Opportunities to Site Community-scale Forest Bioenergy Projects in the Sierra

Kim Carr
Key Points

• The multiple environmental, economic and societal benefits of biomass energy and an avoided cost approach to accounting for these

• The current state of forestry and why community-scaled biomass energy facilities are important to protecting the State headwaters and forests

• The state of biomass energy facility development
California’s water supply mainly comes from the Sierra Nevada and southern Cascade mountains. The map shows the range of water yield throughout the state, water that is potentially available for use. The highest amount of water yield is depicted in dark and lighter blue and the more arid areas are shades of beige.

The naturally wet areas of California support and sustain the dry areas. The map shows the primary end users of the water by use of the faucet icon.
Wildfire Threat & Transmission System

[Map showing the Wildfire Threat to Ecosystems with Electrical Transmission System Highlighted]
Welcome to Groveland, CA
Pacific Gas & Electric near the enclave of Buck Meadows west of Yosemite National Park
Assets at Risk

• Water Quality
• Water Supply and Reliability
• Carbon Storage
• Air Quality/GHG emissions
• Habitat
• Recreation
• Timber
• Utilities Infrastructure
• Structures, homes, etc.
Rim Fire Severity
Avoided Costs:

Estimated Rim Fire Costs: $146m

Costs to treat 20% of watershed: $25.5m ($500/ac)

(20% of 255,000 acres)
Current Biomass Management
Diverse Biomass Uses
Credits

- Biomass products (post and poles, landscaping materials)
- Energy (and heat)
- By-products from energy (biochar)
- Carbon credit off-sets
California Bioenergy Action Plan

Develop woody biomass bioenergy demonstration projects by:

- Updating research
- Refining criteria for ‘community-scale’ projects
- Identifying candidate projects
- Developing screening criteria
- Seeking funding
- Coordinating the Biomass Working Group
Biomass Working Group

State
• California Energy Commission
• California Public Utility Commission
• Natural Resources Agency
• Department of Forestry and Fire Protection
• Sierra Nevada Conservancy
• UC Berkeley

Federal
• US Forest Service

Local
• Placer County

Non-Governmental
• Sierra Institute
• The Nature Conservancy
• Sierra Forest Legacy
• Northern Sierra Partnership
• Hayfork Watershed Center
• Pacific Forest Trust
• National Forest Foundation
• Sierra Business Council
• Biomass Thermal Energy Council

Technical Expertise/Industry
• TSS Consultants
• Miramar Environmental (PG&E representative)
• The Collins Company
• California Forestry Association
Need to engage Local, State, Federal and Private Partners in this investment
Wildfire Threat to Ecosystems
w/ Electrical Transmission System Highlighted

Proposed Facility
## Active/Potential Projects

<table>
<thead>
<tr>
<th>SPONSOR</th>
<th>LOCATION</th>
<th>SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placer County</td>
<td>Truckee, California</td>
<td>2 MW</td>
</tr>
<tr>
<td>North Fork, Community Development Council</td>
<td>North Fork, California</td>
<td>1 MW</td>
</tr>
<tr>
<td>Calaveras Healthy Impact Products Solutions, Inc.</td>
<td>Wilseyville, California</td>
<td>2 MW</td>
</tr>
<tr>
<td>Indian Valley Community Service District</td>
<td>Greenville, California</td>
<td>3 MW</td>
</tr>
<tr>
<td>CDF Parlin Fork Conservation Camp</td>
<td>Fort Bragg, California</td>
<td>1 MW</td>
</tr>
<tr>
<td>Yuba County Watershed Protection &amp; Fire Safe Council</td>
<td>Marysville, California</td>
<td>3 MW</td>
</tr>
<tr>
<td>Unity Forest Products</td>
<td>Yuba City, California</td>
<td>1 MW</td>
</tr>
<tr>
<td>Dinkey Collaborative/Southern California Edison</td>
<td>Shaver Lake, California</td>
<td>1 MW</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>14 MW</strong></td>
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Project location screening

How close is the project to an electric distribution grid?

How much sustainably-harvested feedstock is available?

What utility services the site?
SB 1122 Impact on Biomass

- Creation of markets for woody biomass from hazardous fuels reduction
  - 50 Mw of distributed energy will utilize approximately 400,000 (BDT) of forest biomass
  - Support treatment of approximately 30,750 acres per year
Waste Diversion

Open pile burning

Closed burning