



FOREST BIOMASS BUSINESS CENTER: NEVADA COUNTY BOS PRESENTATION

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Camptonville Community Partnership
September 12, 2017

National Forest Foundation

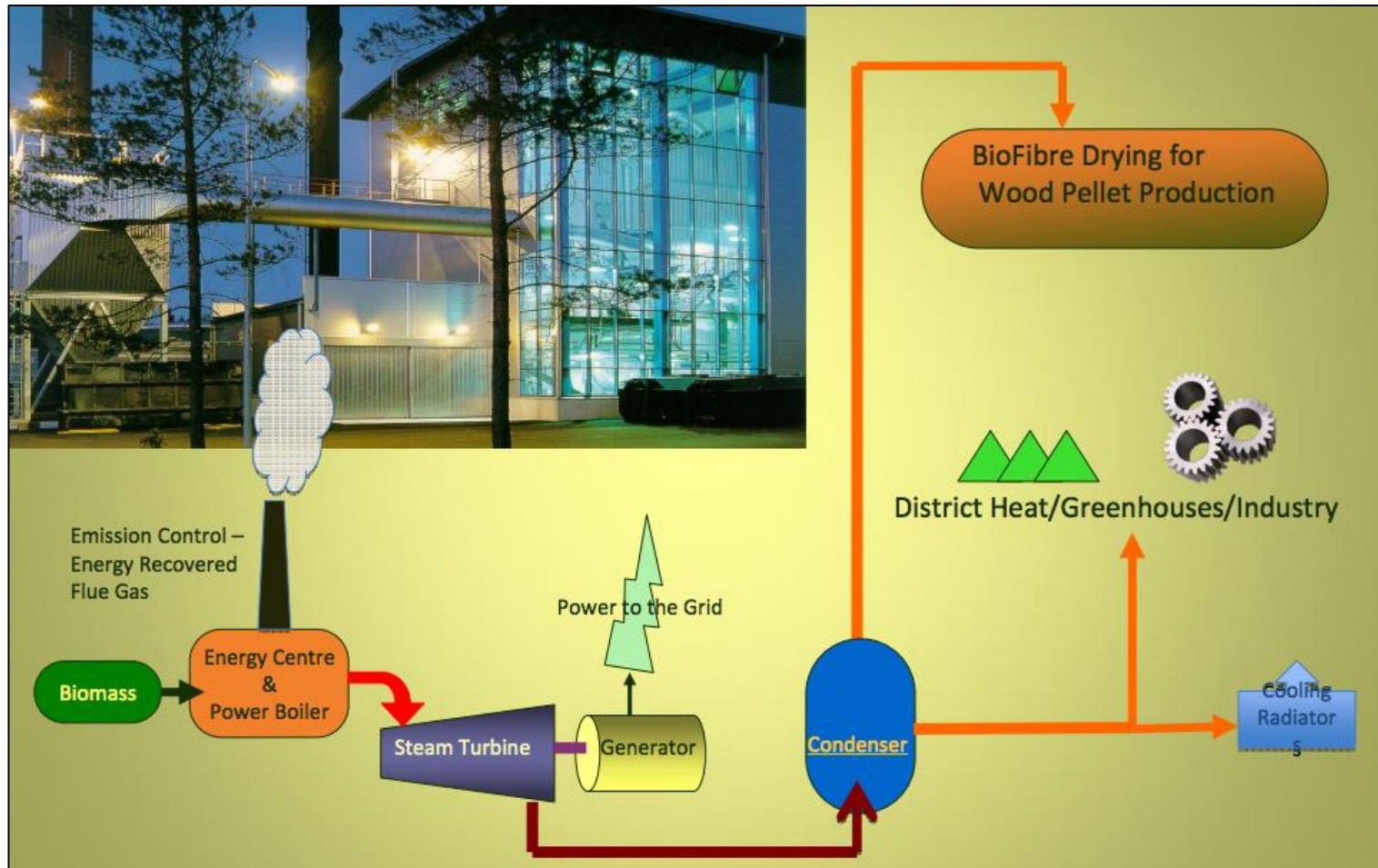
“The NFF promotes the enhancement and public enjoyment of the 193-million acre National Forest System. By directly engaging Americans and leveraging private and public funding, the NFF improves forest health and Americans' outdoor experiences. The NFF's programs inform millions of Americans about the importance of these treasured landscapes. Each year, the NFF restores fish and wildlife habitat, plants trees in areas affected by fires, insects and disease, improves recreational opportunities, and enables communities to steward their National Forests and Grasslands.”



