



CAPITAL REGION
CLIMATE READINESS
COLLABORATIVE

Biomass and Beyond

November 20th

Folsom Community Center

- **Intro**

- Land acknowledgment
- Mitigating climate impacts and building career pathways in the region
- Introduction to VV
- Opportunities of biomass utilization is relevant across impact areas of VV

- **CARB and Sacramento City Council Member: Eric Guerra**

- “In our role as council members we serve as members of air districts”
- “I grew up as a farm worker in Yolo county, we know the impacts of poor air”
 - “The impacts of air quality were impacting everyone”
 - “Cost, long term health effects were impacting everyone”
- Center today’s conversation on the need for public health
 - “Without water, food, and air life cannot exist”
 - How we manage our fuels - biomass, this effects these 3 factors of life
- One forest fire can blow away the work put into the landscape
- Nut farmers options when it comes to pruning have become limited
- Issue of food security, cost of maintaining our agriculture resources are becoming tougher and tougher
 - Farmers are pulling land and it is becoming fallow
 - Land becomes cheaper and is now at risk of development
 - Makes infill development less likely
- Not look at air quality as a myopic point of view, biomass allows us to protect our forest so we can avoid these major, intense, hot forest fires that create flash foods and impact ability to grow on land
- What would be a cost, pulling out wood, can now be used as a fuel
 - Avoid the use of diesel trucks
- If we can use this technology to help farmers reduce this cost, help them continue to farm, we can then maintain affordable food prices, maintain the work for our workers, and improve air quality
- “What’s exciting about this conference is we are looking at innovative ideas, combating myths”

- Martin Twer (The Watershed Center) - Biomass 101
 - Watershed center began when local sawmill went out of business
 - A lot of folks with no job, but had expertise, were wondering what comes next
 - Why Biomass Utilization?
 - It is organic matter than can be burned, gasified, or turned into fuels
 - Animals, plants
 - Becoming increasingly larger component of our circular economy
 - Farmers and ranchers have known this - you don't just throw stuff away
 - "If you can't grow it, you have to mine it"
 - Reversible too, we can grow what we were mining
 - Source of biomass: Trees, energy crops, agricultural wastes, algae, landfill waste
 - Depending on what you put in, there's a different process to take in energy
 - "Dry" materials and "wet" materials
 - Depending on consistency of material that is where it will go
 - What can be made out of biomass products:
 - Electricity generation, heating/cooling, renewable natural gas, transportation fuels, and hydrogen production
 - Biomass has been 5-6% of in-state electrical generation
 - Some renewable energy is coming from outside of CA
 - 2021 there was a forest biofuels working group trying to figure out different pathways that exist for forest biofuels for energy use
 - Digestors are more or less located in the northern portion of CA
 - Opportunities and Challenges for Biomass Utilization
 - There are variety of efforts going to move this ball forward: policy,
 - How else can we use biomass instead of burning it and creating air pollution?
 - In debate between biomass, they have different rationals (air and solar are dependent on external factors) - biomass is just there
 - How can we reduce emissions from existing powerplants and new ones?
 - Combustion pathways
 - How can we improve what we have and keep this facilities going?
 - There were once 200+ sawmills, some are still there with permitting and facilities that can be used
 - There are wide variety of products that can be made out of wood
 - There is more that energy that can be made from woody residue
- **Eric White: Facilitated Q&A**
 - "We've come a long way over the past 5-10 years?, where do you see biomass in 5 years"

