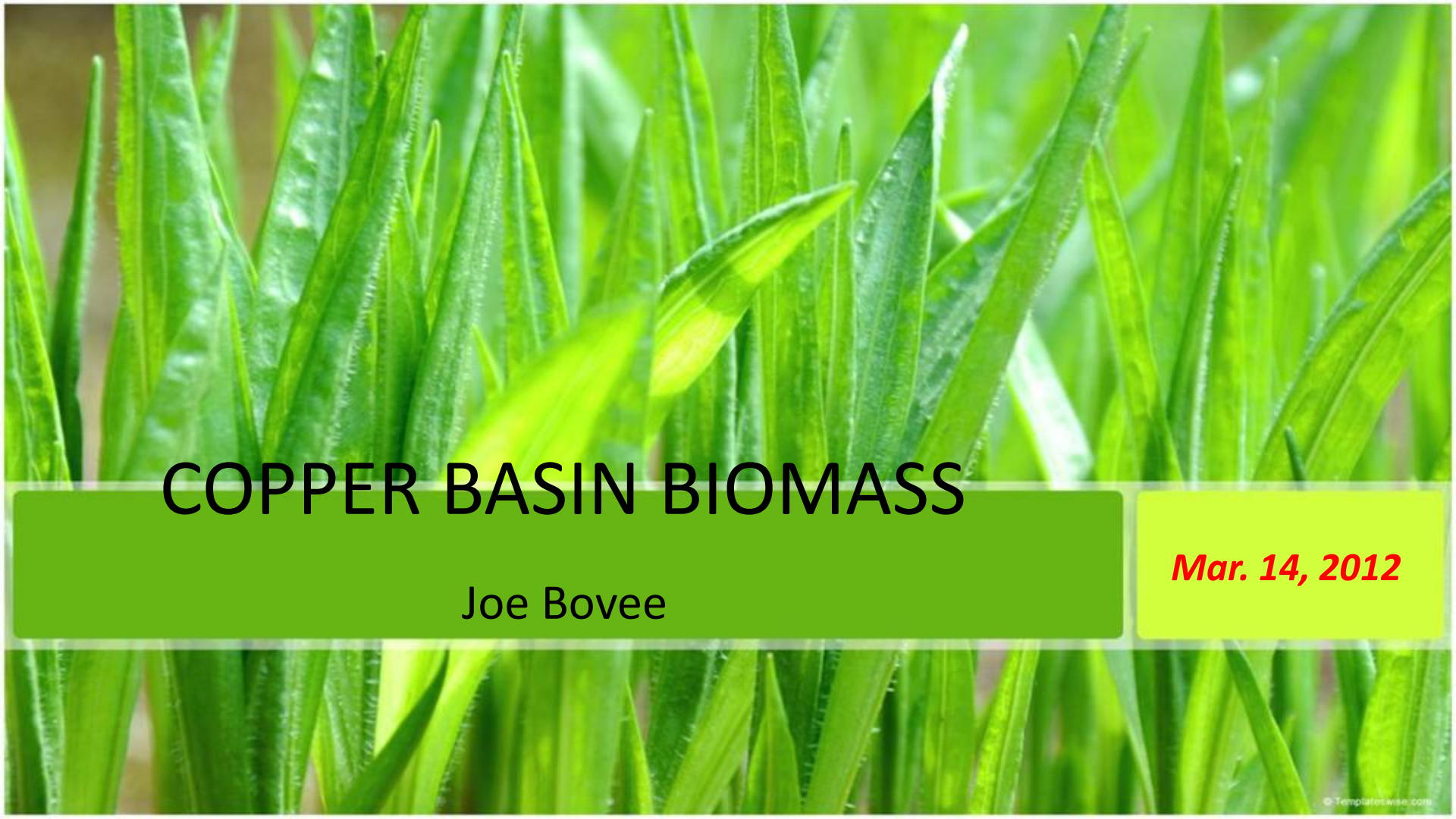

COPPER BASIN BIOMASS

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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

Advantages of Biomass Fuel

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

Disadvantages of Biomass Fuel

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