PRESENTATION OUTLINE

- Forest Biomass Business Center concept
- Bio-MAT program overview
- Project goals
- Overview
- History
- Current work
- Next steps
- Questions?

THE FOREST BIOMASS BUSINESS CENTER CONCEPT



From “Combined Heat and Power and Pellets”, John Swaan, Magnolia BioEnergy

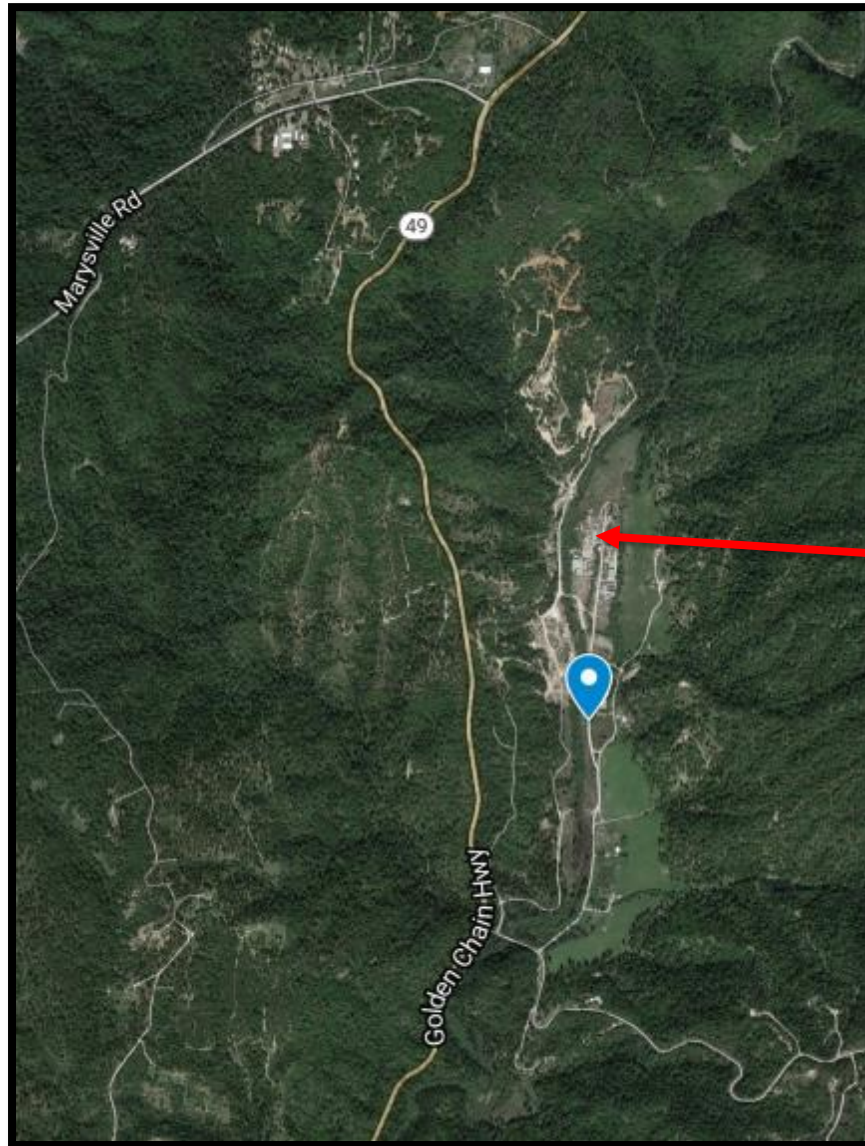
BIOENERGY MARKET ADJUSTING TARIFF (SB1122)

