

Slash and/or Biomass Challenges and Opportunities



Oregon Smoke Management Annual Report

2020



"STEWARDSHIP IN FORESTRY"

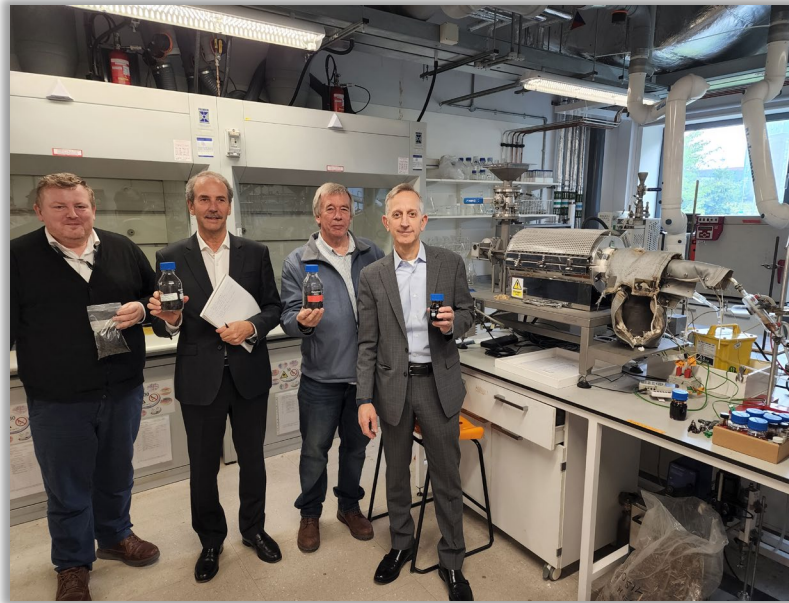
OREGON DEPARTMENT OF FORESTRY
FIRE PROTECTION DIVISION
SMOKE MANAGEMENT AND FUELS

| Year | Total No. Units | No. Units Burned | Acres Burned | Tons Burned |
|----------------|-----------------|------------------|----------------|------------------|
| 2011 | 3,544 | 2,880 | 162,154 | 1,370,113 |
| 2012 | 3,651 | 3,092 | 141,892 | 1,086,214 |
| 2013 | 3,890 | 3,104 | 182,189 | 1,308,114 |
| 2014 | 4,095 | 3,492 | 208,593 | 1,405,349 |
| 2015 | 3,601 | 3,101 | 179,613 | 1,371,114 |
| 2016 | 3,484 | 2,928 | 181,800 | 1,228,107 |
| 2017 | 3,597 | 2,868 | 159,624 | 1,004,108 |
| 2018 | 4,307 | 3,388 | 185,702 | 1,270,725 |
| 2019 | 3,726 | 3,319 | 200,629 | 1,245,128 |
| 2020 | 3,146 | 2,287 | 130,997 | 863,875 |
| Average | 3,704 | 3,029 | 173,319 | 1,215,285 |

European Union Biofuels Research Lab

Energy and Bioproducts
Research Institute,
Birmingham, UK

Wood Residue (Slash) Biomass Conversion



EBRI Test Lab – Ashton University -
Birmingham, United Kingdom



Com-Kiln Wood Residual Processor



Wood Chips Ready for Processing



Post-Production Green Biocrude

“The Circular Economy”

Wood Residue (slash)
Biomass Conversion



200+ Ton Wood Slash Pile
Ready for Burn

| Wood Residue Production Volumes and Values | | | | 200 Tons | | 1,215,285 Tons | |
|--|---|------------------------|---------|----------|------------------|----------------|----------------------|
| Com-Kiln Off-Take | Practical Use | Per Unit Selling Price | Units | Volume | Gross Revenue | Volume | Gross Revenue |
| Bio-Crude (Pyrolic Oil) | Oil for Renewable Diesel feedstock | \$2.08 | Gallons | 16,400 | \$34,092 | 99,653,370 | \$207,160,375 |
| 2G Biofuel Tax Credit | Oil from Wood Residue (Lignocellulosic) | \$1.01 | Gallons | 16,400 | \$16,564 | 99,653,370 | \$100,649,904 |
| Pyroligneous Acid | Wood vinegar - insecticide & pesticide | \$40.00 | Gallons | 1,800 | \$72,000 | 10,937,565 | \$437,502,600 |
| Biochar | Soil Amendment | \$50.00 | Yards | 320 | \$16,000 | 1,944,456 | \$97,222,800 |
| Gases | Used to power com-kiln gen set | \$0.14 | kW | 40 | | 243057 | |
| Total Tonnage Gross Revenue | | | | | \$138,656 | | \$842,535,678 |
| CO2e Metric Tons Reduced | | | | | | | -2,200,000 |
| Black Carbon Tons Reduced (PM: > 10, 10 - 2.5, < 2.5) | | | | | | | -35,000 |