



From Waste to Value:

Forest & Mill Residue to Drop-In Fuels

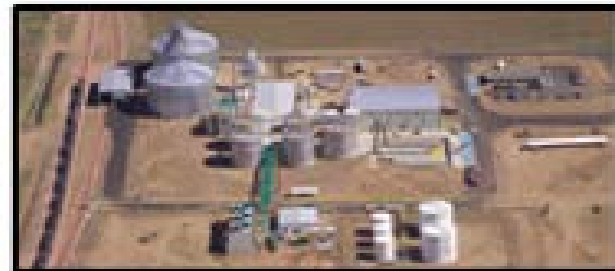
Terry Kulesa, CEO
Jeff Manternach, CFO

Red Rock Biofuels
Fort Collins, CO

Experienced Construction & Operations Team



- \$650 million of constructed value across 8+ renewable fuels plants



World Class Project Partners



Forest Management Costs



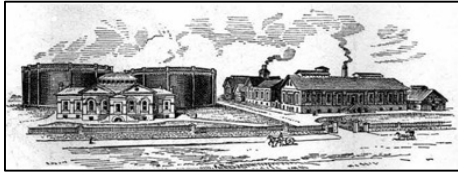
Forest Management Costs

Fighting Forest Fire = \$5,000 per acre

Forest Thinning = \$500 per acre

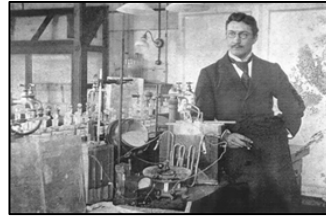


RRB Conversion Process



Gasification

Produce syngas
(CO & H₂)



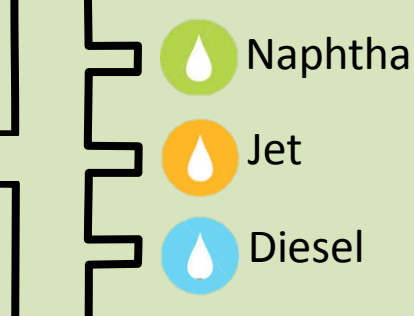
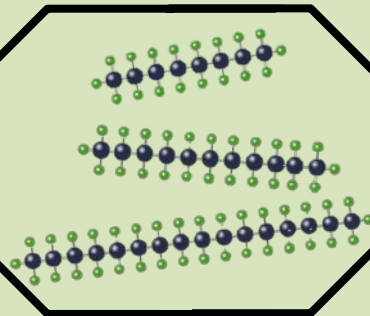
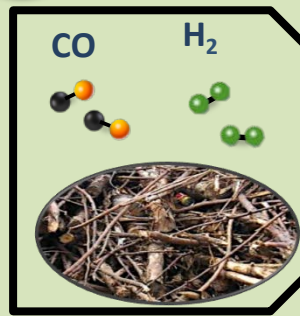
Fischer-Tropsch

