



# COPPER BASIN BIOMASS

Joe Bovee

*Mar. 14, 2012*

## Four Options for Biomass Opportunities in the Copper Basin:

1. Cordwood
2. Wood Chips
3. Wood Pellets
4. Wood Briquettes

*All Have Distinct Advantages and Disadvantages*



## **Various Applications:**

1. Boiler Heating Systems
2. Radiant Heating Systems
3. District Heating Loops
4. Combined Heat and Power (CHP)
5. Electric Power Generation

## **Supply Issues in Developing Any of the Systems Are:**

1. Biomass Resource Availability
2. Cost of Fuel
3. Market
4. Planning

## 1. Biomass Resource Availability

Conservatively the Copper Basin contains 3,000,000 tons of biomass.

This is equal to approximately 330,000,000 gallons of heating oil, or enough biomass to heat the entire residences in the Copper Basin for 150 years.



## 2. Cost of Delivered Fuel Prices

1. Cordwood \$200-\$275 per Cord
2. Chips \$65-\$90 per Ton
3. Pellets \$300 per Ton
4. Fuel Oil \$4.00 per Gallon



## Factors of Biomass Costs

- a) Harvesting
- b) Transportation
- c) Storage
- d) Permitting, Administration & Marketing

**LABOR INTENSIVE!**

### **3. Current Local Market**

1. 2,000,000 Gallons Diesel Fuel
2. 1000 Cords of Firewood
3. 50 Tons Wood Pellets
4. 20 Tons Wood Briquettes



## 1–3 Year Fuel Market Projection

1. 3000 Tons Wood Briquettes
2. 2000 Tons Wood Chips
3. 1000 Cords Firewood
4. 500 Tons Wood Pellets
5. 1,400,000 Gallons Diesel Fuel

## 4. Planning

1. 10-20 Year Commitment
2. 5-Year Harvest Schedule
3. Stewardship - Environmental
4. Seasonal Access
5. Worst Case Scenarios

A close-up photograph of vibrant green corn leaves, showing their texture and veins. The leaves are arranged in a dense, overlapping pattern, filling the left side of the frame. The lighting is bright, highlighting the natural green color of the plants.

# **Advantages of Biomass Fuel**

- **Keeps Money in Local Economies**
- **Reduce Long-term Fuel Costs**
- **Create Jobs**
- **Reduce Fire Risk**
- **Wildlife Enhancement**
- **Environmentally Friendly**

A close-up photograph of vibrant green leaves, likely from a plant like corn or sorghum, showing detailed vein patterns and a glossy texture. The leaves are arranged in a dense, overlapping manner, filling the left side of the frame.

# Disadvantages of Biomass Fuel

- **Long-term Commitment**
- **Capital Investment**
- **Fluctuating Fossil Fuel Cost**