



## Rural Community Development Initiative Workshop *Rebuilding Capacity and Wood Utilization in Forest Communities*

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*May 16 and 17, 2017, Embassy Suites Sacramento Riverfront*

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### Synopsis

On May 16<sup>th</sup> and 17<sup>th</sup>, 2017, the Rural Community Development Initiative (RCDI) met in Sacramento, CA. During this workshop, participants discussed topics of importance to communities working on small scale biomass utilization efforts. Session topics included the BioMAT program, updates from the CA Tree Mortality Task Force, progress updates from RCDI groups, presentations on technology, finance, brownfields cleanup, and opportunities beyond bioenergy, and a discussion of the next steps for the RCDI project and participants. The workshop was held in collaboration with a final meeting of Humboldt State University's Waste to Wisdom research effort, including the organization of a final session where communities were able to share implementation challenges with researchers and developers.

### Attendees

Steve Becker  
Elissa Brown  
Lauren Burton  
Eric Byous  
Bill Carlson  
Dave Carter  
Christiana Darlington  
Melessia Downham  
Andy Eggink  
David Featherman  
Jennifer Flores  
Coreen Francis  
Debbie Franco  
Chris Friedel  
George Gentry  
Lori Gilbert  
Nick Goulette  
Steve Haze

Bruce Hilbach-Barger  
Claire Jahns  
Evan Johnson  
Jay Johnson  
Patrick Koepele  
David Konno  
Jonathan Kusel  
Cathy LeBlanc  
Ariel Lee  
Angie Lottes  
Dave Martin  
Dan McDonald  
Doug McKeller  
Luis Melchor  
Tom Miles  
Regine Miller  
Le-Huy Nguyen  
Kyle Palmer

Valdek Parik  
Justine Reynolds  
Kyle Rodgers  
Norma Santiago  
Mark Severy  
Todd Sloat  
Steve Smallcombe  
Marjene Streeper  
Camille Swezy  
Elliott Vander Kolk  
Erik White  
Kerry Wicker  
Sherry Wicks  
Steve Wilensky  
David Wilkinson  
Mark Yargas

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## Day 1: Tuesday, May 16, 2017

### Bioenergy Case Studies

#### Camptonville Community Partnership, Regine Miller

- Camptonville is developing a small scale 3 megawatt combined heat and power facility on an old sawmill site in east Yuba County. Biomass will come from USFS and private lands from a driving distance of one hour or less.
- Project goals were established by steering committee with community input: viable model for biomass utilization, local employment, fire safe community, air quality, forest and watershed health, renewable energy, revitalize mill site.
- The biomass business center will focus on forest health, fire safe communities and local employment. Plan to use wood chips, and set up log sorting yard and shipping operation on site. Plan to export electricity to PG&E grid and sell heat to co-located businesses; deciding which businesses will probably be the biggest challenge for the project.
- Permitting: the site is zoned as agricultural and industrial, requires a special use permit for utility, needs CEQA documentation, needed to do a noise study
  - Expecting to go before Yuba County Planning Committee in August
- Current work: financial feasibility and targeted brownfields assessment program, waiting for landowner to clean up site, need to select a new developer (previous developer had to withdraw)
- Recently received a California Energy Commission EPIC grant!

#### Mariposa Biomass Project, Jay Johnson

- Last year the Mariposa Biomass Project (a 501c3) selected Cortus Energy to build their facility, which will be a packaged system from Sweden. They had originally selected a landfill site but the

county decided not to sell the property, so they bought a parcel of industrial land and have begun the permitting process, which has been the main focus since January this year.

- Site is very close to PG&E substation; one of biggest concerns is that neighbor ranches are worried about noise and traffic.
- Steep slope at the site has created issues for fuel storage, so they've hired an engineer to develop a grading and drainage plan; they will have to cut into hillside and put in retaining walls for storage.
- Looking ahead, the focus will be on filing the conditional use permit application, interconnect application, RFP for air permit consultant (need someone to look at transportation/construction emissions), Cortus wants to do a pilot test in Sweden, and are looking for a US partner.
- Challenges include public opposition (which hopefully won't be a problem, they've done extensive outreach), bad press, interconnect cost, and finding the right partners
- Received a USFS Wood Innovations grant last July and an EPIC grant in March 2017.

