

Rocky Mountain Restoration Initiative (RMRI)
June 16, 2020, 2:00 PM - 4:00 PM
RMRI Biomass Utilization Subcommittee
Meeting Summary - FINAL

ATTENDANCE

Participants: Nate Beckman, Angela Boag, Ben Cohen, Patt Dorsey, Jamie Nogle, Molly Pitts, Mike Preston, Tim Reader, Kirby Self, Mark Shea, Nathan Van Schaik, Laura Wolf

Facilitation: Heather Bergman and Samuel Wallace

ACTION ITEMS

Molly Pitts	<ul style="list-style-type: none"> • Synthesize the information she received on available woody biomass supply and on the wood pellet industry and report back to the Biomass Utilization Subcommittee • Reach out the biomass power plant in Gypsum and invite them to participate as a panelist on a biomass power lessons learned panel.
Laura Wolf	<ul style="list-style-type: none"> • Create a written summary of her discussion with the California Regional Office and share it with the Biomass Utilization Subcommittee. • Reach out to the US Forest Service (USFS) national lead on bioenergy and invite them to participate as a panelist on a biomass power lessons learned panel.
Tim Reader	Research the Kersey gasification plant and the policies associated with the loan they received from the US Department of Agriculture (USDA).
Nathan Van Schaik	Reach out to a biomass power trade association and invite them to participate as a panelist on a biomass power lessons learned panel.
Jamie Nogle	Share the contact information for the National Wild Turkey Federation (NWTF) district biologist who has been working on biomass power in the Four Forest Restoration Initiative (4FRI) with Laura Wolf.
Angela Boag	Invite the Colorado Energy Office (CEO) policy advisor to attend the lessons learned panel discussion as an attendee.
Patt Dorsey	Reach out to Blue Forest Conservation and invite them to participate as a panelist on a biomass power lessons learned panel.
Samuel Wallace	<ul style="list-style-type: none"> • Re-send Mike Preston’s biomass power framework for Subcommittee members to share with panelists. • Create a Doodle for a two-hour webinar with the biomass power lessons learned panelists in mid-July. • Send the draft update slides to the Biomass Utilization Subcommittee for their review before they are sent out to the whole RMRI group on June 22.

5/19 MEETING ACTION ITEM UPDATE

Meeting participants shared updates on their action items from the May 19 Biomass Utilization Subcommittee meeting. Their comments are summarized below.

- Mike Preston and Angela Boag participated in a Colorado Water Conservation Board (CWCB) listening session on forest health. Mike Preston talked about the institutional

alignments that will need to occur for RMRI-Colorado (RMRI-CO) and RMRI-Southwest Colorado (RMRI-SW) to be successful.

- Mike Preston organized a Biomass Utilization Subcommittee subgroup meeting to discuss a framework for how to approach biomass utilization challenges. He will not be able to continue to organize the subgroup due to a lack of time.
- Tim Reader talked to Kurt Mackes of Colorado State University about gathering information on the costs of transporting biomass materials. Generally, transportation represents a significant proportion of the total costs of harvesting. Dr. Kurt Mackes can compile information on transportation costs, but he needs the Biomass Utilization Subcommittee to further narrow down their questions. There should also be data on harvesting and transportation costs in the Colorado State Forest Service (CSFS) Forest Action Plan. That data will become available once the Plan is released in the next couple of months.
- Tim Reader discussed the CSFS Forest Products Database. The Forest Products Database is a tool that was developed to encourage the use of Colorado wood products and biomass. It is associated with the Colorado Department of Agriculture's Colorado Proud program. Most wood products currently used in Colorado come from out of the state. The CSFS Forest Products Database is a consumer-oriented database that allows users to search for specific businesses by the products they offer. Businesses register their information in the database as a free form of advertisement. The CSFS has discussed ways to incentivize businesses to register their business in the database, but none of the incentives has come to fruition. They did temporarily advertise Colorado wood products through commercials along the Front Range, but they only did so until the funding for that initiative was exhausted. There may be an opportunity to launch another commercial campaign for Colorado wood products.
- At the May 19 meeting, Laura Wolf informed the Subcommittee that the USFS expects to receive stimulus money from the federal government and requested that people provide shovel-ready projects in case funding is allocated. It is not certain what criteria or stipulations will be tied to the funding if it is allocated. The USFS is still accepting proposals if anyone is interested in sharing projects.
- Laura Wolf contacted the USFS Regional Office in California to talk about their biomass strategy and policies. She is distilling the information they provided. She will create a written summary of her discussion with the California Regional Office and share it with the Biomass Utilization Subcommittee. USFS employees from the California Regional Office would be willing to participate in or host a webinar with their staff who work on policy.
- Molly Pitts has a point of contact with someone who works at a biomass facility in California. Her contact could provide perspective on California's biomass policies.
- Samuel Wallace edited the Biomass Utilization Subcommittee's roles and responsibilities in the RMRI governance charter based on the feedback the Subcommittee provided on May 19.

