


CAAFI Symposium: Summer 2021
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Low carbon
Renewable
Biofuels



From Waste to Value: Waste Woody Biomass to SAF

Red Rock Biofuels



Sources: Oregon Forest Resources Institute; LA Times

Red Rock Biofuels

What we do

- Red Rock Biofuels Holdings, Inc. (“Red Rock”, “RRB” or the “Company”) is a *next generation, advanced biofuels producer* based in Fort Collins, Colorado
- Red Rock utilizes technologies that enable it to *convert abundant, waste woody biomass into Sustainable Aviation Fuel (“SAF”) and Renewable Diesel (“RD”)*
 - Red Rock’s SAF and RD production will be ultra-low carbon intensity, RED II compliant, and meet ASTM specifications for both SAF and RD
 - [Lakeview will utilize solar and carbon capture technology which is projected to drop the facility’s CI to net zero]
- The Company’s facility in Lakeview Oregon is *over 60% complete* and will generate 15+ million gal/yr of biofuel
 - [Over the last year, Red Rock has worked with its engineers and advisors to finalize engineering and incorporate changes to lower CI score on Lakeview]
 - [With designs finalized, construction will pick up in June and drive towards mechanical completion in the second half of 2022]

Lakeview development as of March 2021



The Red Rock Executive Team

Terry Kulesa
Co-Founder & CEO



Terry co-founded Red Rock Biofuels in 2011 and handles business development, construction and operations. He has previously led the design and construction of five ethanol plants totaling over \$500mm in construction and over \$500mm in annual revenue. Terry has over 25 years' experience in managing biofuel operations.

Jeff Manternach
Co-Founder & CFO



Jeff co-founded Red Rock Biofuels in 2011 and handles business development, financial modeling and industry valuations. Prior to joining Red Rock, Jeff lead debt raises of over \$400mm, including a \$325mm project finance deal. Jeff has 18 years' experience in the renewable fuel industry.

Jim Moore
Director of Engineering



Jim is the director of engineering at Red Rock Biofuels and possesses a proven record of industry success. Jim has managed the P&L for multi-plant projects as well as hundreds of personnel. Prior to Red Rock, he served as executive manager for a major US ethanol provider where he managed and designed four greenfield ethanol plants. Jim's career has spanned over 35 years' in engineering and operations management.

Joe Winckler
Director of Operations






Joe leads onsite construction management and plant evaluation as director of operations. He has previously been responsible for the development, construction and operations of five ethanol plants totaling \$500mm in construction costs. Joe has over 30 years' experience managing biofuels operations.

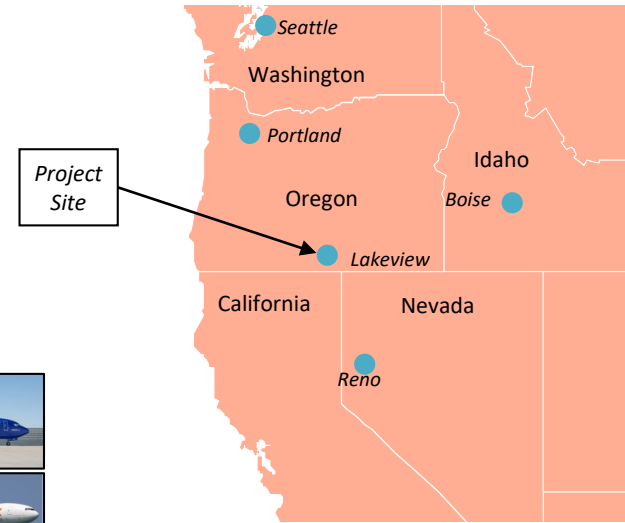
Larry Slaughter
Director of Construction



Larry is the director of construction and leads the onsite Construction Management Team. He has over 40 years' experience with the engineering, procurement and construction of new plans and facilities in the following industries: biofuels, oil & gas, nuclear and large scale industrial and commercial plants.

Project Introduction

<p>Project and Site</p>	<ul style="list-style-type: none"> Advanced biofuels production facility converting waste woody biomass into renewable drop-in jet, diesel, and gasoline blendstock fuels — Conversion of ~166,000 BDT/year of woody biomass into ~15 mm gallons/year of renewable cellulosic fuels
<p>Feedstock</p>	<ul style="list-style-type: none"> 3 vendors contracted to supply 95,300 BDT of woody biomass per year through fixed price contracts 
<p>Offtake</p>	<ul style="list-style-type: none"> Jet Fuel: 100% of jet fuel to be sold to FedEx and Southwest with 8-year offtake agreements Distribution and Marketing: Shell to distribute SAF; market/distribute diesel  
<p>EPC</p>	<ul style="list-style-type: none"> EPC Contract with IR1 Group LLC
<p>Technology</p>	<ul style="list-style-type: none"> Gasification and Syngas Clean-Up Unit: conversion of woody biomass to syngas Fischer-Tropsch Unit: cleaned syngas converted into Fischer-Tropsch (FT) waxes and liquids Upgrading of FT Products: upgrading of FT Products into finished fuels