#### Yosemite Sequoia Resource Conversation and Development Council, Justine Reynolds

- North Fork Community Power Facility (and log deck) has gone through most of the permitting process and has begun construction. They received a use permit in 2013 and an EPIC grant in 2015. It will be a 2 megawatt biomass gasification facility with the biomass predominantly coming from the USFS. The main product is energy with biochar as a secondary product.
- They were approved for permits associated with construction for 1 megawatt, but haven't been approved or funded for the second megawatt.
- Tree mortality has created a need for additional storage for log deck.
- Lots of partners!
- Construction began last August-October (earth moving, concrete structures), grading was completed by December; construction has stalled since January due to weather; should be ready to resume in the next month and be completed in September 2017. They can then move into the research phase (testing different feedstocks).
- Had some challenges with construction on the site; a lot of stuff unearthed while digging.
- Feedstock sourcing and long term stewardship contracts are a current challenge; the system will require 16,000 bone dry tons annually. The gasifier requires a cubed chip with very specific dimensions.

#### Discussion

- Q: How much time is needed for construction?
  - Justine: It has been about 3 years since we were awarded a conditional use permit, it is mostly a question of financing.
  - Jay: 15 months to 18 months from funding to startup
  - Regine: Environmental assessments could alter timing
- Q: Who are you trying to set up long term stewardship contracting with and what are the benefits and drawbacks?
  - Justine: We need long term supply contracts with USFS and it has been a lot of work; it's difficult to compete with timber operations. We need to show that it's worthwhile and it's hard to prove until it's operational; there's a lot of material but it's difficult to transport it

- Q: Do you need contracts in place before you can raise the additional money?
  - Justine: Yes, financing is a lot easier if you have contracts (fuel supply, construction, power purchase agreement, etc).
- Q: Environmental issues for North Fork?
  - Elissa: North Fork Community Development Council has had a brownfield Revolving Loan Fund since 2002—the assessment and cleanup was a long process.
- Q: How much did it cost for site plans?
  - Jay: it costs \$10,000- 12,000 for a reasonable site plan
- Q: How are you reaching out to private landowners for feedstock?
  - Regine: We hold community meetings; the existing infrastructure is limited which is an ongoing challenge
  - Jay: One of our biggest sources will be CAL FIRE.
- Q: Are you expecting chipped biomass or logs?
  - Justine: We are providing logs and Phoenix Energy will have a contractor to do the specialty chipping
- Q: What do you expect to generate in terms of chemical byproducts?
  - Regine: Camptonville will produce 860 tons of ash annually; we aren't expecting a lot of contaminants; we can give or sell ash to a concrete mixer.
  - Jay: 1-2 tons per day of ash that we will send to the landfill for composting; 60 pounds per day of sludge that will likely to go to landfill (it's not expected to be hazardous).

## BioMAT Session

California Public Utilities Commission, Cheryl Cox

California Law Empowering Renewable Energy, Christiana Darlington

- Christiana has been providing technical assistance to RCDI communities with support from the RCDI project, and provided an overview of the state's SB1122 Bioenergy Market Adjusting Tariff (BioMAT) process.
- Key points related to the SB1122 process:
  - The queue is open, market depth has been reached, therefore the price is increasing.
  - Once someone has struck at a given price, at least five projects must be in queue for the price to rise again.
  - If all of the megawatts offered in one auction period are fully subscribed, the price will decrease for the next auction period.
- In addition to explaining the auction process, Christa provided an update on major issues dealing with interconnection:
  - Interconnection costs up to \$300,000 are reimbursed over a 5-year period after entering into a power purchase agreement (PPA).
  - A need for transmission level upgrades was not identified during the development of the BioMAT policy and has led to much higher costs than anticipated.
  - She hopes to make the point to the CPUC that reimbursement by utilities result in lower costs for ratepayers over time than if project developers waited for a higher price for a PPA in the event they were responsible for these costs.

- Important to note the cost of ownership issue, which can be an extra 20% on top of the listed total for interconnection costs.
- Questions remain about what would happen if the SB1122 auction goes above the \$197/MWh. Officially, the CPUC will conduct a program review at this point.
  - There was a suggestion that the implementation of AB 1923 (which would authorize biomass facilities to be eligible for up to 5 MW provided they do not deliver more than 3 MW to the grid at a time) might help avoid some possible problems that could stem from this program review.

## Utilization Case Studies

### Fall River Resource Conservation District, Todd Sloat

- The project originated out of a CA Department of Conservation grant that identified an issue with forest health. They connected with Burney-Hat Creek Community Forest and Watershed Group (BHCCFWG). Burney has two sawmills, each with a bioenergy facility. Would like to add 3-4 new 3 MW facilities in the area.
- Lassen NF had a lot of money to plan, but no longer can support project, and are also now using a collaborative process (BHCCFWG).
- In the 50 mile radius around project area, about 50% private land.
- A current issue is that the lack of facilities to purchase biomass dictates forest practices, so timber sales are structured to exclude biomass. It has been more difficult to find anyone to bid on biomass, even though they have infrastructure.
- It is easy to get discouraged and give up because of these ongoing challenges.
- Things have been moving very fast: after last RCDI meeting, they met an investor who invested in the project and did CEQA within a year. A feasibility study and System Impact Study have been completed. Recently awarded \$5 million EPIC funds.

