

Woody Biomass Feedstock Assessment – Key Factors to Consider



**Ensuring Forest Sustainability
Workshop**

Davis, California

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Fuel/Feedstock Characteristics

A variety of value-added bioenergy related end uses have evolved over time. The conversion technology employed will determine targeted feedstock characteristics. Key Physical Characteristics include:

- Heating Value (btu/dry pound)
- Moisture Content (% moisture)
- Sizing (typically 3" minus)
- Ash Content (% non-combustibles)
- Chemical Make-Up (sulphur, potassium, lignin)

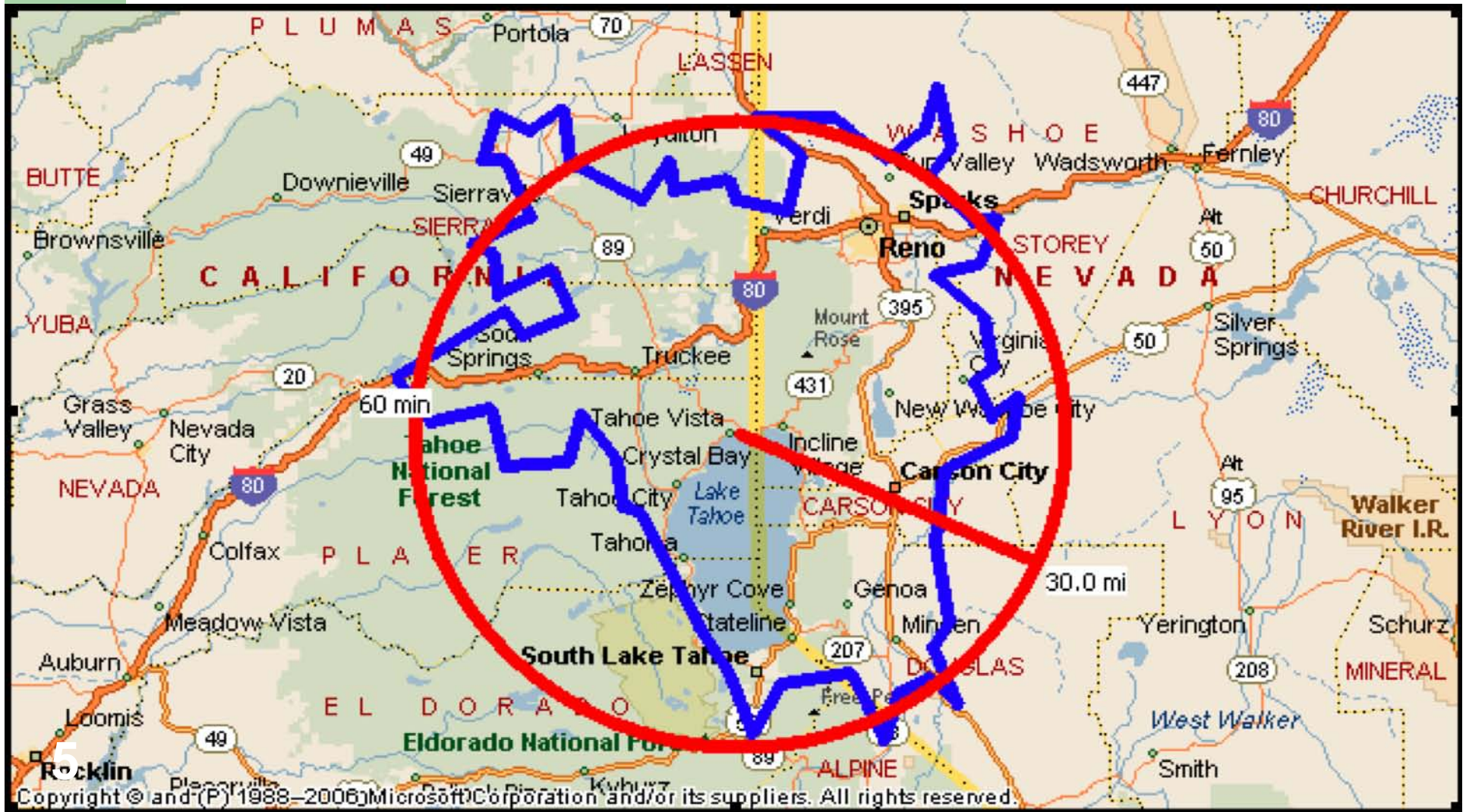
Confirm Types of Fuel/Feedstock That Meet Project Specifications

- **Forest**
 - Forest operations (fuels reduction, timber harvest residuals)
 - Forest manufacturing byproducts (sawdust, bark, shavings)
- **Agricultural**
 - Byproducts (orchard removals, prunings, shells)
 - Dedicated crops (poplar, willow, eucalyptus, switchgrass)
- **Urban**
 - Tree trimmings, general wood waste
 - Clean construction & demolition wood

Target Study Area

- Define feedstock availability – Target Study Area based on economic haul distances required to source fuel/feedstock.
- Typical radial distances from the targeted site are 30, 50, 75, or 100 miles.

Kings Beach, CA Project Target Study Area



Assessment Filters

Three filters used to confirm availability of fuel/feedstock resource:

- **Potential** – Gross estimate.
- **Technical** – More refined based on physical recovery and resource policy factors.
- **Economic** – Very refined using current competition/demand, potential competition, community support and actual costs to harvest, collect, process and transport.

Current Competition

- Assess current uses/competition for fuel/feedstock.
- Examples include:
 - Other bioenergy projects.
 - Furnish for composite panel manufacturing.
 - Raw material for soil amendment/landscape cover.
 - Feedstock for densified fuel pellet facility.

Potential Competition

- Assess potential uses/competition for fuel/feedstock.
- Examples (same as those listed on previous slide) include:
 - Other bioenergy projects.
 - Furnish for composite panel manufacturing.
 - Raw material for soil amendment/landscape cover.
 - Feedstock for densified fuel pellet facility.

Key State and Federal Policies

- List existing policies that impact fuel/ feedstock availability and pricing. Some may only be available for defined periods or are currently being considered:
 - Federal - Biomass Crop Assistance Program
 - State - HB 2210 Tax Credit

Bioenergy Project Development - Deal Killer Issues to Consider

- Fuel/Feedstock Supply
- Community Support
- Project Economics
- Appropriate Technology
- Siting/Infrastructure & Permitting



Fuel/Feedstock Supply Assessment – Key Factors

- Meets project specifications.
- Sustainable long term supply located within close proximity (30 to 125 mile radius).
- Economically available (accounting for current/potential competition, state/federal policies).
- Available in quantities and from diverse financially viable sources that support project financing:
 - Minimum 10 year supply, 50% - 70% under contract.
 - At least 2.5 – 3 times facility usage (fuel supply coverage ratio).



Tad Mason, CEO
TSS Consultants
Rancho Cordova, California
916.638.8811 x 112
tmason@tssconsultants.com
www.tssconsultants.com