From Waste to Value:

*Forest & Mill Residue to Drop-In Fuels*

Terry Kulesa, CEO
Jeff Manternach, CFO
Experienced Construction & Operations Team

- $650 million of constructed value across 8+ renewable fuels plants
World Class Project Partners

[Images of logos and emblems]

Collins

[Images of FedEx and Southwest airplanes]
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

1. CO  H₂
2. Naphtha  Jet  Diesel
3. 140,000 bdt/yr Woody Biomass
4. 15 MGY of Renewable Drop-In Fuels
Feedstock: Forest & Mill Residue

Trucked → Harvest Residue

Private Timberlands → Debarker → Bark Chips → Trucked

Currently burned → Shavings

*Shavings
Feedstock: Forest & Mill Residue

Currently burned
Project Location

Aboveground Woody Biomass and Carbon Stock of the Conterminous United States

LAKEVIEW, OR
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
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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

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

- 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

Projects Under Construction
- Sierra BioFuels Plant

Projects in Development
- Seattle
- New Jersey
- Chicago
- Denver
- San Francisco
- Los Angeles
- Houston
Fulcrum’s Strategic Partner Model

Feedstock Supply → Waste to Syncrude → Fuel Refining → Fuel Logistics → Customers

Partners:
- Waste Management
- Cathay Pacific
- Tesoro
- United
- Abengoa
- Waste Connections, Inc.
- Barrick
- The Abell Foundation
- U.S. Air Force
- Department of Defense
- Department of the Navy
Fulcrum’s Focus on Renewable Jet Fuel

• Strong Leadership Across Aviation Sector for Aviation Renewable Fuels
  o Government Entities, Including the Military
  o Private Industry
  o Multi-Lateral Organizations

• Coordinated Aviation Industry Approach to Alternative Fuels Critical to Attract Capital
  o Signals to Investors Aviation Market is Committed

• Public-Private Partnerships Fundamental to Enable Growth in Aviation Alternative Fuels
  o Collaboration With USDA, DoD, and DOE Significantly Accelerated Fulcrum’s Commercialization Plans