### Calaveras Healthy Impact Product Solutions (CHIPS), Steve Wilensky

- CHIPS formed 14 years ago when a group got together based on stewardship and restoration principles. The motto was “doing good with wood.” CHIPS bought an old mill site after the region lost 22 mills.
- What followed was a series of unfortunate events:
  - Feasibility studies
  - Too much fuel, rendered prior investments moot
  - After the Butte Fire, millionaires who were invested in CHIPS instead put funding toward helping fire victims.
  - In the last five years, Calaveras County is on their 5<sup>th</sup> planning director and 4<sup>th</sup> public works director; the board has had 200% turnover, including two recalls.
  - Chairman of the board of supervisors said not to fund the project
  - Were also told by the Economic Development Corporation that they couldn’t be funded because “Indians were lazy”
  - Got administrative use permit, submitted 4 years ago, but new issues have arisen since
- CHIPS has \$1 million in agreements with 4 forests over the next five years, and multiple investors interested

- CHIPS is run by volunteers- people who are self-taught and have full time jobs but are very determined
- For groups thinking of getting involved: you can save a lot of time and money by getting advice from groups who have already struggled
- Visit their website, [Calaveraschips.org](http://Calaveraschips.org), for more information.

## Discussion

- Q: What about secondary products?
  - Steve: We are looking at manure and greenhouses; a lot of the staff come from Miwok communities and want to use greenhouses for cultural restoration projects.
- Q: Workers comp issues?
  - Steve: A few workers in a short time were stung by bees in the field and did not know they were allergic; the worker's comp was raised from 2 to 6 to 17 thousand dollars per month. It made it hard to raise wages, but we've managed to raise wages 2 dollars an hour.
- Steve: We employ 17 people on Eastern, 15 out of West Point, we have big contracts in June and think there will be 60 employed in July; we're the biggest employer in area, even without the plant.
- Christiana: Todd's project was the one that PG&E calculated cost of ownership and overshot by \$2 million, the TMTF pointed out that there was an error in the math, so get an electrical engineer and check your math!
- Q: Do you have any partnerships with USFS?
  - Todd: There are no agreements in place; already have an agreement for the facility from one logging company who does most of work on USFS land.
  - Steve: We have a Master Stewardship Agreement with the El Dorado and the Stanislaus, agreements with the Tahoe coming next month; working with the Collaborative Forest Landscape Restoration group and BLM and cultural sites with native crews; think we're in good shape with all the burn in the immediate vicinity but they want five year agreements.
- Introduction of other groups in room:
  - Bruce Hilbach-Barger, Round Valley Tribe
    - Got back the results of our electrical study and got an answer of no; there was another project in queue and were not eligible for second level; would like them to look at something smaller scale (.15 and .5 mw).
  - Sherry Wicks, Foresthill Community Development Council
    - Feasibility study said 1-2 mw, but then there was a fire and there was not enough feedstock; need an update on feasibility to decide if it's possible and where to go from here.
  - Mark Yargas, Idyllwild Forest Health and Energy Project
    - The project started with a fire in 2013, after the fire we organized a local conversation around issues and brought in a fire ecologist who came up with the idea to thin forest; got SWET funding, did feedstock analysis, in process of forming 501c3.
  - Jennifer Flores, Groveland Community Services District

- Groveland is a special district near Yosemite NP in the Rim Fire area; the National Disaster Resilience Competition targeted them for a biomass facility and are looking at using the district as an in-between.

## Outcomes from Tree Mortality Task Force (TMTF) – Implications for Biomass Utilization

### Angie Lottes, CA Forest Biomass Working Group

- 6 BioRAM facilities have contracts as a result of the proclamation; important because it maintains infrastructure
- 4 BioMAT projects funded by EPIC grants
- Focus not on bringing down cost of interconnection estimates, but distributing the burden of remaining costs

### Claire Jahns, CA Natural Resources Agency

- TMTF allows us to focus geographically on high hazard zones (focus on health and safety, proximity to power lines, etc) designated by CALFIRE
- Forest Carbon Plan is a carbon storage strategy; finding uses and markets for biomass is critical for climate change goals, so what can the state do to support these projects? How can we turn this emergency into an opportunity for rural economies?
- Working group to develop recommendations to state on how to utilize material, advance forest health and carbon sequestration objectives as defined by Forest Carbon Plan, and develop rural economic opportunities.