- “It’s moving forward, sometimes 3 steps forward and 1 back. We are still learning a lot. Technologies are being developed elsewhere (mainly Europe). Let’s bring it in and run it in CA”
 - “Regulations: being open minded. How can we improve on certain things”
 - ‘I think it’s growing, some of the charts show the decline in biomass utilization. Other forms of energy don’t help the forest”
 - “What happens in the Sierras impacts people across CA”
 - “Forest management is expensive”
- “I’ve been following this as a member of the Sierra Club, engaged in discussion of controversy of bi-products of production, where are we in terms of not releasing chemicals into atmosphere during processing stage?”
 - “Some of this comes back to, what is the alternative”
 - “There are uncontrolled processes, we don’t know the chemicals of those (fires, floods, etc). There will be some emissions, yes, but we have much better control and counts of these emissions”
 - “Data has shown emission numbers between pile burn and biomass utilization” - Placer Air Quality data
 - “We cannot completely eliminate emissions from biomass processing”
- “There is a large difference between large scale vs small scale facilities. How do we prevent new facilities from being trashed by community opposition?”
 - “Education, events like this. A lot of negative feedback comes from forest wars of the 1980s, concerns of clear cuts. Central Valley facilities are improving what is technologically possible.
 - “We can move plants into the forest, community scale”
- “How is the community around you taking it? In Stanislaus county the communities there are rightfully so concerned about these technologies because of the emissions. There are large reductions compared with open burning. Yes, education. How have you faced the community in the Sierras taking in these communities?”
 - ‘If they are willing to listen, I am happy to talk to them about it. It comes down to economics, things cost money. These landscapes are huge - massive amounts of materials, we need to do something with this material”
 - “There is a perception that these facilities are not controlled to the maximum extent they can - this is incorrect. Biomass facilities are not massive, smoke stack buildings. We have technologies for small scale, community biomass processing facilities.
 - “ A lot of what we talk about is in the central valley and foothills, but a lot of people are in the Sierras. It comes down to education”
- “Can you go a little deeper on the economics of using biomass?” “We are seeing prices too high for the economics to work, it’s close. What is your opinion on if innovation will get us there? Ideas on how to make things more efficient, maybe scaling up? Does there need to be some sort of economic policy?”

- “As we have nurtured regional circular economy efforts, we have worked with partners to attract industry as part of circular economy”
 - Regional and state sector prioritization of circular bioeconomy
 - “We have a key opportunity to support bioeconomy as a growing sector”
 - “Create dedicated pathways for greenwaste to end in bio-based products”
 - “Very important to align with CA state carbon goals”
 - Embedded in workforce development

- **Kerri Timmer - Placer County**
 - Headwaters are forested, great need of forest management and wildfire reduction
 - Reduce sedimentation
 - Partnership (CALFRAME)
 - 5 pilot projects to improve supply chain logistics. Especially long-term feedstock
 - Working across counties with forested eastern halves
 - “Fewer and fewer places to take biomass”
 - For those of us aiming to remove fuel load/ wildfire risk biomass ends up on the ground (not ideal), landfill (hideous waste), or pile burn. Pile burning is difficult to do and still puts smoke in the air
 - Placer and PCWA have launched product to evaluate the potential for creating a hub that can connect those that create material with those who want the material to create something out of
 - Research available through PCWA website
 - Through research has found there is interest in hub
 - Interest in hub working beyond contract piece
 - Has found biomass potential
 - A joint powers agreement or authority is where they have landed
 - They are different in nature
 - Authority creates separate entity
 - “What we think will likely happen is we will probably start with a joint power agreement, work together informally, build trust, etc. and then if there's appetite, we would look at creating a separate entity. That entity takes on the risk, instead of counties and districts taking on risks.

- **Elizabeth Betancourt: Dept of Conservation**
 - State in breaking barriers in the silos folks have been in for years
 - “The point of biomass utilization is not the products, the point is forest health”
 - Existing programs at State
 - BioMAT and BioRAM
 - SB 1440: need to purchase biomethane as partial source
 - CARB Clean fleet mandate