- Bio-MAT is a CPUC program that sets electricity prices for small bioenergy projects
- Signed into law September 2012
- Requires the three largest investor-owned utilities to procure:
 - 50MW of renewable energy derived from sustainable forest management projects
 - 90MW from ag/dairy
 - 110MW from municipal waste
- Projects must be ≤ 3 MW
- 80% of feedstock forest-based, 20% urban/ag wood
- “Feed-in tariff” auction
 - Requires site control, System Impact Study, and developer
- Power Purchase Agreement → 30 mos. to construct

PROJECT GOALS

- Build a viable model for biomass utilization
- Create sustainable local employment
- Promote a fire safe community
- Improve regional air quality
- Enhance forest and watershed health
- Produce renewable energy
- Revitalize the Celestial Valley mill site

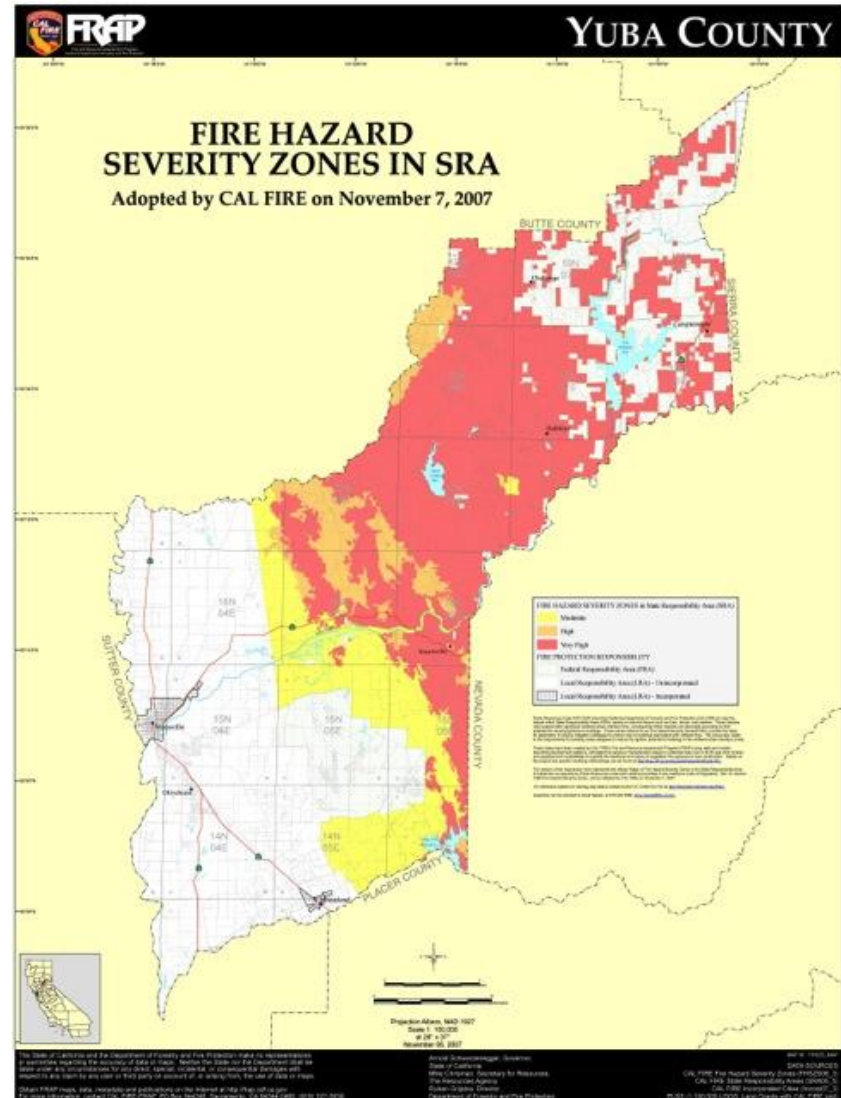
PROJECT LOCATION



Proposed
bioenergy
facility

WHY DOES YUBA COUNTY NEED A FOREST BIOMASS BUSINESS CENTER?

- IMPROVE FOREST HEALTH
- CREATE FIRE SAFE COMMUNITIES
- ADDRESS TREE MORTALITY CRISIS



WHY DOES YUBA COUNTY NEED A FOREST BIOMASS BUSINESS CENTER?