### Evan Johnson, CalRecycle

- Co-chair of TMTF market development group focused on utilization of material for energy and other purposes (animal bedding, cross laminated timber, etc).
- CalRecycle is engaged because 20 million organic tons are in landfills; tree mortality is an agricultural and urban waste problem.
- Market development group to find alternative markets for material (as opposed to energy): work with counties to determine feasibility, identify new markets, identify and develop new tech, identify rules and regulations that block utilization, updates to task force, focus on collaboration.
- Found regulatory barriers (worked to establish waiver of standards), federal barriers (timelines to overcome are very long so won't be addressed by group), lack of transportation infrastructure, statewide procurement (Caltrans mulch, guardrail posts), looked at expanding markets (biochar, CLT).
- This group has fostered a lot of collaboration, and a lot of great work spawned outside of group that will likely continue.

### Patrick Nevis, Governor's Office of Business and Economic Development (GO-Biz)

- GO-Biz is very concerned with rural development.
- GO-Biz can help with:
  - Permit assistance, business investment services, small business advocate, international exports, IHubs (encourage entrepreneurship of rural business), tourism, film commission, cannabis entrepreneurship and public health.

- GoBiz provides tax incentives, California Competes tax credit program, I-Bank small business investor development bonds in rural areas, low interest loans to communities and non-profits for energy projects (specifically biomass), ETP training cost reimbursement for 200 hours of training for staff
- CalEPA Consolidated Permitting Program, CalGOLD (website to help identify permits)
- Lots of counties affected by tree mortality that are not involved in TMTF, get your county involved!

## Discussion

- Q: Can we develop a California-wide strategy?
  - Claire: The good news is that there are multiple funding streams, but they all have different timelines; CALFIRE made a table of all the opportunities; public funding is not going to be enough, and we can't always be reacting to an emergency, so how do we create markets?
- Q: How is California going to utilize cross-laminated timber (CLT)? How is the state going to permit high rise buildings?
  - To some extent it can be done already, especially public buildings that are below 7 stories.
  - CLT may not be appropriate for rural mills; the focus for rural communities is in smaller projects.
- Q: Can we create a group that is a combination of engineers and market researchers to help rural counties identify the best market for them? Because biomass facilities need to be co-located, what else can be done with the project to sustain rural revenue? What about using biochar for cannabis?
  - What is the market calling for?
  - Evan: There is a political will to capitalize on the tree mortality issue that could extend beyond this emergency.
  - Patrick: There is also an issue of getting people in urban areas to care about rural development.

## Technology and Project Development

Tom Miles, T.R. Miles Technical Consultants, Inc.

- Tom is a biomass technology consultant in Portland who designs everything from cookstoves to large biomass facilities.
- General bioenergy overview: by the 1960s we had biomass combined heat and power (CHP) facilities that are about the scale that we are looking for in these community projects. Today we have a lot of large systems, but not as many 1-2 mw systems. Recently we've seen systems for combined heat, cooling and power.
- Combination of fuel, design and a stable operation are key to biomass combustion. Fuel preparation is very important, must consider size and uniformity.
- Shared slides of different systems and talked about concerns for each. Some considerations for choosing a biomass system:
  - Some systems require absolutely uniform fuel.

- A lot of work goes into retroactively designing fuel handling systems, such as screening for oversized chips, so plan your fuel storage early.
- Watch out for ash composition!
- Microchips are wonderful, but aren't really affordable in rural areas.
- Torrefied wood is too expensive in most places.
- Does your project have the capability of making high quality, low cost biochar?
  - Lots of benefit to high value growers- cannabis growers love it!
  - But there are a lot of early disappointments with biochar.
- Make sure the technology has been tested for at least a year.
- Look at co-products- integration of energy with other processing is necessary.

## Discussion

- Q: What would be your recommendations for SB1122- a ten year or 20 year power purchase agreement?
  - Look at the reasons for downtime- is it technology or an issue of fuel quality?
  - There is technology that has lasted 15 years
    - Boilers are more reliable; there have been problems with gasification being implemented too soon.
- Q: Which technology choices are more forgiving in terms of fuel?
  - Boilers can be designed for high moisture and ash removal, though uniform fuel is still better.
- Q: What's your experience with plants in dealing with non-uniform chips?
  - Most efficient in California has been the spreader stoker grate
- Q: Should we pick a system based on the fuel we have in the region or create the fuel to meet the equipment specification?
  - It's really a compromise and the technology designer can accommodate a lot to fit what is available. It's not as much about the species as it is about form, extra material (such as rocks) to sort out, and fuel preparation that is needed.
- Places with high energy prices (such as Alaska or Kenya) are attractive for bioenergy until you realize the location is a factor in their high price to begin with, and will also present a problem for biomass.
- Q: What is a good ratio of run time to down time?
  - In the very small units some run 7-8,000 hours a year.
  - It's important to consider what is taking down the system, and how easy that problem is to fix.