Form hydrocarbon
chains



Hydroprocessing

Upgrade into
finished fuels

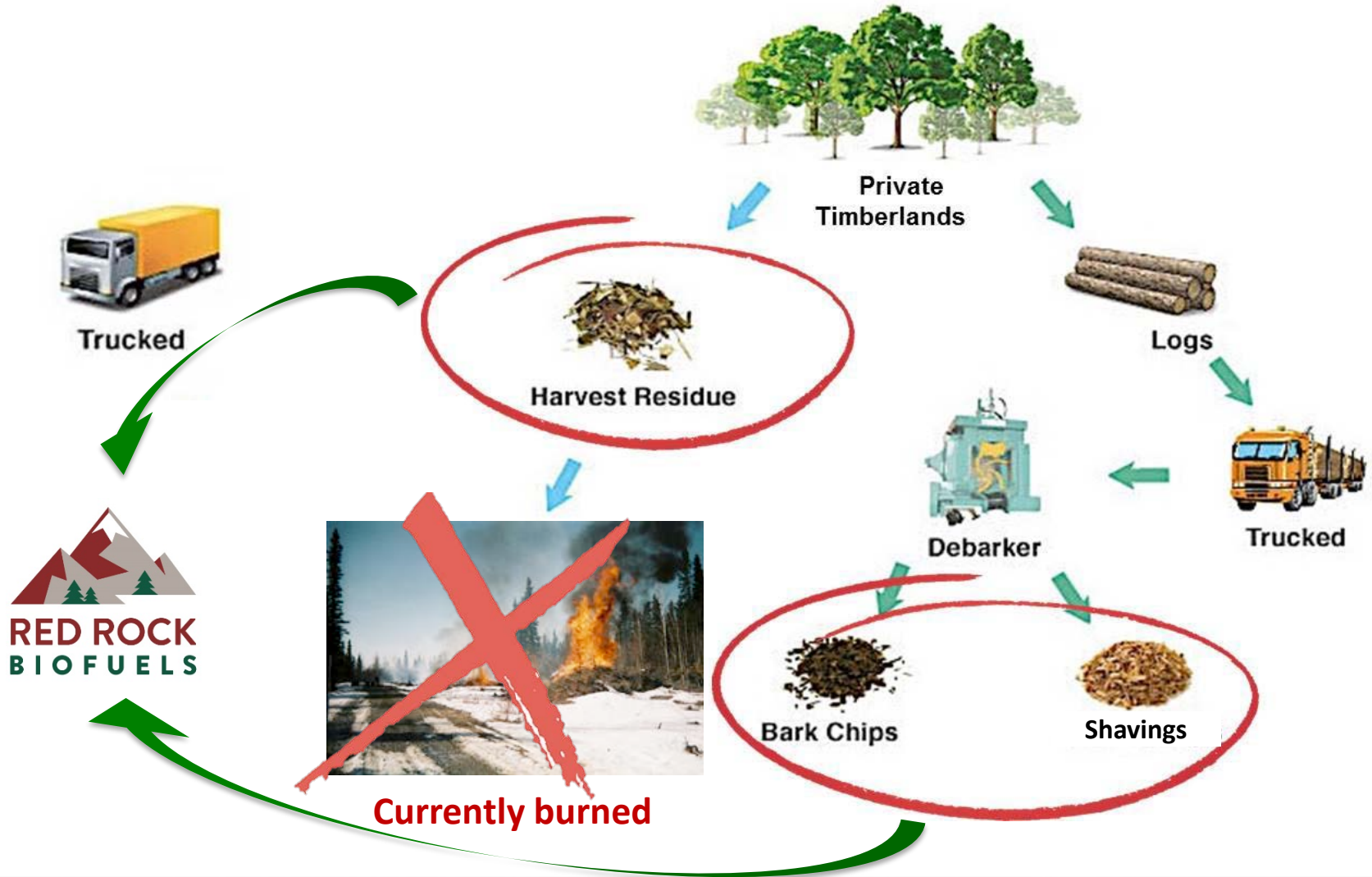


140,000 bdt/yr
Woody Biomass

15 MGY of
Renewable
Drop-In Fuels



Feedstock: Forest & Mill Residue



Project Location

Aboveground Woody Biomass and Carbon Stock
