

GREENHOUSE GAS ANALYSIS OF THE CABIN CREEK BIOMASS FACILITY

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SYMPOSIUM - SACRAMENTO

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THE RUNDOWN

- ▶ Key CEQA Requirements
- ▶ GHG Emissions Estimates
- ▶ What does it all mean?

CEQA IN A NUTSHELL

- ▶ Any discretionary action by a government agency triggers CEQA
- ▶ GHGs and Climate Change are one of many resource topics that must be analyzed
- ▶ Significant effects to the environment must be mitigated to the extent feasible
- ▶ Draft EIR → Public Comments → Final EIR

CEQA STATUTE AND OPR GUIDANCE

"Lead agencies should make a good-faith effort, based on available information, to calculate, model, or estimate the amount of CO₂ and other GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."

Source: Governor's Office of Planning and Research. 2008. Technical Advisory. CEQA and Climate Change: Addressing Climate Change Through CEQA Review.

CEQA CHECKLIST QUESTIONS

Climate change-related impacts are considered significant if implementation of the proposed project would do any of the following:

- ▶ Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- ▶ Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

MASS EMISSIONS OF BIOMASS FACILITY

Emissions Source	MT CO ₂ e/year
Syngas Combustion	26,526
Chipping of Biomass	301
Trucks Hauling Biomass and Biochar	96
Loader in Fuel Yard	197
Employee Commute Trips	35
Electricity Consumption from the Grid	1,134
Water Consumption	222
Wastewater Treatment	156
Construction Emissions (amortized)	5
Avoided Open Burning of Forest Thinning Slash and Hazardous Fuels	(24,858)
Net Increase in Emissions	3,814



key

AVOIDED EMISSIONS

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PROJECT DESIGN CONSIDERATIONS

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- ▶ Location: Facility Design vs. Fuelshed Area
- ▶ Truck Size vs. Accessibility into Forests
- ▶ Truck Hauling Capacity vs. Number of Truck Trips
- ▶ Cost of Diesel Fuel
- ▶ Gate Fees



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CONSIDERATIONS NOT ACCOUNTED FOR

- ▶ Reduced Wildfire Risk
- ▶ Increased Timber Harvest Yield
- ▶ Future Potential Carbon Sequestration
- ▶ Potential displacement of fossil-fuel based electricity



MASS EMISSION THRESHOLDS

- ▶ 25,000 MT CO₂e/year (EPA, CEQ)
- ▶ 10,000 MT CO₂e/year (BAAQMD, SDC)
- ▶ 1,150 MT CO₂e/year (SLOAPCD)
- ▶ Carbon neutrality



MASS EMISSION THRESHOLDS



GHG EFFICIENCY

- ▶ Net increase in GHGs: 3,814 MT CO₂e
- ▶ Plant's capacity: 2.0 MW
- ▶ Operations: 24/7, 330 days/year
- ▶ GHG efficiency: 0.22 MT CO₂e/MW-hr

GHG EFFICIENCY OF ELECTRICITY PRODUCTION SERVING CALIFORNIA

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- ▶ Project GHGs from Electricity Sector in 2020:
91.6 MMT CO₂e
- ▶ Demand in 2020: 340,000 GW-hr/year
- ▶ Target GHG efficiency: 0.27 MT CO₂e/MW-hr

CONDITIONS REGARDING BIOMASS FUELS

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- ▶ Residuals from hazardous fuels reduction projects
- ▶ Forest thinning and harvest residuals
- ▶ WUI-sourced waste materials
- ▶ No urban wood (construction waste, demolition debris)
- ▶ Written documentation that all fuel would have been otherwise open burned
- ▶ Update Fuel Procurement Plan every 5 years



THANK YOU

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