## Financing and Business Development

### Northern California Community Loan Fund (NCCLF), David Wilkinson

- NCCLF overview: non-profit, increasing the financial resilience of community-based organizations, make socially responsible investments.
- Programs include Lending and NMTC, Consulting, Socially Responsible Investing, Policy
- Working in Northern CA to provide economic opportunity
- Capital can come from a variety of sources: foundations, banks, feds/NMTC, individual investors

- NCCLF's Wood Innovations grant overview: to assist biomass projects with creative financing strategies to capitalize their projects. Grew out of CA State Wood Energy Team (SWET)-funded white paper on leveraging creative sources of capital.
  - NCCLF met with variety of RCDI groups to get familiar with projects
  - Discussed financial structuring: What is the cost of your project? How to raise this money? What are the creative sources of capital?
- Keys to financing a project—should demonstrate:
  - Site control: leases, ownership, etc.
  - Cleanup issues resolved, Center for Creative Land Recycling a good resource
  - Preliminary engineering: civil work, including site surveys, site plan, infrastructure. How developable is your site? How much will it cost to develop site?
  - Entitlements
  - Pro formas—develop good solid prelim cost estimates. Put it into business plan to impress lenders/investors
  - Identify: what BioMAT price strike do you need to make project viable over a 10 year period?
- Grant opportunities
  - CEC Electrical Program Investment Charge (EPIC)—catalyst grant to get to finish line
  - Economic Development Administration: could trigger prevailing wage...use is for installation instead? for example
  - Community Development Block Grant-housing plan needs to be updated
  - USDA Rural Energy for America Program (REAP): not big enough
  - NCCLF catalyst loans?
- Equity is important—need some to apply for a loan. Project sponsors? Grants?
- Business partners are important, can bring money and technology to table
- Third party investors—wealthy, investing family resources in capital companies that look for good deals for their money.
- Tax Credit Equity
  - Investment Tax Credit—biomass could have qualified
  - Production Tax Credit—expired last year. New administration showing little interest.
  - New Market Tax Credits (NMTC)—still available. \$3.5b per year thru 2020. Designed for low income communities working for job creation.
    - Community Development Entities apply, then sell credits to investors. They generally select projects located in highly distressed low-income areas
    - Transaction costs are high
    - \$3M→\$2.28M
- Attracting an investor—incentives! Ownership? But still achieve goals of your project.

## Northern California Community Loan Fund (NCCLF), Dan McDonald

### Loans

- Underwriting—lesser known term. In a broad sense, underwriting is asking questions, finding out all the risks, etc. Lenders want to know that they are getting repaid.

- What is the borrower's ability and willingness to repay the loan?
- Risk mitigation: non-recourse is impossible to achieve.
  - Power Purchase Agreement takes a lot of risk out
- Underwriting the risk continuum (see slides): most lenders do not provide all three types of loans
- Underwriting project capacity: is it going to work or not?
  - Operating assumptions, including downtime and maintenance needs to be fully understood for the lender
  - Use stress test and underwriting rates to gauge sensitivity to changes in assumptions
- Underwriting borrower character
- Underwriting project capital—patient capital, seeking long term results, is most ideal.
- Collateral—in a rural area, not much value if the project fails.
  - More equity better than less to keep low value down
- Underwriting: economic conditions

## Discussion

- Rural communities—one big thing we have going for us is big chunks of money (grants). But can't offer a lot of collateral, etc.
- Groups need to always be thinking—what are your creative financing strategies?
- Idea of program related investments? Promote not just renewable energy, but all the co-benefits.
- We are living and dying by grants to do the pre-development due diligence.
- PPA is critical, but doesn't mean project will be successful to a lender. All the underlying assumptions need to be addressed.
- Grants + what business partner can bring—economics can get there. Risk will be there, but David is optimistic these projects are financially feasible.
- Dan, on lending side, sees the side of what can go wrong. Educate lenders so they can make an informed decision.
  - Really understanding the technology is very important for lenders
  - For example, Cortus is taking on that process of showing their technology works in the US. If successful, it will generate more interest from traditional lenders.
  - The hardest part is getting money for an unknown technology for an unknown success rate.
- Regine Miller: there are really significant financial factors that are unknown as we move forward. There is a lot of uncertainty! Hard to avoid
  - CCP and ownership model. Looked at what other projects have done. We're looking to project developer for securing that financing.
  - David—you're starting out with \$5M grant, and all the work that CCP has done is a significant investment. Debt financing? Maybe the energy companies with a bigger balance sheet.
  - Dan: offering a balance sheet has recourse. If the project fails, they take the hit. If you can get Direct Public Offering capital, sub some of that for the loan (different than investor equity), then that's significant right there. It's hard because we don't know what the rates are going to be. Think through what's financeable.