IMPROVE AIR QUALITY/ REDUCE PILE BURNING



WHY DOES YUBA COUNTY NEED A FOREST BIOMASS BUSINESS CENTER?

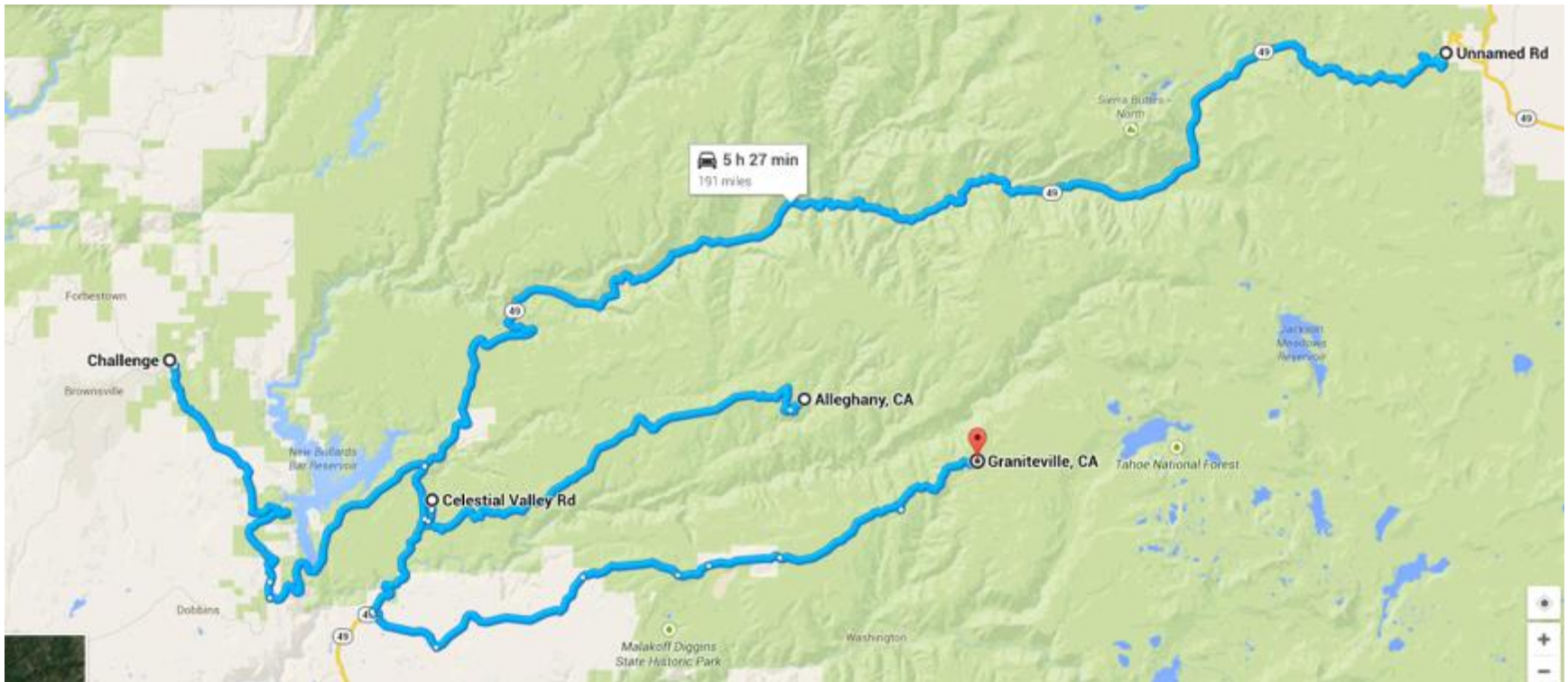
CREATE JOBS



WHY DOES YUBA COUNTY NEED A FOREST BIOMASS BUSINESS CENTER? RE-VITALIZE THE CELESTIAL VALLEY MILL SITE



WHERE WILL THE BIOMASS COME FROM?



- All forest lands within about one hour or less one-way drive time of Celestial Valley
- Includes public and private forested lands located within Yuba, Nevada, Sierra, Plumas, and Butte Counties

WHAT KIND OF FUEL IS NEEDED?

