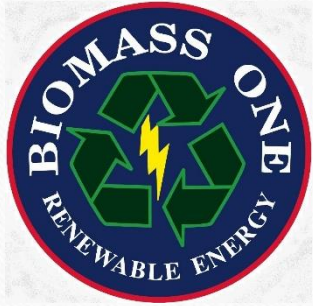




RENEWABLE ENERGY & BIOCHAR

Excess forest fuels and salvage wood create energy and help build healthy soils



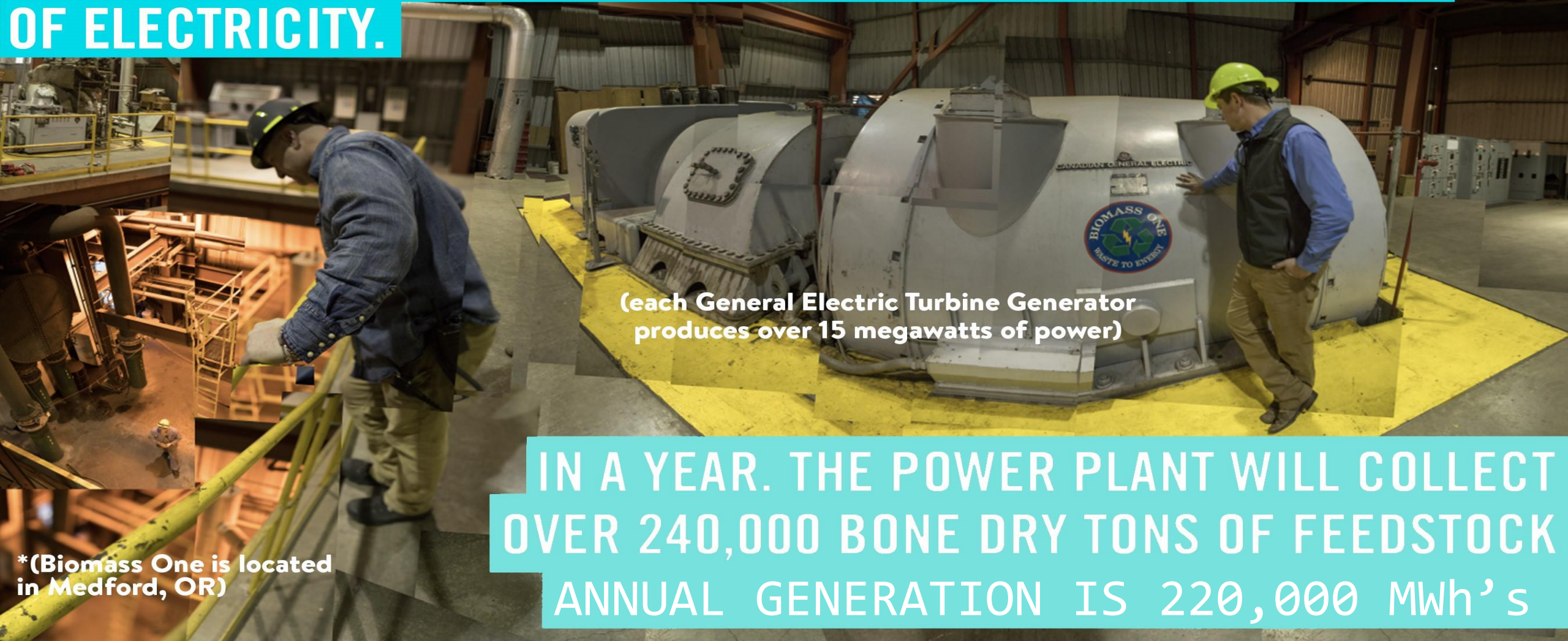


History of Biomass One L.P.

- Built in 1985
- Electrostatic Precipitator's Installed in 1989 to Remove 99.86% of Particulates.
- One of the Most Efficient Wood Fired Plants in the U.S.
- 30 Megawatts of Power Generation.
- All Electricity Sold to PacifiCorp Under a Long Term Power Purchase Agreement.
- Over \$50,000,000 Invested.
- 65+ Full Time Employees.
- Rogue Biochar Founded in 2017



IT TAKES ABOUT 1.1 BONE DRY TONS OF CLEAN WOODY BYPRODUCT FUEL TO GENERATE ONE MEGAWATT-HOUR (MWh) OF ELECTRICITY.



