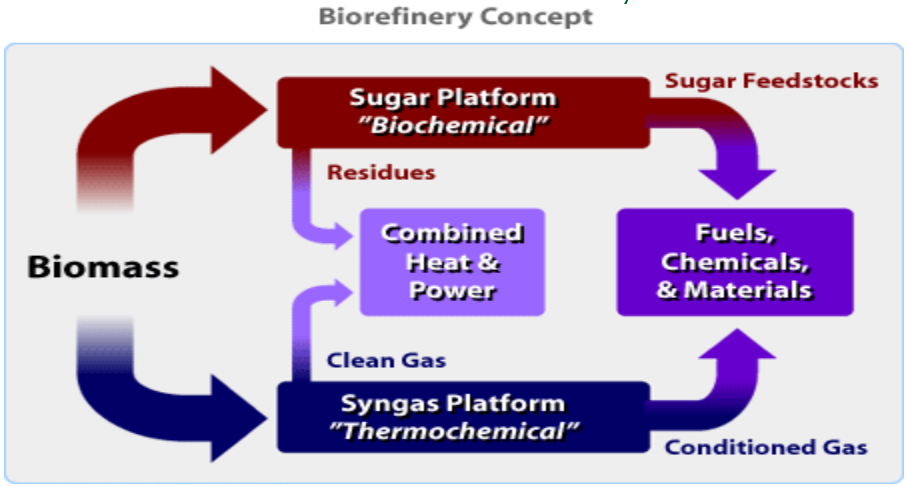

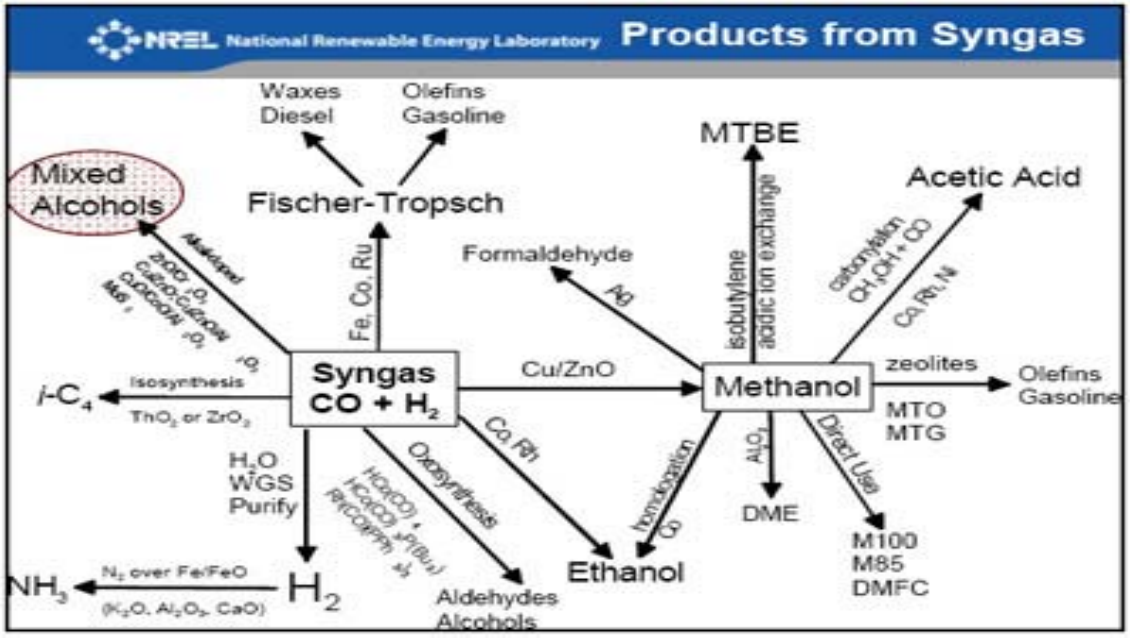

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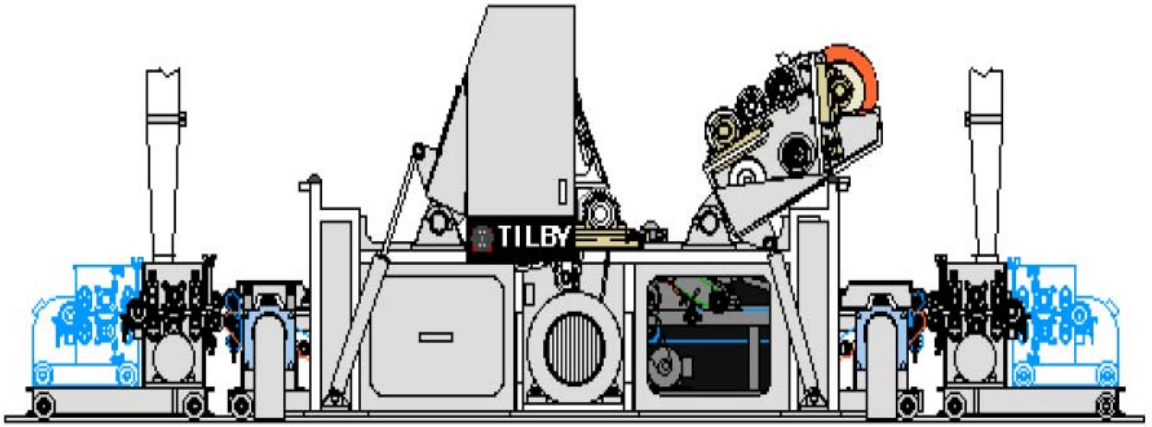
Fractionated Sweet Sorghum to Ethanol



- Sweet Sorghum is low water, low fertilizer, fast growing (90 days), even in marginal soils. May replace higher water users.
- Sweet Sorghum will grow well in the Central Valley – 2 to 3 crops
- Feedstock uncoupled from commodity markets
- Keeps economic benefits in California – “Value-Added Agriculture”
- Low carbon and low energy (no saccharification)
- Scalable, probably limited by economic trucking distance for SS
- Sweet Sorghum-to-Ethanol comparable to current ethanol pricing

Commercial Questions

- Cane separation technology is proven in practice. Sweet sorghum has not been processed on a large scale in this manner. Will it behave the same as sugar cane?
- What are the true economic values in the Central Valley/California economy of the non-ethanol sweet sorghum fractions?
- How would using treated wastewater for irrigation effect sweet sorghum crop yield?
- Each step along the value chain has been proven in a step-wise fashion via technology transfer from sugarcane to sweet sorghum. Will the integration with Sweet Sorghum follow in the same manner?
- SS must be processed within 24 hours of harvest. Can we schedule harvests like tomato processing?

Regulatory Questions

- How will Sweet Sorghum grown in California be treated under Indirect Land Use Change provisions of LCFS?