- Clean wood chips of a mostly uniform size



- Small diameter logs (chipped on-site)



WHO COULD SUPPLY THE FUEL?

- **Private timber companies** (e.g., Soper-Wheeler, Siller Bros., CHY Co., Robinson)
- **National Forest** timber sales (Tahoe and Plumas)
- **Small operators** (utility contractors, CalTrans, chipping contractors, Fire Safe Councils, community members)
- **Third party biomass suppliers**



WHAT KIND OF POWER PLANT WILL BE BUILT?

- Small scale
(3 MW_{net})
- Combined heat & power (CHP)
- Direct combustion boiler steam turbine technology



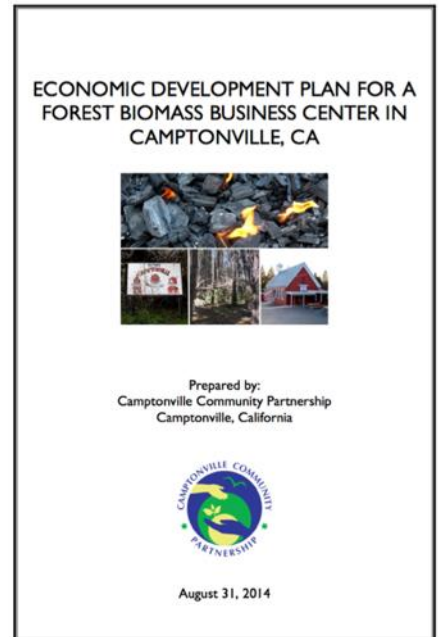
WHO WILL USE THE ELECTRICITY & THERMAL ENERGY?

- Power Purchase Agreement with PG&E
- Thermal off-take agreement with co-located business:
 - Seasoned firewood
 - Heat-treated pallets
 - Animal bedding
 - Poles
 - Greenhouse
 - Data center



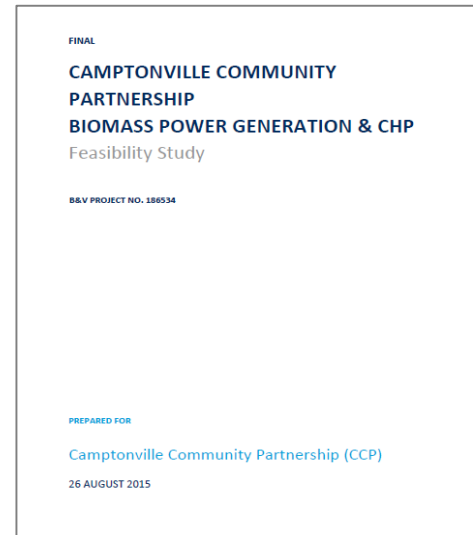
PROJECT HISTORY

- 2010: Yuba Foothills Biomass Feasibility Study
- 2013-14: National Forest Foundation Grant
 - Outreach and capacity building
 - Formation of Steering Committee
 - Economic Development Plan



PROJECT HISTORY CONT'D

- 2014-2015: Pacific CHP Technical Assistance Partnerships
 - Evaluation of potential co-located businesses
 - Third party review of feasibility study
- 2014-2015: Sierra Nevada Conservancy grant
 - Site specific feasibility study
 - Outreach and education



CURRENT WORK

- 2014-2017: Sierra Institute's Rural Community Development Initiative Grant
 - Technical and legal assistance
 - Peer networking
- 2015-2018: USFS Wood Innovations Grant
 - System Impact Study
 - Site plan
 - Conditional Use Permit/CEQA
- 2016-2017: NFF Community Capacity Land Stewardship grant
 - Outreach and education
 - Build capacity for co-located businesses
 - Select project developer
 - Establish ownership model



CURRENT WORK CONT'D

- 2015-2017: Yuba County Water Agency
 - Financial feasibility
 - Targeted Brownsfield Assessment program
 - CEQA documentation
 - Grant writing
 - Capacity building