of the Conterminous United States



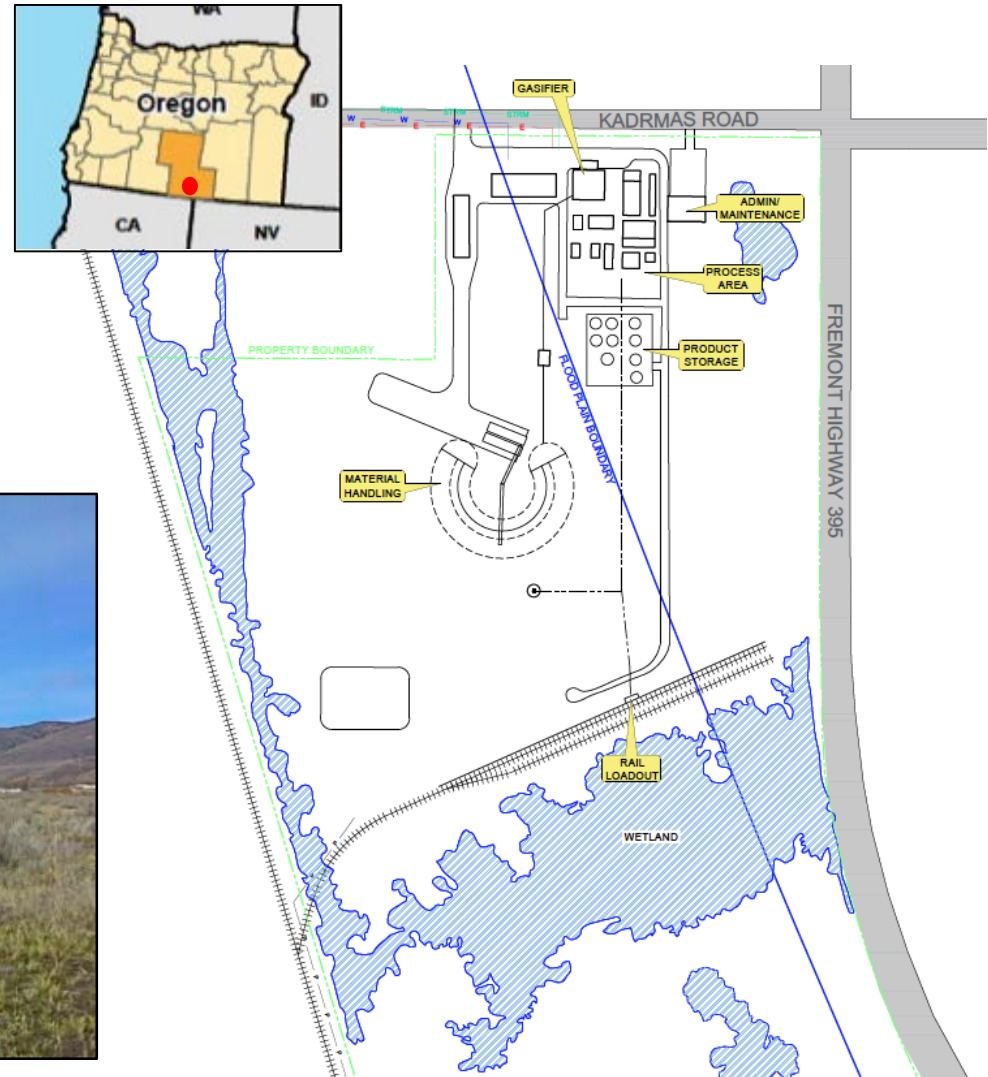
NCRD
2000
National Forest & Carbon
Center for the Year 2000



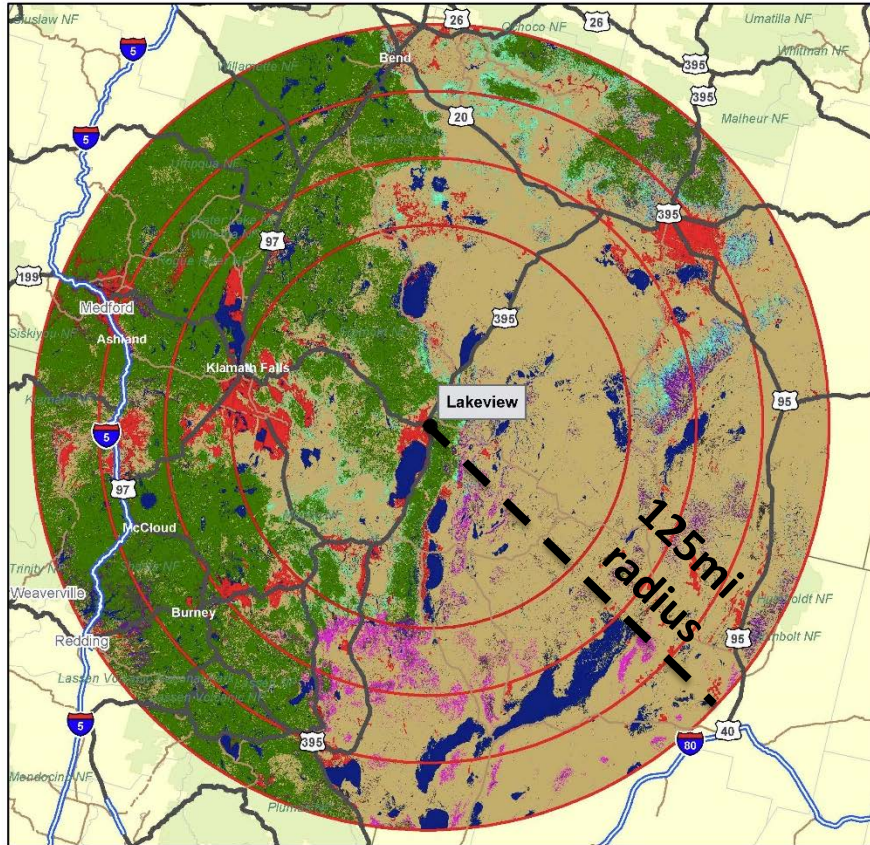
RRB's Lakeview, OR: Excellent Feedstock & Product Logistics