- Claire Jahns: Can you work with California infrastructure bank (IBank) at all?
  - David: If the IBank is willing to loan on start up companies, it may help. In general, the ibank was set up to finance community driven projects in CA, so it's something that we can look at a little closer.
  - Dan: CDFI may be the most tolerant of risk. IBank doesn't want to take risk on start up project. That's the challenge, how to get those first investments so the rest can follow.
  - Clare J: make pitch to lenders on water/forest benefits. Impact investors need a pitch or two.
- Elissa: Can NCCLF take this on as an initiative? These relationships take time to develop.
- Dan: idea of first-loss-lender. If there's a loss, that first 25 cents for every dollar takes the hit, and takes a great deal of risk out of every transaction.
- Dave Martin: fuel supply agreements are important
- Tom Miles: how do you evaluate co-located businesses?
  - Dan: it could be another business that needs to be underwritten, add more risk, and continue to take you down that road.
- Foundations don't give loans to projects like this.
- **But, overall, we've made tremendous progress over the past two years!**

## Day 2: Wednesday, May 17<sup>th</sup>, 2017

### Beyond Bioenergy: Integrating Multiple Economic Development Options

Watershed Research and Training Center, Nick Goulette

- Hayfork Community Enterprise is a 47 acre old sawmill with some hard infrastructure and environmental assets (such as a salmon stream). It was envisioned as a campus to provide opportunities to other entrepreneurs in the community.
- Tule Creek Forest Products produces bundled firewood (most of California's firewood is imported from out of state).
  - \$580,000 into firewood operation into year 2; could have spent more- financing comes from foundation loan and the Watershed Center unrestricted funds (everything put back into the business)
  - Expenses will pile up and be bigger than expected; this is just what it takes
- Has created 1 full time year round job and 6 seasonal jobs
- Markets are big, supply cannot meet the demand; there is an opportunity for increased CA production, maybe some other groups present can help meet the demand.
- They are still operating in the red: 200 loads needed to be profitable, and 250 to be full time year round.
- Beyond firewood, they have merchandized higher value logs. Sustainable Northwest Wood helping to develop higher end markets, also looking into cannabis production (composting).
- Challenges- debt and risk, log supply, transportation logistics (very remote and only one trucking company is willing to go to Hayfork), ongoing brownfields challenges, and when people can't be retained full time they are constantly retraining a new workforce.

### Sierra Institute for Community and Environment, Camille Swezy

- The Indian Valley Wood Products Campus is moving from focusing on small scale bioenergy to variety of products.
- Plumas County is very rural, heavily forested and fire prone. It lies within a critical watershed (the Upper Feather River) and has suffered from the decline of the timber industry.
- Community scale approach for biomass solution:
  - Crescent Mills: integrated wood products, beyond bioenergy
  - Biomass heat for public institutions around the county: CEC EPIC grant for Plumas County Health and Human Services Center, if all goes well will be online by fall 2017. There is also interest from the school district.
- Bioenergy was main focus at one time, but didn't have co-located businesses or finances worked out.
- Working closely with local logging company that is currently producing firewood but is looking to increase scale; chipping to supply boiler network. Also looking into mass timber production with an operator who wants to expand into an emerging CLT market in California.
- Want to be a prototype for rural, community-scale biomass utilization.

### Governor's Office of Planning and Research, Michael Maguire

- Trying to support alternatives to pile burning, such as biochar.
  - Most landowners don't want to pile burn because they have to pay.
  - Biochar is a value added product with enormous potential. It can be used as a soil amendment or filtration medium.
    - As a soil amendment it helps with carbon sequestration, drought resiliency, and improves crop yields.
- Want to address soil applications like biochar in areas that are hardest hit by drought (which are also the places with the highest water use).
- Higher ash content biochar will have a higher pH, so in some cases it will be doing more harm than good. Not all biochar is the same, and you need to understand the chemistry before you use it!

### Discussion

- Q: Supply issues?
  - Nick: \$30/ton doesn't get much material out of the woods so it's not a huge incentive for private landowners. They have to decide that it's worth it and economically it's not unless they're very close to the mill. There is a challenge working on USFS land with NEPA and steady contracts.
- Q: How do you work with private landowners?
  - Nick: They have an option to leave material on site; private supply fluctuates.
- Q: How does governor's office interact with the communities?
  - Michael: We try to do as much outreach as we can, but the people here are helpful in spreading the word as well.
  - Elissa: SWET, Sierra Institute can help with outreach; having a research side is important.

