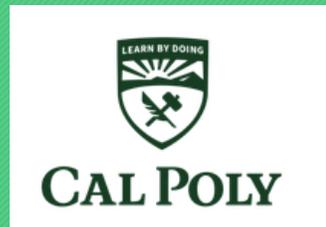


California Clean Biomass Collaborative

Dr. Mike McCullough

Agribusiness Department, California Polytechnic State University



Mission Statement

The Clean Biomass Collaborative exists to identify technically and economically feasible and sustainable strategies to achieve a near-complete phase-out of agricultural burning in the San Joaquin Valley.

The Collaborative provides a forum for key stakeholder groups to identify and overcome issues inhibiting deployment of advanced bioenergy projects, and to communicate resulting options and benefits.

We believe representation across all stakeholder areas is vital to ensure transparent evaluation of all alternatives



Guiding Principles

- 1) Is results-oriented,
- 2) Values fair representation among stakeholder groups,
- 3) Operates transparently,
- 4) Practices civil behavior,
- 5) Is focused on the nexus of science, policy, social justice, economics, community, and the environment while being mindful of the need for compromise and intersectionality.

Core Members

The Collaborative is composed of core members representing five key stakeholder areas in the San Joaquin Valley:

- Agricultural production
- Biomass industry
- Government
- Environmental justice organizations
- Research and academia

Background

Nearly all agricultural burning in the San Joaquin Valley will be phased out by January 1, 2025

In preparation for this and in accordance with recommendations by the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) and California Air Resources Board (CARB), the California Clean Biomass Collaborative is tasked with identifying and evaluating alternatives to agricultural burning.

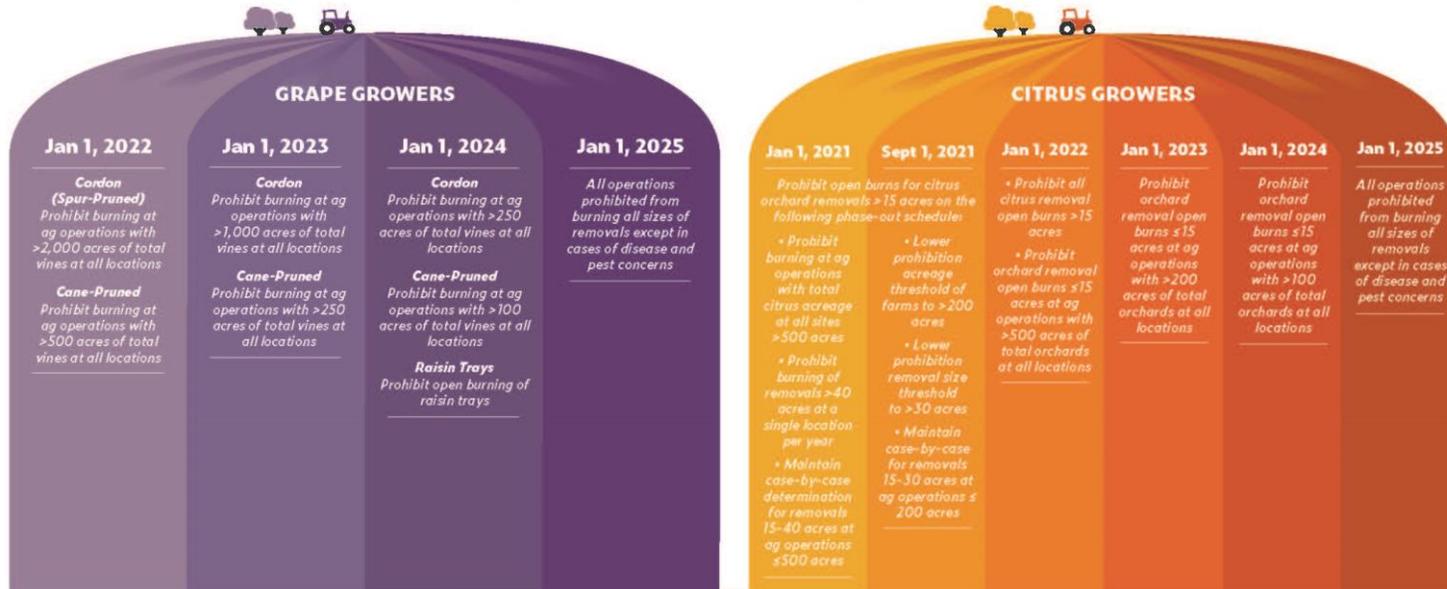
Background

- In 2005, SB 705 strictly reduced agricultural burning in California's San Joaquin Valley
- SJV Air Quality Control District has prohibited burning from a majority of agricultural crops
- Until 2014, restrictions reduced ag burning by 80%
- Loss of state incentives eliminated biomass plants since 2014
 - Over 20 plants in 1980s, down to 5 plants today
 - Significant impacted transition

Source: SJVAPCD June 3, 2021 presentation: *Supplemental Report and Recommendations on Agricultural Burning*

Prepare for the...

Phase Out of Open Agricultural Burning in the San Joaquin Valley



Incentive Funding is NOW AVAILABLE

CROP TYPE	Chipping <u>with</u> soil incorporation	Chipping <u>without</u> soil incorporation on-site	Chipping with off-site beneficial reuse
Orchards	Up to \$600/acre	Up to \$300/acre	Up to \$600/acre
Cane-pruned vineyard	Up to \$800/acre	Up to \$500/acre	Up to \$800/acre
Cordon-pruned vineyard	Up to \$1,300/acre	Up to \$1,000/acre	Up to \$1,300/acre

ADDITIONAL \$100 PER ACRE FOR SMALL AG OPERATIONS LESS THAN 100 ACRES

Chipping Equipment Funding available on a limited basis for existing chipping contractors and agricultural operations interested in expanding their fleets

Please note this is a summary of new phase-out requirements. Please visit our website for full details on existing requirements and information regarding the District's smoke management system.

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Background

- Many value-added alternatives exist to agricultural burning
- Adoption revolves around a few key areas:
 - Biomass removal (especially in the case of vineyards with metal trellis systems)
 - Removal equipment inventory (currently large State investments)
 - Restrictive statutes/regulatory barriers
 - A coordinated supply chain
 - Financial support (the assumption of risk in a startup)

Biomass Supply Chain Focus Areas

Biomass Inputs

- Vineyards
- Nut Orchards & shells/hulls
- Citrus Orchards
- Etc.

Technologies

- Pyrolysis
- Gasification
- Whole Orchard Recycling
- Composting
- Etc.

Outputs

- Energy
- Fuels
- Biochar
- Compost
- Etc.

Capital

- Private equity
- Federal/State funding
- Etc.

CCBC Expectations - Overall

Collaborative charts the path toward a biocarbon economy with a clear priority on stimulating clean, sustainable markets & policies to that end.

Develop a list of short-term biomass options that can be utilized in California and potentially incentivized by the State of California.

Identify best opportunities for removing agricultural biomass in the SJV with the lowest environmental costs and highest socioeconomic benefits.

Converge on a set of deployable and economical solutions that provides stakeholders with sustainable and environmentally sound options for use and/or disposal of agricultural wastes.

CCBC Schedule



Planning for regular (bimonthly) meetings over 2022 to discuss each focus area



Spring Symposium



Technology demonstrations and site visits

CCBC Output

- White paper outlining a path forward for agricultural biomass
 - Focus on initial needs and a sustainable future

Thank you,
Questions?

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