How it all Works

From start to finish, Red Rock's process consists of six, simple steps



RRB Renewable Zero Carbon Fuels: Advantages

- Energy density equivalent to petroleum liquid fuels
- RRB Diesel will meet ASTM D975
 - Use blended or neat
 - “*Conventional fuel*” fleets become “*alternative fuel*” fleets without any vehicular or infrastructural modifications
- RRB Jet Fuel will meet ASTM D7566
 - Up to 50/50 blend with conventional fuel
- Near zero sulfur & aromatics
- Clean-burning: Low tailpipe emissions → Improved Local Air Quality
 - Approximately 30% reduction in SO_x, NO_x and PM emissions
 - Further emissions reductions possible for engines optimized for high cetane and near zero sulfur & aromatic content of FT fuels
 - Reduced maintenance

Carbon Capture

- Red Rock process generates ~100,000 MT/yr of biogenic CO₂ during the syngas cleanup
- Capture and liquefy CO₂ using industry standard equipment that Red Rock personnel have installed at other renewable fuels plants
- Rail liquefied CO₂ to geologic storage



Solar – 10 MW



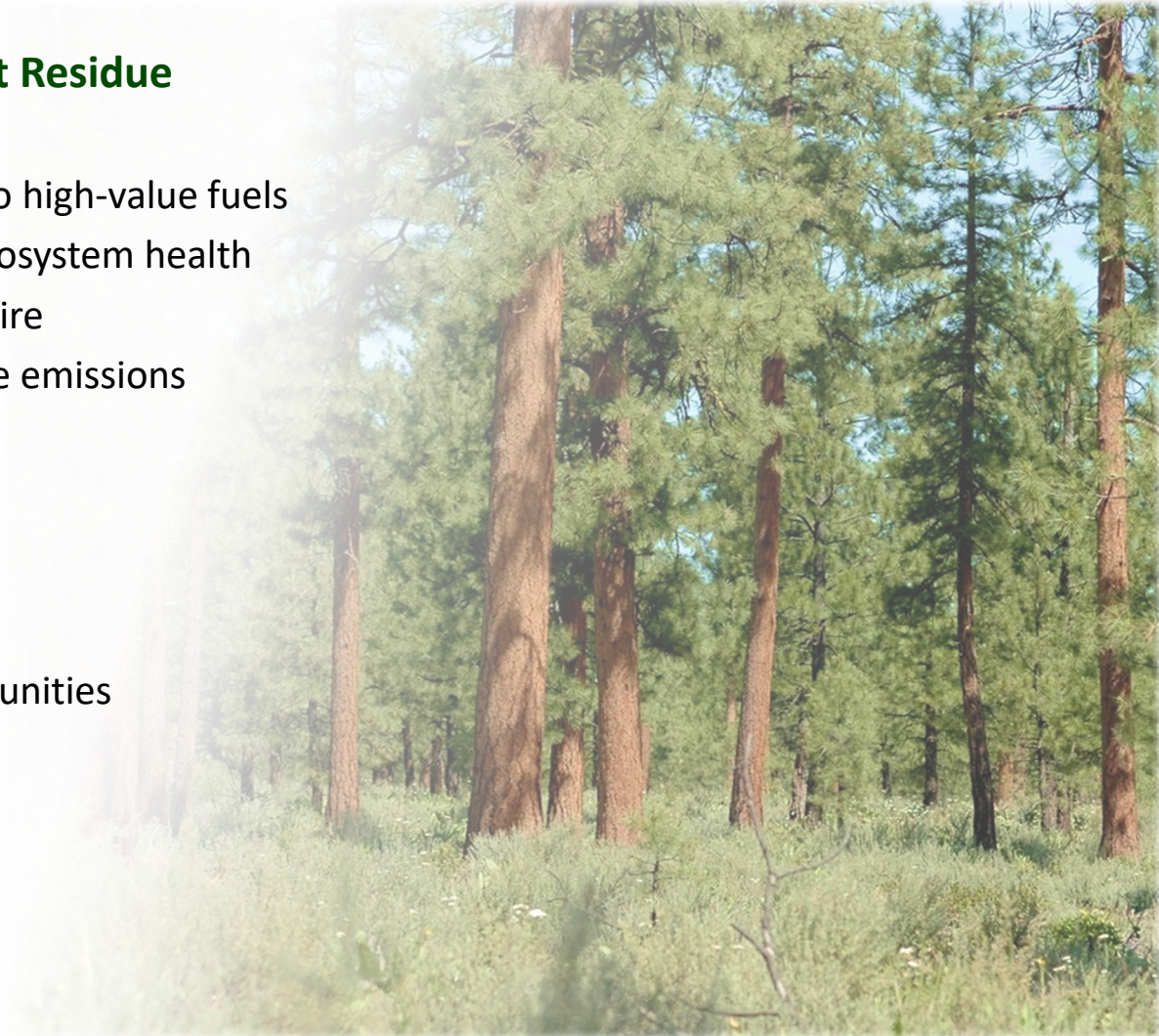
Sustainability Overview

■ Feedstock Sustainability: Forest Residue

- No purpose-grown crops
- Convert low-value forest waste to high-value fuels
- Active forest management for ecosystem health
 - Reduces risk of catastrophic fire
 - Reduces uncontrolled wildfire emissions
 - Restores forest health

■ Economic Development

- Family Wage Jobs in Rural Communities
- Improved Tax Base



Red Rock Biofuels

...and where we are going



MISSION

To create the world's lowest carbon heavy transport fuels and to help reduce the risk of catastrophic wildfire



VISION

To supply the world in the most self-sufficient, environmentally-friendly way possible



MARKET OPPORTUNITY

New technologies create first mover advantage into a new market for biofuels and renewables

NET ZERO CARBON