- Q: What is the distance between the high school and Plumas County Health and Human Services?
  - Camille: These would be separate projects with separate boilers since the distance would be too far to connect; one of the products would be the chips to feed the boiler, and once more boilers are online, we will produce uniform sized chips.
- Q: What is the best market for biochar?
  - Agriculture, for the environmental benefit.
- Q: Regarding composting as a possible industry, is there a concern that the movement of bulk soils may be a cause of sudden oak death? Have you thought of the impact on the community of pointing this out to the market?
  - Nick: People are bringing in bad stuff and there are people in the community that are vocal about it, but replacing it is a lot of work also.
- Forest Landowners of California can serve as a resource for contacting and working with private landowners for supply.

## Rural Re-Development: Brownfields Cleanup

### US Environmental Protection Agency, Eric Byous

- Brownfields are sites that have known contamination or are assumed to have contamination and thus carry investor risk.
- EPA's brownfields program is a redevelopment program, not an enforcement program.
- 1/3 of properties assessed require no further action.
- Main contaminant sources are hazardous substances and petroleum. You can have an assessment just on an old building (lead paint, asbestos), but there are different contaminant considerations based on prior use (mine, lumber mill, etc).
- Proposed reuse must benefit the community, economy or environment, such as an open space, school or renewable energy.
- Steps in brownfields process are to identify the site, identify reuse options, 2 phases of assessment (using historical records and contaminant testing), analysis of brownfields cleanup alternatives, and cleanup.
  - Can move on after Phase 1 if there's no reason to believe it is a brownfields site.
  - Alternatives can be a simple cap or fencing.
- There are lots of funding opportunities available:
  - Competitive funding opportunities:
    - Cleanup grants
    - Area-wide planning
    - Assessment grants
    - Revolving Loan Fund grants
    - Job training grants
  - Non-competitive opportunities:
    - State and Tribal Response Program
    - Targeted Brownfields Assessments
- Targeted Brownfields Assessment (TBA)- you can easily apply online (search EPA region 9):

- Applicant does not need to be the owner of the site for an assessment (but for a cleanup grant they do). Non-profit organizations often apply for a TBA.
- There is a concern about the federal budget but funding for this year is confirmed.
- There are a few options after a TBA, depending on what is discovered:
  - Cleanup grant
  - Further assessment using an EPA grant or DTSC funding
  - Local, foundation or investor funding
  - Or assessment can determine that no further action is required
- One thing to keep in mind is that once you define a site, that is the site for both assessment and cleanup.
  - It might make sense to divide a mill into smaller site units, which would be more manageable and allow for increased funding; move across the property over time.
- Get in touch with oversight agency early for advice.

#### CA Dept. of Toxic Substance Control, Steven Becker

- Voluntary Cleanup Program (VCP) is used when there are suspected hazards on site; the VCP can determine that there is no risk (no action required).
- It's important to talk to the EPA, DTSC and local environmental health authorities up front.
- Agreements that are appropriate for rural sites:
  - Voluntary Cleanup Agreement is the most heavily utilized process and can be done by the owner or a non-owner
  - Prospective Purchaser Agreement (PPA) can be used to obtain immunity from DTSC and 3<sup>rd</sup> party lawsuits; it's geared toward rural properties, but one of the caveats is that you must be able to fund
  - California Land Reuse and Revitalization Act is mostly for urban sites (must be in an incorporated community).
- See slide 6 of this presentation for a diagram of the investigation and cleanup process. A lot of sites are simple sites and don't require further action or need to ever venture into the activities associated with complicated sites.
- Assessments look at three different pathways for contaminants: air, groundwater, and surface.
- DTSC Targeted Sites Investigation grant is for nonprofits or schools and can be used in conjunction with EPA Targeted Brownfields Assessment.
  - It's important to know what the reuse plan is!
- Challenges: you need the right information about historical use of the site and need to make sure you're going through the right agency (there might be a local agency that needs to be involved, so talk to them up front).
- Contact information for Steven Becker: (916) 255-3586 [steven.becker@dtsc.ca.gov](mailto:steven.becker@dtsc.ca.gov)

#### Sierra Institute for Community and Environment, Camille Swezy

- The Crescent Mills site went through the brownfields assessment process and worked with both Eric and Steve.
- One of the bigger issues is about liability.
- SI got a TBA grant for Phase I/II, but staff turnover at SI and EPA ended up in failure to identify next steps, lost track of the process.