(each General Electric Turbine Generator produces over 15 megawatts of power)

IN A YEAR, THE POWER PLANT WILL COLLECT OVER 240,000 BONE DRY TONS OF FEEDSTOCK ANNUAL GENERATION IS 220,000 MWh's

*(Biomass One is located in Medford, OR)

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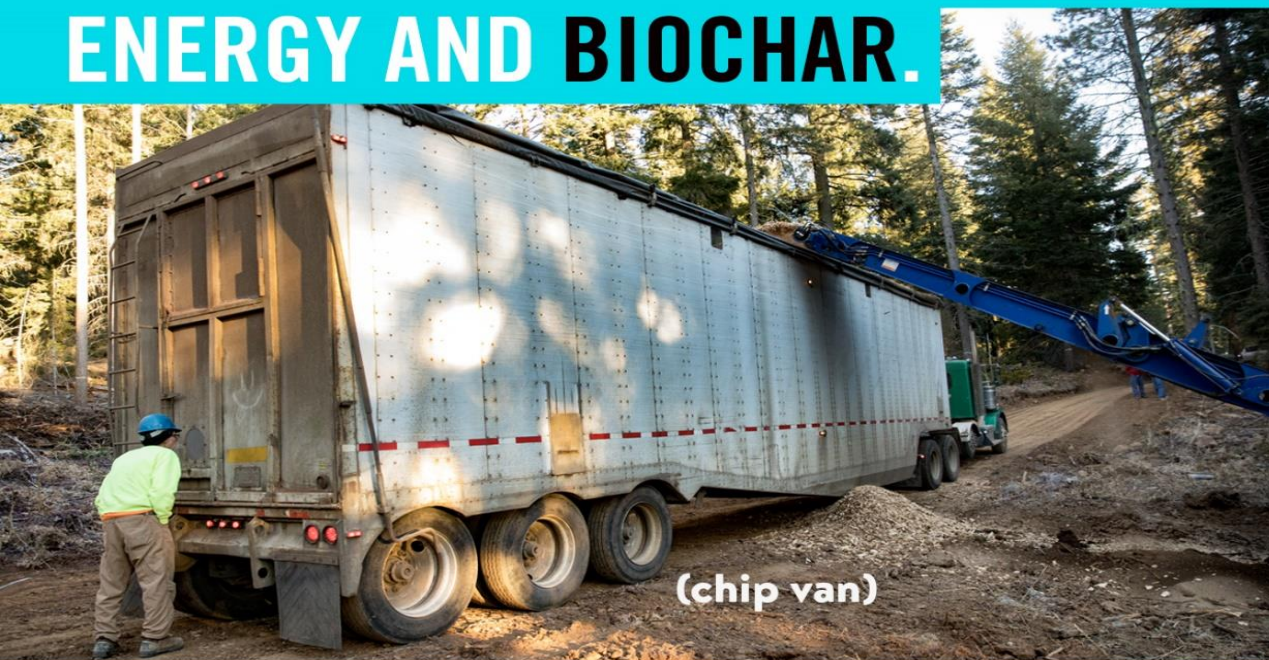
LEARN MORE AT www.biochar-us.org

Feedstock Procurement

- **In Woods Grinding**
 - **Tops and Limbs of Trees from Local Logging Operations**
 - **High Hazard Fuel Reduction**
- **Timber Industry Byproducts**
 - **Sawdust**
 - **Bark**
 - **Poll Peeling's**
 - **Chip Overs**
- **Agricultural Byproducts**
 - **Almond Shells**
 - **Walnut Shells**
 - **Orchard Removal**
- **Wood Yard**
 - **Landfill Deferment Green Waste**
 - **Clean Pallets**
 - **Rejected Lumber**
 - **Wood Bin Service**



FORESTERS CAN ALSO REMOVE FOREST FUELS USING PORTABLE WOOD GRINDING EQUIPMENT. THESE PRODUCE WOOD CHIPS THAT CAN BE LOADED INTO CHIP VANS FOR TRANSPORT TO NEARBY BIOMASS POWERPLANTS, WHERE THEY ARE CONVERTED INTO ENERGY AND BIOCHAR.



(chip van)



slash pile

(Peterson 5710 horizontal grinder)

(log loader)

FORESTS AND BIOCHAR

Excess forest fuels can create energy and help build healthy soils



LEARN MORE AT
www.biochar-us.org

RENEWABLE POWERPLANTS CAN ALSO USE ALMOND SHELLS AS FEEDSTOCK, WITH BIOCHAR AS A VALUABLE BI-PRODUCT.