5/27 BIOMASS UTILIZATION SUBGROUP MEETING ACTION ITEMS UPDATE

Meeting participants shared updates on their action items from the May 27 Biomass Utilization subgroup meeting. Their comments are summarized below.

- A subgroup of the Biomass Utilization Subcommittee met on May 27 to discuss challenges and opportunities related to biomass utilization. The subgroup was composed of Mike Preston, Molly Pitts, Tim Reader, Ellen Roberts, Ken Curtis, and Mark Shea.
- The Biomass Utilization subgroup defined biomass as any slash or small-diameter trees smaller than a sawlog (i.e., diameter less than nine inches).
- The subgroup distinguished that there are two different tracks for biomass utilization: one focused on a biomass energy strategy and another focused on a strategy for other biomass products (e.g., wood pellets, biochar, etc.). There are different challenges and opportunities

associated with these two different end products. Ellen Roberts and Mike Preston volunteered to focus on biomass power, and Molly Pitts and Tim Reader volunteered to focus on other biomass products. The Biomass Utilization Subcommittee will continue to work together, but there may be separate tasks for biomass power and other biomass products moving forward.

- The subgroup discussed how to integrate statewide planning efforts (e.g., Forest Action Plan, Colorado Water Plan updates) to promote biomass utilization.
- Molly Pitts gathered information on available biomass supply on National Forest lands from USFS employees. She also talked with her contact at a wood pellet business and discussed the viability of a wood pellet industry in Colorado. The viability of a wood pellet industry is dependent on how much woody biomass is available. Molly Pitts will synthesize the information she received on available woody biomass supply on National Forest lands and on the wood pellet industry and report back to the Biomass Utilization Subcommittee.
- Tim Reader collected information on the available woody biomass supply on private and state lands. The CSFS Forest Action Plan will set priorities for treatments on non-federal lands and have estimates on the acreage of prioritized treatments. Because the CSFS is finalizing the Forest Action Plan and organizing a formal rollout, that data will not be available until its release in the next couple of months.
- One of the challenges with using biomass from private land treatments is that it is uncertain how the small amount of biomass that comes from small-acreage private treatments can be turned into a usable product.
- Mark Shea had a discussion with the Colorado Forest and Watershed Alliance (COFWA) about how to integrate carbon planning into state planning efforts, such as the Colorado Water Plan updates. COFWA is working on developing a carbon position white paper. Ellen Roberts sent language from the California Forest Carbon Plan to the subgroup to help the Colorado Forest and Watershed Alliance (COFWA) write a white paper about the need for carbon forest planning.
- Mark Shea talked with representatives from the USFS Pike-San Isabel National Forests and Cimarron and Comanche National Grasslands (PSICC) about opportunities to strengthen biomass utilization in the Upper Arkansas and Pikes Peak regions. There is a need for a better understanding of the amount and type of biomass on the landscape in these regions. There could be an opportunity for a field trip with industry representatives and the USFS to discuss how to increase industry in these regions.

BIOMASS POWER FRAMEWORK

Mike Preston developed a framework for how to approach biomass power challenges. He shared the framework with the Biomass Utilization Subcommittee. His comments are summarized below.

- The first step in the framework is to learn from other groups, agencies, and businesses that are already engaged in strengthening the biomass power industry. Some examples include the Gypsum biomass power plant in Colorado and the California businesses and agencies that are working on developing the biomass power industry in California. They could share important lessons gained from their efforts.
- There is a variety of feasibility considerations that needed to be taken into account when establishing a biomass energy unit. Some of the considerations include the type of unit (e.g., direct combustion or gasification), cost of the unit, the fuel volumes required to power the unit, the resulting power production, distribution and transmission interconnections, power purchase agreements, and the policies and incentive structures around biomass power. Distribution and transmission interconnections are a significant issue for establishing a biomass energy unit; if biomass power is added to the grid, the infrastructure

needs to be fortified to accept and transmit that additional power. Understanding and securing power purchase agreements are important in determining whether a biomass energy plant would be financially viable. Additionally, it is important to understand the existing policy and incentives structure to make the use of biomass viable in the market. All these feasibility considerations depend on an available supply of biomass.