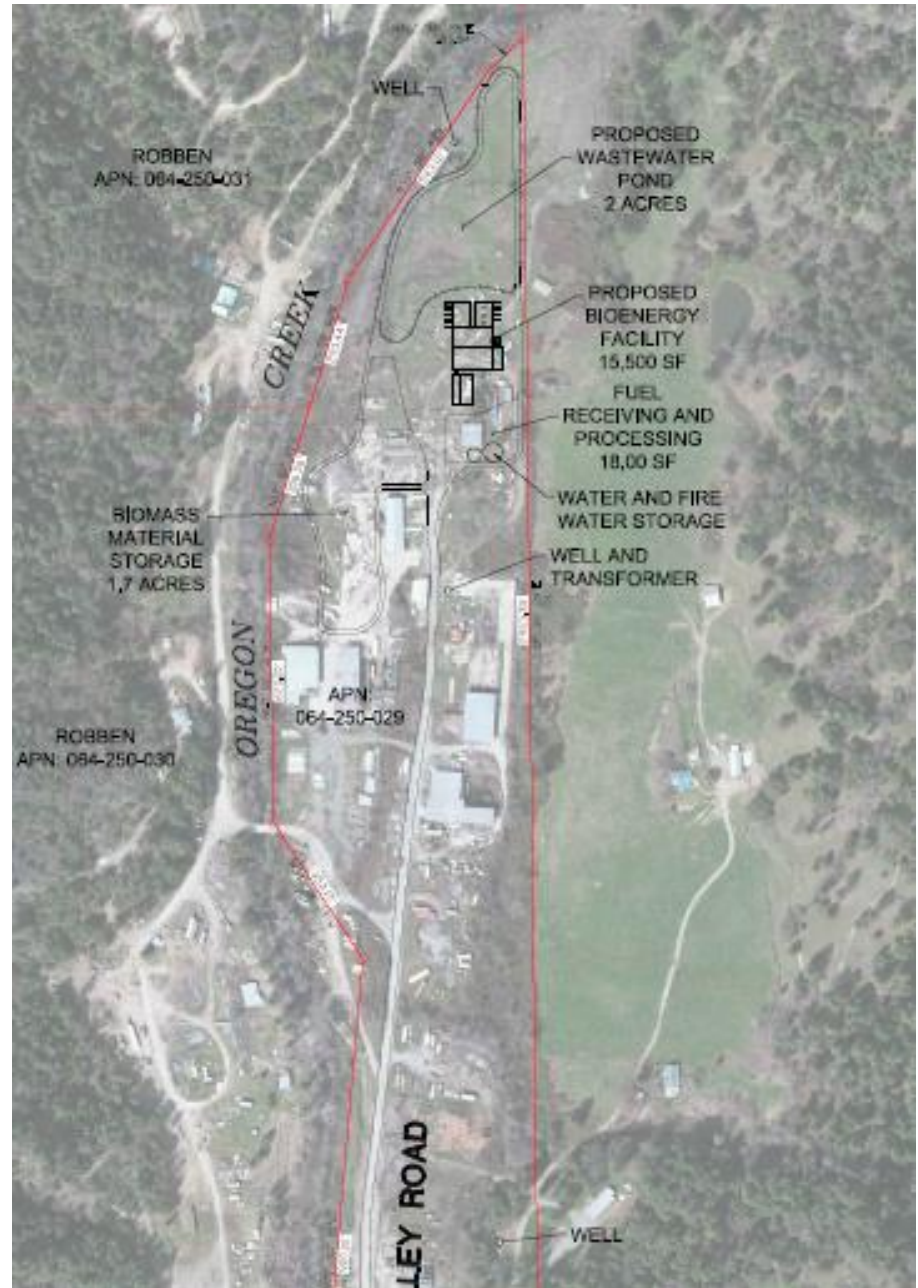
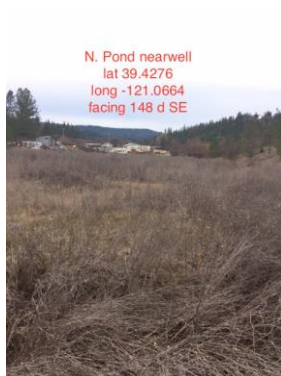
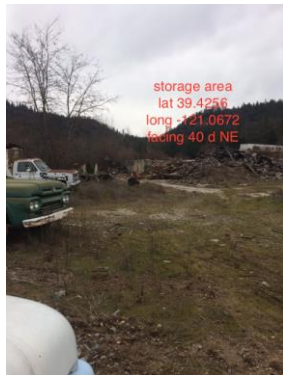