- LCSF - new standard was voted on last week for woody biomass biofuels
 - Planning:
 - Scoping plan (CARB)
 - Comprehensive report on H2 (SB 1075, CARB)
 - ARCHES Hydrogen Hub - DOE award
 - Draftwood utilization strategy (Wildfire and Forest Resilience Task Force)
 - Needs associated with wood utilization
 - Looking for ways beyond state funding for biomass \
 - Procurement mandates
 - Partnerships with tribal leaderships
 - Build capacity with tribal partners
 - Public infrastructure investments
 - CEQA streamlining
 - Old sawmill sites
- **Panel Discussion**
 - “What are the biggest opportunities and challenges for new and existing biomass facilities?”
 - CEQA streamlining - CA known as a hard state to do business. In turn, losing businesses that are needed for biomass industry
 - Having benefits of communities with biomass facilities be known worldwide to gather funding for new market development
 - “The challenges: how do we make sure these great innovations get funding?” - making sure there are long term contracts. “How do we make our projects appealing for venture capitalists?” - we need to attract venture capitalist in this region
 - “What could be done at the federal level to support new and existing biomass facilities?”
 - Tax incentives
 - Tax credit
 - Bioeconomy regions
 - There is a significant gap between getting material out, with the revenue that could be gathered from processing
 - We do not value the outcomes of getting materials out
 - We do this to make forest healthier
 - Local level - the importance of the local voice. CPRG priorities identified by state. Because of local voice in bioenergy CARB was allowed to apply
 - “Local entities that have catapulted projects?”
 - “We wouldn't be here without Stanislaus County funding?”
 - County wanted to know what could be done in county
 - Key challenges were identified: air pollution, half of population does not make ends meet.
 - How can we expand opportunities? - county
 - Capitalized on counties' desire for change

- “What would be the one big prediction for the biomass industry 5 years from now?”
 - “ I only see this growing, this answers so many needs and questions we have. \$3.1 billion is spent on public health from fires - CARB found this date . Internalizing externalities that have come to the climate, we need to change this dynamic. Biomass economies need to be local
 - Bioeconomy - climate change, local economies, (multifaceted benefits)
 - ‘I’d love for the state and feds to backstop on their commitment” There are funding issues to reach desired goals. There’s not enough staffing to support partnerships that are being developed. Needs to come from top down.
 - “One prediction, 50% of airlines using biomass fuels. We will need to do a lot of great groundwork”. We need to crack commercial scale of current energy industries
- **Open Audience Q&A**
 - “Seems like the big challenge is how do you get biomass from ag or forest to the site? Many of our communities have old railroad tracks, anyone in the state using railroad tracks?”
 - Sierra (something) railroad in Tualamaine county transporting biomass through rail
 - “We need infrastructure to support this growth - using rail system is primary. Running the rails on biomass or hydrogen”
 - “I’m hearing that everyone needs a lot of funding, CA is paying for a lot of programs. Does it make sense to prioritize CA projects over out of state?”
 - From the state’s perspective - there’s a stick because of interstate commerce laws. “Exporting values of climate resiliency across the world”.
 - Specifically in LCSF guidelines include a stipulation that woody biomass must be sourced sustainably
 - Need to match CA forest management rules, some of strict in nation
 - Carbon tax on biomass transported from outside of state - preference for CA produced biomass
 - “Much of our forested land is US Forest Service, have restrictions on technologies that can be brought in to limit trucking. How can we work with feds to break down barriers on federally owned land?”
 - El dorado NF has been able to engage with air curtain burner
 - Group from Placer county bringing regional advocacy voice. It makes sense for forested county (NF managed) as testing sites for technologies; model for others.