- How will non-fuel products be treated under the well-to-wheels lifecycle analysis. Does a building material count toward carbon sequestration?

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Barriers to Implementation

- Sweet Sorghum market pricing and volumes are undeveloped and undefined
- Engineering for a California-optimized plant has not been completed
- Technical and Logistical Risk for overall Process value chain
- Permitting New Biofuels Projects can be lengthy, complex and risky

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Closing Remarks and Recommendations

- Sweet Sorghum to Ethanol is commercial in the near-term – 2010, 2011.
- An optimized and properly-characterized Advanced Biofuels plant should show 70-80% reduction of GHG – comparable with sugar cane (proven) and cellulosic (still hypothetical).
- Feasibility/Market Study of Fractionated SS Process is Needed
- Preliminary Engineering is needed for feasibility and for financing
- Due to technology risk, loan guarantee will be required for debt financing to take place of performance guarantee.

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Permitting

- Permit Applications Filed January 2007
- Full Environmental Impact Review Jan-Dec 2007
- California AG Comment Letter on GHGs
- First Ever Settlement Agreement with AG on a Biofuels Project – evaluation of alternate feeds
- Air Permits Issued, EIR Certified and CUP issued March 2008
- Suit filed by AIR through CRPE 30 days later
- Settlement of Suit in September 2008
- Annexation complete February 2009.

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Fractions Can Be Processed to Products