GRID INTERCONNECTION

- Original SIS \$5.3MM + COO \$5.3MM = \$10.6MM
- Revised SIS \$3.5MM + COO \$2.9MM = \$6.4MM
- Technical & policy changes

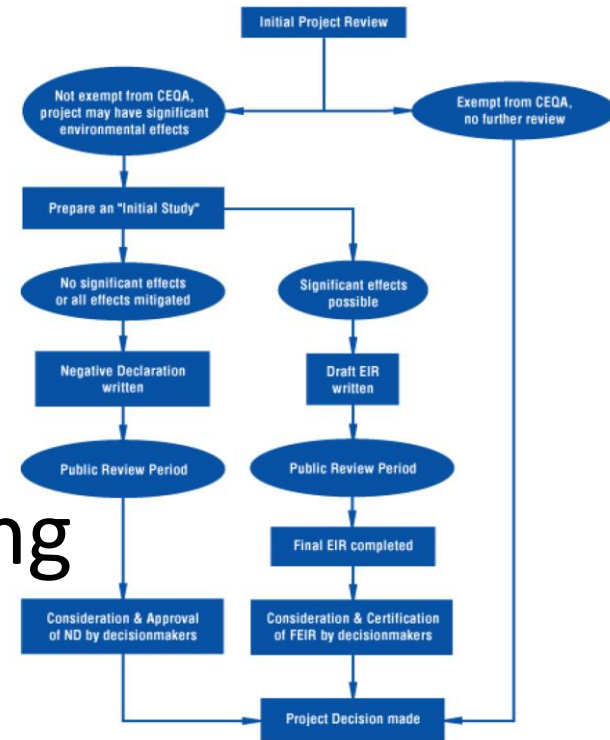


Bioenergy Site Layout



PERMITTING IN YUBA COUNTY

- Conditional Use Permit Application
- CEQA (Mitigated Negative Declaration)
- Public review
- Planning Commission meeting
October 18