- RMRI-SW partners are interested in pursuing biomass power in Southwest Colorado. Two advantages that Southwest Colorado has in establishing biomass power production are that large-scale treatments are occurring in the region and that there is an already established industry. Some Front Range entities are interested in pursuing biomass power as well. Front Range entities have the advantage of a large ratepayer base even though they currently have a limited wood business capacity. The Biomass Utilization Subcommittee should focus on one Southwest Colorado effort and one Front Range effort to evaluate the feasibility of developing biomass power.
- The following assessments and evaluations are needed to evaluate whether a biomass power unit would be feasible in Southwest Colorado or along the Front Range:
 - Assessment of the volume of available biomass and to what extent flows of biomass supply can be guaranteed. (Investors want to know there is a large guaranteed supply before they make a large investment.)
 - Determination of the type, size, and location of a biomass unit needed to handle biomass supply flows. (A biomass power unit would need to be in close proximity to the biomass supply to be economically viable.)
 - Determination of the investment needed to develop the biomass power unit.
 - Determination of the amount of power that the unit could generate.
 - Determination of the investment required to develop the necessary grid interconnections to increase the capacity of the grid to accept additional power.
 - Evaluation of the demand for power, including wholesale energy on the grid and “behind the meter” use (i.e., a business that could use biomass power to address power needs at a facility rather than purchasing energy off the grid).
 - Determination of the revenue needed to cover the operations of a biomass power unit, the power unit development costs, and the interconnection investment costs.
- Wind and solar policy incentives have significantly increased the use of wind and solar energy. Biomass power needs to be integrated into the green power portfolio to make this same progress.
- One limitation of wind and solar energy is that they are intermittent energy sources, meaning energy is generated depending on specific conditions (i.e., when the wind is blowing and when the sun is shining). With intermittent sources, there can be a disconnect between when power is generated and when it is used. One advantage of biomass is that it is non-intermittent and can be generated at any time so long as supply is available.
- Biomass power provides auxiliary benefits outside of energy production (e.g., wildfire risk reduction). These auxiliary benefits are not normally incorporated into cost analyses but do provide additional value.
- From a carbon perspective, biomass power should be evaluated within the context of the carbon cycle. Biomass power production releases greenhouse gas (GHG) emissions in a controlled manner when compared to the less controlled releases that occur as a result of wildfires or prescribed fires.
- Biomass power needs to be supported by policy and legislation. Solar and wind energy currently receive a 3:1 tax credit ratio, while biomass power receives a 1:1 tax credit ratio according to state legislation. Additionally, the federal government does not recognize

biomass power as a green energy source, and so, biomass power does not receive the same federal tax credits as wind and solar energy.

- Forest treatments can help protect the grid from wildfires.
- There will need to be institutional alignment to work through this framework. Initiatives, agencies, and collaborative groups (e.g., the Forest Health Advisory Council, CSFS, RMRI, Colorado Energy Office (CEO), Department of Natural Resources (DNR), Basin Roundtables, Tri-State, etc.) will need to align efforts to produce results at a meaningful scale.

BIOMASS POWER STRATEGY AND APPROACH DISCUSSION

Meeting participants discussed the strategy and approach they should take to address biomass power. Their comments are summarized below.

- There is a biomass gasification facility being built in Kersey, Colorado. They received a loan from the USDA that may restrict them from taking wood from federal lands unless that wood was originally intended to go to a landfill. More information is needed on this facility, the loan they received, and the policies associated with that loan. This issue is the type of policy barrier that the Biomass Utilization Subcommittee needs to examine further. Tim Reader will research the Kersey gasification plant and the policies associated with the loan they received.
- It will take a lot of resources to conduct the feasibility investigation as outlined in the biomass power framework and put all the research and data together.
- Changing state policy is going to require having good access to the Colorado Legislature and Governor's Office. On the federal policy side, most proposed policy changes would need to be incorporated into the US Farm Bill, which is renewed every five years. Considering that the Farm Bill was just renewed, the Biomass Utilization Subcommittee would need to consider how to work through federal barriers in the interim.
- The Biomass Utilization Subcommittee needs to work on addressing barriers now if they want to move large institutional planning processes in the future. For example, the CEO is not going to renew their carbon models for several years, so the Biomass Utilization Subcommittee needs to consider how they can work on carbon issues now to affect the modeling in several years.
- The Biomass Utilization Subcommittee needs to address the economic barriers of biomass power. Some of the economic barriers are related to securing power purchase agreements and addressing policy barriers.
- It would be helpful to have a conversation with energy providers, like Xcel and Tri-State, before initiating any biomass power investigations. RMRI-SW partners have approached energy providers in the past, and they have responded that they want to pay the same rates for biomass power as they pay for other power sources. When building a partnership with energy providers, the Subcommittee will need to acknowledge that energy providers cannot pass increased costs onto their ratepayers.
- For energy providers, it is a business decision whether to invest in and use biomass power. Unless there is a change in policy or economics, they will not have the incentive to switch power sources. With a focus on solar and wind energy production alongside ongoing research in battery storage, energy providers and the public share a perspective that incorporating carbon-based energy back into their energy portfolio is undesirable. There needs to be an understanding of how to approach biomass power from a policy and public opinion perspective.
- The Communications Subcommittee could put forth an effort to change public opinion to create a demand for biomass power. If the public demands the use of biomass power, the decision-makers and infrastructure will follow. There are two potential messages that the

Communications Subcommittee could promote. The first message is that biomass power can serve as a non-intermittent energy source to supplement solar and wind energy in the green power portfolio. The second message is that biomass power is a way to control the release of GHG emissions when compared to wildfire and prescribed fires.