(almond shells)



(almonds)

RENEWABLE ENERGY & BIOCHAR
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(feed stock)

(tub grinder)

(salvaged wood)

TUB GRINDERS AT THIS RENEWABLE POWERPLANT PROCESS SALVAGED WOOD THAT WOULD OTHERWISE BE USED FOR GREEN WASTE COMPOSTING, DISCARDED AT LOCAL LANDFILLS, OPEN BURNED OR LEFT ONSITE AS A COMMUNITY EYESORE.

RENEWABLE ENERGY & BIOCHAR
Excess forest fuels and salvage wood create energy and help build healthy soils



LEARN MORE AT
www.biochar-us.org

**THIS COMBINED HEAT, POWER AND BIOCHAR PLANT
CONVERTS WOODY BIOMASS INTO BOTH RENEWABLE
ENERGY AND BIOCHAR.**

(Deltak Coyote Boiler)

**THIS FACILITY* PRODUCES 30 MWh OF ENERGY
AND 10 CUBIC YARDS OF BIOCHAR PER HOUR.**

* (Biomass One
Medford, Oregon)

RENEWABLE ENERGY & BIOCHAR
Excess forest fuels and salvage wood create energy and help build healthy soils



USBI
Building the future from the ground up.™

LEARN MORE AT
www.biochar-us.org



ROGUE BIOCHAR™

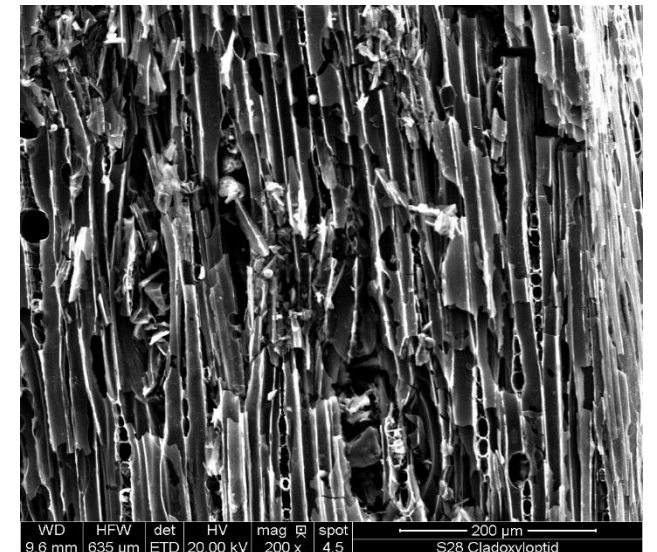
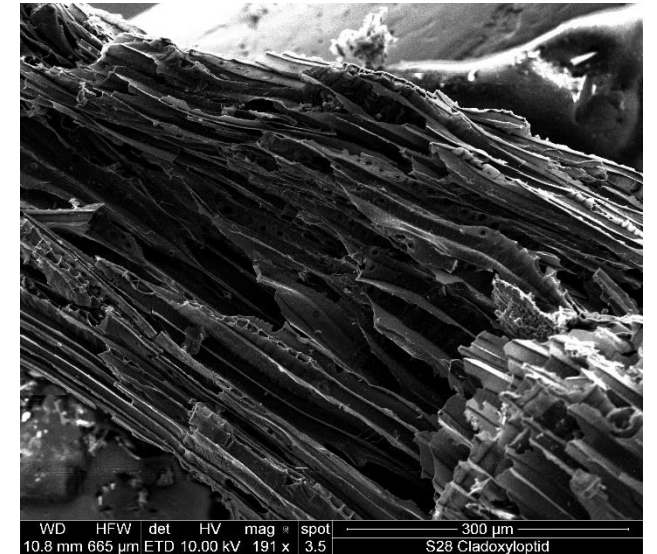
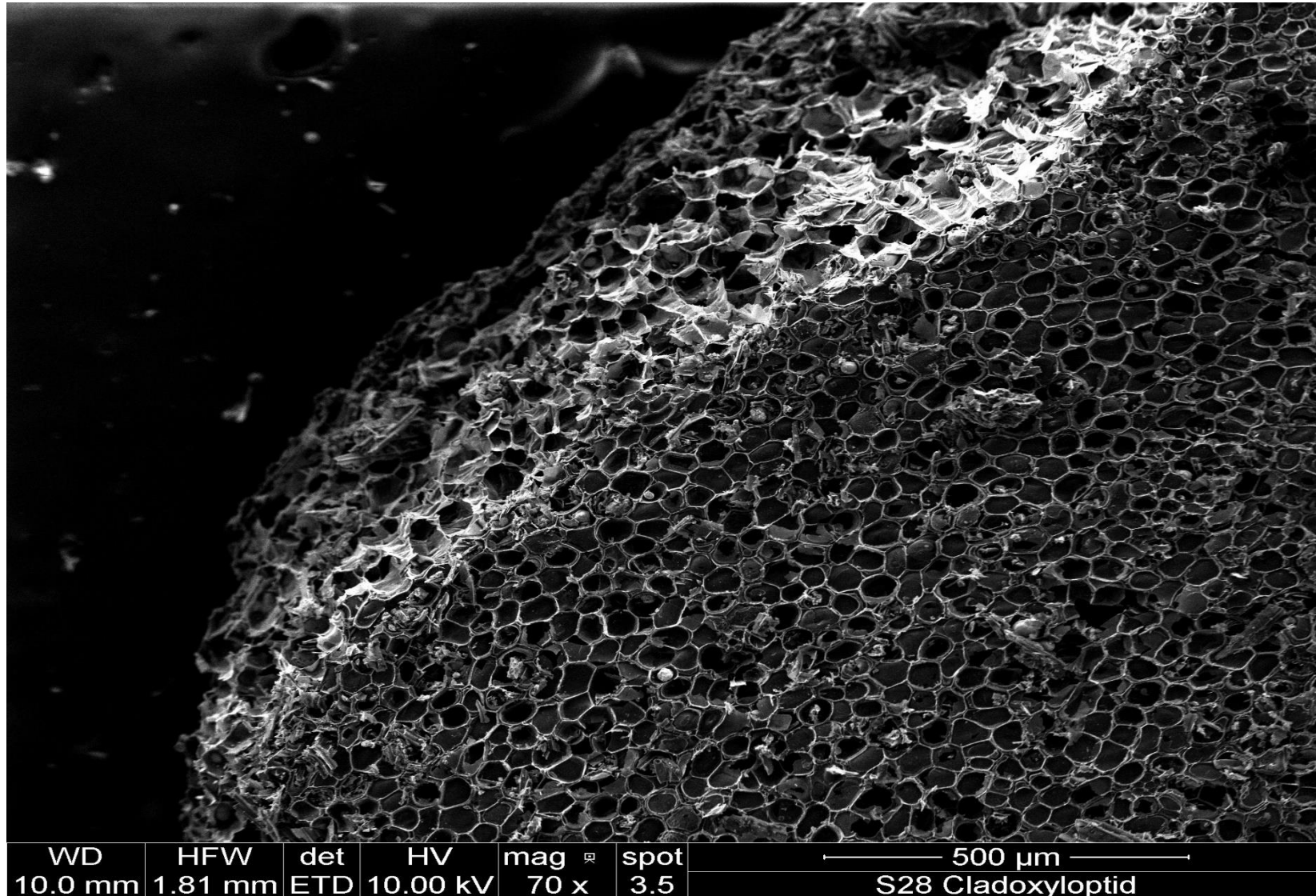
- 50,000 Cubic Yards Annual Production Capacity
- 1600°F Production Temperature
- High Surface Area
- Low Ash Content
- High Carbon Content
- Low Hydrogen/Carbon (H:C) Ratio
- Consistent Particle Size Distribution
- Capable of Sorbing a wide variety of contaminants in both Aqueous and Vapor Phase



Scanning Electron Microscope Images



HUMBOLDT
STATE UNIVERSITY



Producing Biochar in High Volumes and Associated Challenges





The Renewable Fuel Standard was a law passed by Congress to incentivize the replacement of fossil fuels for transportation with ag-based fuels. Just as corn ethanol replaces gasoline, biomass power replaces fossil fuels when used to power an electric vehicle. What's more, an EV powered by biomass is 96% less GHG emitting than gasoline, according to the EPA.

The so-called "RFS2" law passed by Congress in 2007 included electricity. **It's now 2019 and the EPA has not processed a single application from an electricity producer to participate in the program!**

Biomass Power Association, together with the American Biogas Council and Energy Recovery Council, has formed the RFS Power Coalition. The Coalition has sued the EPA on its failure to include electricity in the 2019 Renewable Volume Obligation (the targets that the EPA sets each year to determine the volumes that obligated parties (i.e., oil refiners) are required to buy or blend the following year).

If successful, this will be a game-changer for the biomass power industry. Depending on how the EPA implements the program, it could translate into 1.5-4 cents per kWh to start. That's enough to provide stability to facilities that are challenged with low power prices.

Learn more at www.rfspower.com. Interested in supporting the coalition?

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Biomass One and Rogue Biochar

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