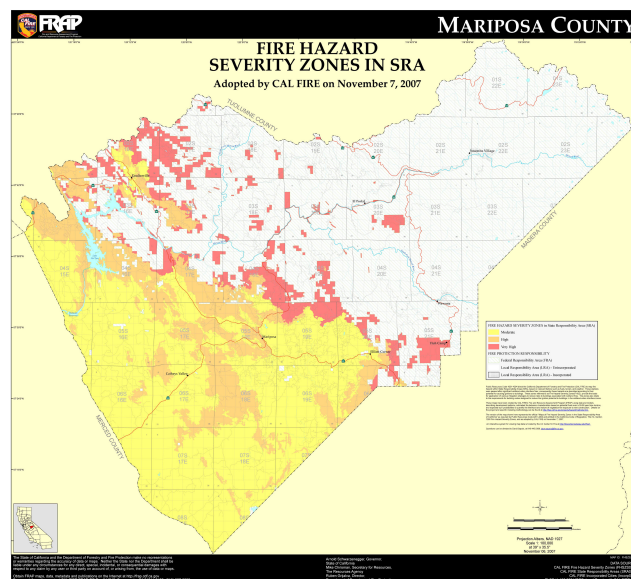


Mariposa Biomass Project

Local Need and Opportunity:

Mariposa County is located in the western foothills of the Sierra Nevada range and has a population of approximately 18,000. The county is ground zero for the outbreak of the beetle infestation that has killed millions of trees. Mariposa County has also been devastated by wildfires. The community is interested in finding ways to fund the massive effort to reduce the threat of wildfires in the county and the bioenergy facility is one key factor that can make a difference by creating a market based solution to an environmental problem. Local support and a strong development team have been important factors in moving the project forward.



Project Summary:

The Mariposa Biomass Project (MBP) is located near the Mariposa County Solid Waste Facility in Mariposa, CA and the local PG&E substation. When completed, the facility will be capable of accepting and processing forest biomass feedstocks that would otherwise create wildfire and air quality concerns. This facility will provide community and utility rate payer benefits, including forest ecosystem protection (due to removal of excess forest growth that leads to catastrophic wildfires), watershed protection, air quality benefits, greenhouse gas reduction benefits, local jobs, and renewable power generation to help meet state energy goals. Once commissioned, the facility will annually produce over 19,000 MWh of renewable, community-scale, grid-connected baseload (24/7) power from synthetic gas that will be utilized in a gas engine that is designed to maximize efficiency with low emissions.

The technology selected, Cortus Energy's WoodRoll process, uses a unique 3-stage process that includes a built in feedstock dryer and a pyrolysis stage followed by a gasification stage where the char from the pyrolysis stage is oxidized by steam in a steam-carbon or steam reformation reaction. The WoodRoll facility will be assembled on site from a series of 16 standardized factory-tested modules that can be installed efficiently and moved if necessary. The combination of high efficiency and availability combined with low operating and maintenance costs will allow the Mariposa Biomass Project to be a financially successful facility that can be replicated up and down the Sierra.

The project has achieved the following milestones:

- Completed a fuel availability study
- Secured 5.2 acre industrial zoned site
- Selected a technology
- Completed the system impact study (PG&E Interconnect Cost Estimate)
- Obtained a Conditional Use Permit (CEQA)

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- Filed for an Authority to Construct with the Air Quality Management District
- Ready to enter the Bioenergy Market Adjusting Tariff (BioMat) queue
- Awarded a \$240,000 USDA Wood Innovations Grant
- Awarded a \$5,000,000 California Energy Commission EPIC Grant

Project Details:

Land Area:	5.2 acres
Zoning:	Industrial
Project Size:	2.4 MW
Net Electric Output to the Grid:	19,000 MWhrs of production annually
By-Products	Waste Heat
Technology:	WoodRoll gasifier, Cortus Energy
Schedule:	6 months – Design and Engineering 18 months – Construction & Commissioning
CAPEX	\$ 19,000,000 ± 10%

CAPITAL (Sources):	\$10,875,000	Non-Recourse Debt (1)
	\$3,625,000	Private Equity (2)
	\$4,500,000	CA State Grants (3)
	<u>\$ 19,000,000</u>	

- (1) To be determined
- (2) To be determined
- (3) CEC EPIC Grant

Risk Mitigation:

1. 20-year, fixed price PPA with PG&E, \$197/MWhr
2. Fixed price feedstock agreements
3. Guaranteed Maximum Price Contracts with Site Work Contractor
4. Performance Guarantees from Cortus Energy
5. Manufacturer Equipment warranties from major equipment providers

Investment Return:

20% After-Tax Internal Rate of Return

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Ferguson Fire, Mariposa County
96,901 acres



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