- DTSC has come in to serve as oversight agency since rural counties don't have the capacity to perform that role.
- DTSC looked at Phase II assessment and said it was incomplete, so Sierra Institute (SI) applied for a Targeted Site Investigation grant. The report returned in April 2017 said the contamination is manageable.
- How to make sure we aren't liable?
  - Prospective Purchaser Agreement requires financial assurance and SI/rural areas don't have it, no other entity is able or willing to this issue on (which is why SI stepped in).
- In process of obtaining a comfort letter from DTSC that says they won't come after SI if SI follows through on the appropriate cleanup remedy.
- Because contamination is not significant, a concrete cap should suffice.
- DTSC and CA Regional Water Quality Control Board have oversight charges, so a lot of money goes into this process.
- There is no clear roadmap until the assessment process is completed. No one wants to invest in a project until the site has been cleaned.
- Recommendations to groups going through the brownfields assessment process:
  - Engage the oversight agency early
  - Map out grant deadlines and your timeline
  - Understand costs
  - Keep in mind objectives and remember what is realistic
  - Engage the community- brownfields clean-up is a good thing for the community!
- Sierra Institute in discussion with Sierra Fund and Center for Creative Land Recycling on launching a new initiative targeted toward the brownfield process for rural communities—not a lot of resources out there currently.

## Discussion

- Q: Who determines oversight agency?
  - Steven: application is submitted and shared between DTSC and RWQCB to decide who will be the lead agency.
  - Geotracker and Envirostor sites can help you see the history of a site to determine if it might be contaminated.
  - Camille: In our case, while very supportive of our work, the Plumas County Environmental Health determined that they are unable to serve as the oversight agency. So DTSC stepped in.
- Q: Clarification of who applies for grants?
  - Depends on the grant.
  - Assessment grant- local government applies for an assessment on private land. For example, the EPA Assessment grant requires a government entity as the applicant, so the Sierra Institute engaged the Plumas County Community Development Commission to partner.
  - Cleanup grant- the site owner applies; must be local government, tribe or non-profit.
  - Can the assessment determine activities required?
    - Assessment can go through all cleanup planning.
- Q: What is the magnitude of the problem in rural northern California, specifically on mill sites?

- Camille: We didn't realize brownfields were an issue until recently, but it's a widespread problem because most mills have some contaminants.
- Jonathan: The Center for Creative Land Recycling works in urban areas but wants to expand to a rural focus; Sierra Institute and the Sierra Fund are starting this initiative with them.
- Q: If the original owner still holds liability, what is their responsibility?
  - If there's a responsible party, they'll have to do it all; if there might be a responsible party, we'll do a Potential Responsible Party (PRP) search. There usually needs to be an identified health threat, which is not often found in rural areas (not a lot of activity on the site).

## Managing Partnerships to Ensure Community Benefit

Jonathan Kusel, Sierra Institute for Community and Environment

- Site selection/ mill site development
  - Assume that the site is contaminated: the question is not whether or not it's contaminated, but how badly and how much it will cost.
  - Make sure you're not taking on the liability of an unmanageable site.
- Technology and developer selection
  - Obtain assurances about operations (use technology that has been tested, performance bonds/requirements)
  - What are the unwanted byproducts of operation?
  - Consistent and clean operation- needs to be included in business plan
  - Economic development- does the number of jobs created reflect local employment and/or higher wages?
- Co-products and co-business development
  - What are you going to do with the lowest value product?
  - Who owns the co-businesses?
- Securing grants for facilities and business
  - Ownership stake for grants
- Business planning and finance
  - Organizational ownership structure- is a non-profit the right structure?
  - Dan McDonald: Get good accounting and legal help early; need to consider what you are getting out of the deal if you are the one with the liability.
- Supply
  - Need supply guarantees of 3x what you think you need
  - Also need a back-up plan
- Elissa Brown: Look at the big picture, but take small steps
  - Let's develop our knowledge base: we need to know what you need to know to succeed

## Discussion

- Want examples of working with for-profit entities
- Existing and necessary infrastructure at site, including digital infrastructure
- Co-products and co-businesses- how do we ensure that one doesn't bring down the other?
  - Nick: deliberately set up one to stand on its own and then add another to diversify

- What can we do between now and 2018?
  - SWET annual meeting in 6 months?

## Advancing the California Experiment: 3 MW Combined Heat and Power Facilities and Wood Product Yards (Joint Session with Waste to Wisdom)

An informal panel discussion featuring Jonathan Kusel, Camille Swezy, Nick Goulette, Steve Wilensky and Todd Sloat to share rural development challenges with researchers and developers in attendance at the Waste to Wisdom final meeting. Jonathan and Nick opened the conversation with an introduction to the California Experiment that provides an incentive for rural communities to develop 3 megawatt combined heat and power facilities and small-diameter wood utilization yards. They also gave an overview of the RCDI program and highlighted the importance of integrating research with application.

Outcomes from the conversation included:

- Reflection from researchers in attendance on the commitment and persistence of communities working toward biomass utilization;
- A better understanding of how research can inform revitalization of a community, and what research is needed (e.g., feedstock and brownfields issues);
- Highlighting an opportunity for a more comprehensive study of what has worked, what hasn't worked, and what else is needed for successful development of community-scale biomass utilization