- Quantified Ventures has been tackling biomass power issues. As part of the Environmental Impact Fund project in Southwest Colorado, Quantified Ventures is trying to establish a biomass facility that can create revenues to help finance forest health treatments. The biomass facility would accept trees from private properties, which would prevent biomass material from being left on those private properties. Based on the discussions Quantified Ventures has had with operators so far, a behind-the-meter, co-generation facility might be the most economically viable biomass facility option given the amount of investment needed to distribute electricity through the grid.
- The next step for the Subcommittee could be to gather information on the available woody biomass supply and the size and type of units that could be built with that supply. Those are key feasibility considerations that inform how much research will need to be conducted on the other feasibility considerations. Before collecting this information, the next step of the Biomass Utilization Subcommittee should be to organize a panel with agencies, organizations, and facilities that are working to develop biomass power to gain information about the lessons they have learned from their efforts.

LESSONS LEARNED PANEL DISCUSSION

Meeting participants discussed organizing a panel of experts who can share their lessons learned when trying to increase the use of biomass power. Their comments are summarized below.

- The purpose of organizing a “lessons learned” panel is to educate the members of the Biomass Utilization Subcommittee on the policies and barriers that have presented challenges and opportunities to people who are working on biomass power issues. Before the Subcommittee can reach out to policymakers, they need to first understand the issues themselves.
- There is not going to be an easy solution on how to increase biomass power. Investigating ongoing efforts, the scale of those efforts, and the existing incentives and barriers is important in order to think about how those efforts may apply to Colorado.
- The Kersey biomass plant is not focused on power, so they are not the best fit for this panel discussion.
- Energy providers do not need to attend the lessons learned panel session at this time.
- Arizona has tried to promote biomass power through 4FRI. They are still in the process of determining how and where to establish a biomass power plant. Jamie Nogle has a contact for the NWTF district biologist who has been working on biomass power in the 4FRI project area. She will share that contact with Laura Wolf.
- There may be lessons to be learned from outside of the United States, like Germany, where the biomass power industry is successful. Although Europe has been successful at promoting biomass power, their system will be different than the United States’ system, and it will be difficult to find applicable solutions for Colorado.
- Potential panelists for the lessons learned panel include representatives from:
 - Blue Forest Conservation
 - California USFS Regional Office or the USFS national lead on biomass power
 - A biomass power trade association
 - Neiman Industries
 - Gypsum Power Plant

- Some biomass power businesses in California are struggling. California is a good parallel example for Colorado because they have similar forest health issues as Colorado (e.g., beetle infestations, wildfires, etc.). The USFS Regional Office in California can share the lessons they have learned in their efforts to revitalize the biomass power industry. Laura Wolf will reach out to the USFS national lead on biomass power and invite them to participate as a panelist on a biomass power lessons learned panel.
- Molly Pitts will reach out to the biomass power plant in Gypsum and invite them to participate as a panelist on a biomass power lessons learned panel.
- Patt Dorsey can reach out to Blue Forest Conservation and invite them to participate as a panelist on a biomass power lessons learned panel.
- Nathan Van Schaik will reach out to a biomass power trade association and invite them to participate as a panelist on a biomass power lessons learned panel.
- A representative from the CEO should attend the panel discussion. The Biomass Utilization will, at some point, need to have a conversation with the CEO about what their role could be and what mechanisms they have to promote biomass power. Angela Boag will invite the CEO policy advisor to attend the panel discussion as an attendee.
- Samuel Wallace will re-send Mike Preston's biomass power framework for Subcommittee members to share with panelists.
- The lessons learned panel discussion should be scheduled for two hours. Samuel Wallace will create a Doodle for a two-hour webinar with the lessons learned panelists in mid- to late July.

NEXT STEPS

- The next Biomass Utilization Subcommittee meeting will be the two-hour webinar with the lessons learned panelists in mid- to late July.
- Samuel Wallace and Heather Bergman are creating slides to update the full RMRI group on the activities of the RMRI Biomass Utilization Subcommittee during the next RMRI meeting on June 23. Molly Pitts and Mike Preston will give an update on the biomass power agenda and next steps. The Biomass Utilization Subcommittee does not have any requests for RMRI partners at this time. Samuel Wallace will send the draft slides to the Biomass Utilization Subcommittee for their review before they are sent out to the whole RMRI group on June 22.