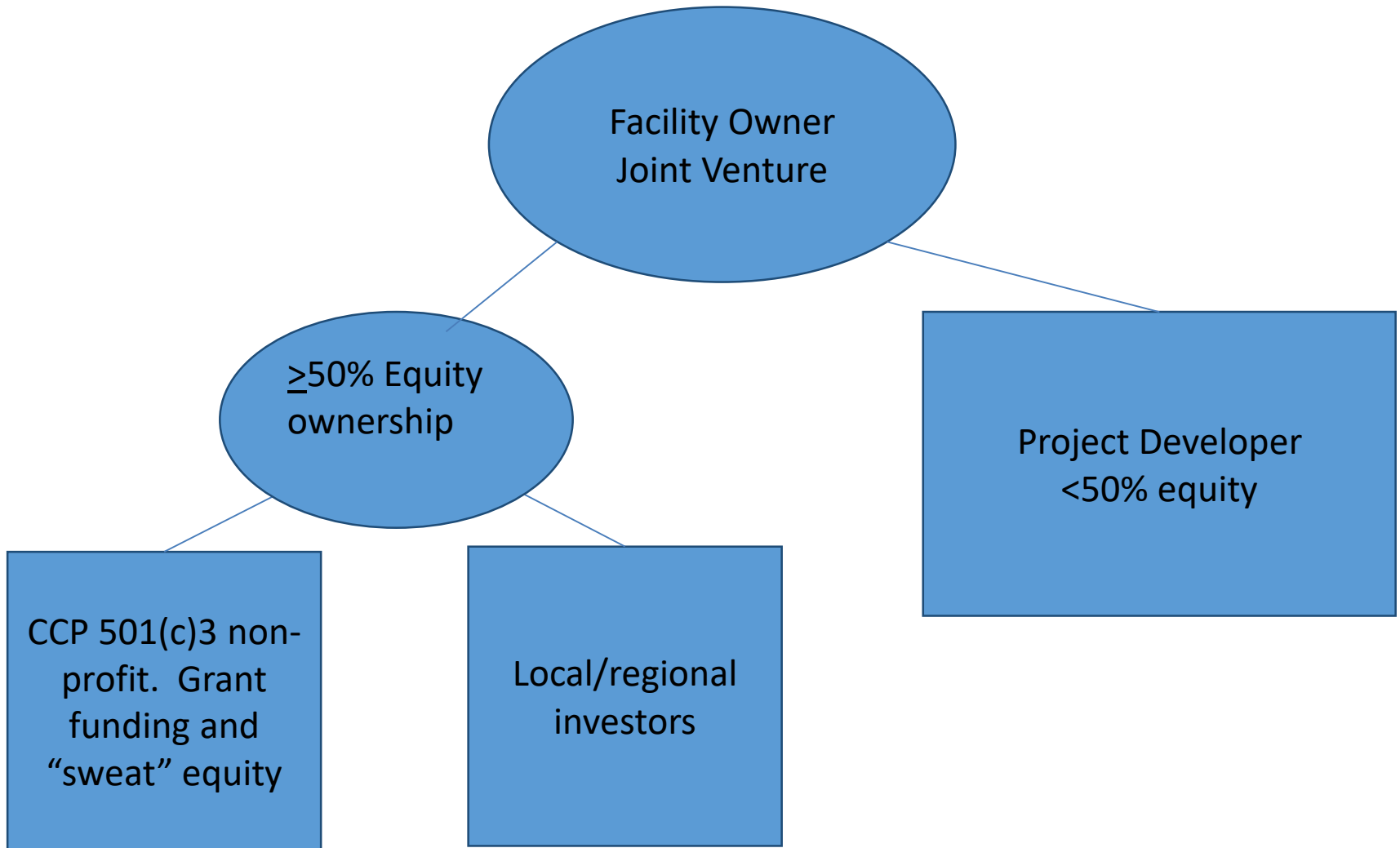


PROJECT DEVELOPER SELECTION

- Developed a list of prospective developers
- Drafted and advertised RFQ
- Evaluated responses
- Conducted interviews
- Solicited community input
- Selected a developer
- Repeat!



OWNERSHIP STRUCTURE



PENDING WORK: EPIC GRANT



\$4.9MM California Energy Commission grant award

Integrate a conventional and proven power generation technology with advanced emissions control hardware and a state-of-the-art low water use condenser.

1. **Multi-Pollutant Catalytic Reactor (MPCR)** - significantly reduce NO_x, CO, and VOC emissions
2. **Direct Contact Condenser** - significantly reduce water consumption required for biomass power generation

PENDING WORK: WOOD INNOVATIONS GRANT

\$249,949 US Forest Service grant award

Late stage developmental tasks:

- Fuel specification
- Project-side engineering
- Construction and operation permits
- Selection of EPC contractor
- Community outreach



FBBC NEXT STEPS

- CUP/CEQA
- Enter Bio-MAT queue → Power Purchase Agreement
- Ownership model and legal entity
- Site clean-up
- Fuel procurement strategy and contracts
- Finance plan
- Co-located businesses
- Implement EPIC grant
- Implement WI grant
- Pre-development activities

PROJECT PARTNERS & SUPPPORTERS

- Yuba County Watershed Protection and Fire Safe Council
- Yuba County BOS
- Yuba County Water Agency
- Yuba-Sutter Economic Development Corporation
- University of California Cooperative Extension
- USFS Tahoe NF & Plumas NF
- Sierra Nevada Conservancy
- National Forest Foundation
- Center for Sustainable Energy
- Sierra Institute for Community & Environment
- Statewide Wood Energy Team (SWET)
- Biomass Working Group (BWG)
- Camptonville Community
- Camptonville School
- Camptonville Community Services District
- UC Davis - California Biomass Collaborative
- Nevada County Biomass Task Force
- Fire Safe Council of Nevada County
- Private timber industry
- Bear-Yuba Land Trust
- South Yuba River Citizens League
- Yuba Watershed Institute
- Forest Issues Group
- Sierra Forest Legacy
- Senator Jim Nielsen
- Assemblyman James Gallagher

THANK YOU!



<http://sites.theccp.org/fbbc/>

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