- One service with aggregation hub is leasing technology to move around different forest
- “Keep engaging our local communities. Lots of projects fail when they do not engage with the community from the start. Need to hear community needs”
- People talk about these things in different spaces, not always in a center with speakers and microphones, but over food and coffee
- “If you need help in your community getting a project going, the State is here to support”. The state may not have always been the best supportive, but they want to help
- **Workforce Panel: Chris Quijano, Justin Britton, Kerri Timmer, & Becky Rowe**
 - Kerri Timmer: Project manager for placer county wildfire risk project at headwaters
 - Looking at forest management in water supply concepts
 - Chris Quijano: Operate biomass plants
 - Becky Rowe: California Community Colleges
 - Justin Britton: Cal Fire Forester
 - Calfire workforce and business development grants
 - “What are key occupations and skills needed for the work you do?”
 - Strict training path for professional forester . In managing a workforce development grant program, what I see the most challenging is folks feeling highly skilled positions in manufacturing sector - Justin
 - Biomass, the thing that really comes up is the transportation piece. If you find funding for initial stages, finding drivers to move materials is an issue. Shasta college looked at expanding off the books CDL training program. Log truck driving specific training. What will skillsets look like that build upon each other? Cross industry skillsets - Becky
 - “In the power generation industry, we used to get 80-90 applicants per job pre covid, now getting 12-15”. Working in biomass production is not a clean job. Looking at Cal Maritime program (facilities operation). Bringing STEM back into schools. Reaching out to technical schools to get people in. Have tours, show people how their phones are running on power from plants.
 - Not enough drivers. Some people cannot legally drive. The hardest part, from Project manager point of view, is field operator work. It is challenging getting people in this position. Vast field of people with different subsets” - Kerri
 - “What are the current challenges facing the biomass industry, what is your agency doing to address them?”
 - Lack of vendors to go after bids. There are a number of vendors but they may not have equipment to take on projects. Issue with the landowner (Forest Service) have project utility level, based on calculus, create what level of activity a vendor is able to do on any given day. Have had so

many restricted days that vendors are leaving projects. Project that was supposed to take 5 years is going to take 8+ years. One of the main problems is the forest service does not indemnify staff who is able to make the decision on what is allowed on any given day. Individual would be responsible for prescribed burn going beyond boundary; individual is held accountable - kerri

- The biggest challenge is long term contracts. Lots of plants are shutting down. 5 out of 21 currently operating will likely shut down. Industry is shrinking, what are we going to do with materials? There needs to be a point where we can sustain operations of powerplants until the next wave shows up. Why would people want to work in an industry that is disappearing? As Californias, we need people working in biomass plants we don't have another answer at their scale" - Chris
- Looking to expand the talent pool. Traditionally, this industry is male dominated. Technology has reset the scale and removed some of the physicality of the work. Population densities are not in rural forested communities, expanding awareness to densely populated areas. All the funding for workforce development is great, but without some sort of market activation to address long term problem, short term solutions are setting people up for failure" - Becky
- "Half of what we do in grant program is support market development". \$125 million in grants have been invested" - Justin
- "Projected vision for the industry?"
 - The industry is growing. Actively attracting workers" - Justin
 - We will continue to expand awareness across the state and change dialogue around what these jobs really are, align their values with the work - Becky
 - Technology will pass the torch on - Chris
 - Aggregation efforts will bare fruit and long-term investments will provide more facilities - Kerri
- Q/A audience
 - "Not biomass, but kind of is. We are not using all the tools in our tool box. Why are we not using more animals?"
 - Placer county is using goats in addition to prescribed burning
 - There needs to be more sunlight hitting forest floor to have food for animals
- Closing Statements
 - Cross section of business, government, and community
 - Leave us with some thoughts
 - Need for continue education and coalition building
 - Not all facilities are big smoke stacks, there are new technologies that are really exciting
 - Biomass has not seen subsidies

- Tribal partnerships
- \$3.1 billion public health cost from wildfires
- There's so much more than just work in the field, careers in different areas
- Renee:
 - Economics of biomass utilization
 - Further assignment of VV
 - Proper evaluation of emissions vs not removing forestry products
 - Importance of investment and policy leverage
 - I.e solar industry
 - Regional plan for "We Prosper Together" found 4 priority sectors, one of them working lands
 - Biomass would benefit 3 of our local rural counties
 - \$9 million in predevelopment funds for projects developing careers in this sector
 - Action is needed, not just talk
 - Won't be the last time hearing from VV