- Feedstock availability
- Enterprise zone site
- Highway access
- Rail access
- Natural Gas

Greenfield Site

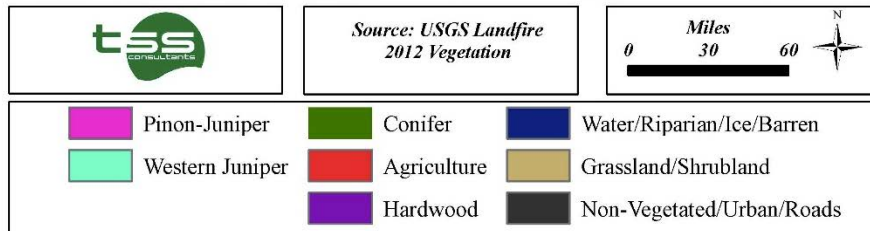


Lakeview has Ample Biomass Resources



Woody Biomass Availability

3.5x – 5x need



Fuel Off-Take Agreements



Near & Long Term Goals



■ Near Term Goals

- Close financing on RRB Lakeview
- Commence project development on plants 2+
- Construct RRB Lakeview
- Startup and Operate RRB Lakeview
- First Fuel Delivery Mid 2018

■ Long Term Goals

- Develop, construct and operate a multi-plant platform
- Become the premier supplier of cost competitive, low carbon, renewable jet fuel to aviation customers

Thank You



Terry Kulesa

CEO

tkulesa@redrockbio.com



Converting MSW Into Low-Cost, Renewable Jet Fuel

**Commercial Aviation Alternative Fuels Initiative
Biennial General Meeting**

Washington DC
October 26, 2016



Fulcrum's Business Model



Low-Cost Production

Fixed Feedstock Cost; no Availability Issues

Attractive Environmental and Sustainability Profile

Proven Technology With Full EPC Wrap

Large Development Program

Fulcrum's Valuable Fuel Products

- Passed Numerous Market Fuel Certifications
 - Ultra Low Sulfur Diesel
 - Commercial Jet
 - Navy Distillate
- Lowers Carbon Emissions by More Than 80%
- Qualifies for Numerous Renewable and Sustainability Standards
 - U.S. Renewable Fuel Standard
 - CA Low Carbon Fuel Standard
 - Roundtable for Sustainable Biomaterials



DPA Award Project - Sierra BioFuels Plant

Feedstock Processing Facility



- In Start-up Operations
- Construction Completed on Schedule and on Budget

Biorefinery



- EPC Activities Underway
- Prepared to Begin Construction Upon Financial Close
- In Operations in 2018 – Producing More Than 11 Million Gallons of Renewable Fuel Annually

Feedstock Processing Facility



Fulcrum's Development Program

Produce More Than 300 Million Gallons of Biofuel Annually

Offtake and Feedstock Agreements are in Place



Fulcrum's Strategic Partner Model



Fulcrum's Focus on Renewable Jet Fuel

- Strong Leadership Across Aviation Sector for Aviation Renewable Fuels
 - Government Entities, Including the Military
 - Private Industry
 - Multi-Lateral Organizations
- Coordinated Aviation Industry Approach to Alternative Fuels Critical to Attract Capital
 - Signals to Investors Aviation Market is Committed
- Public-Private Partnerships Fundamental to Enable Growth in Aviation Alternative Fuels
 - Collaboration With USDA, DoD, and DOE Significantly Accelerated Fulcrum's Commercialization Plans



Bruno Miller
Managing Director – Fulcrum Fuels
Fulcrum BioEnergy, Inc.
(617) 291-6352
bmiller@fulcrum-bioenergy.com

