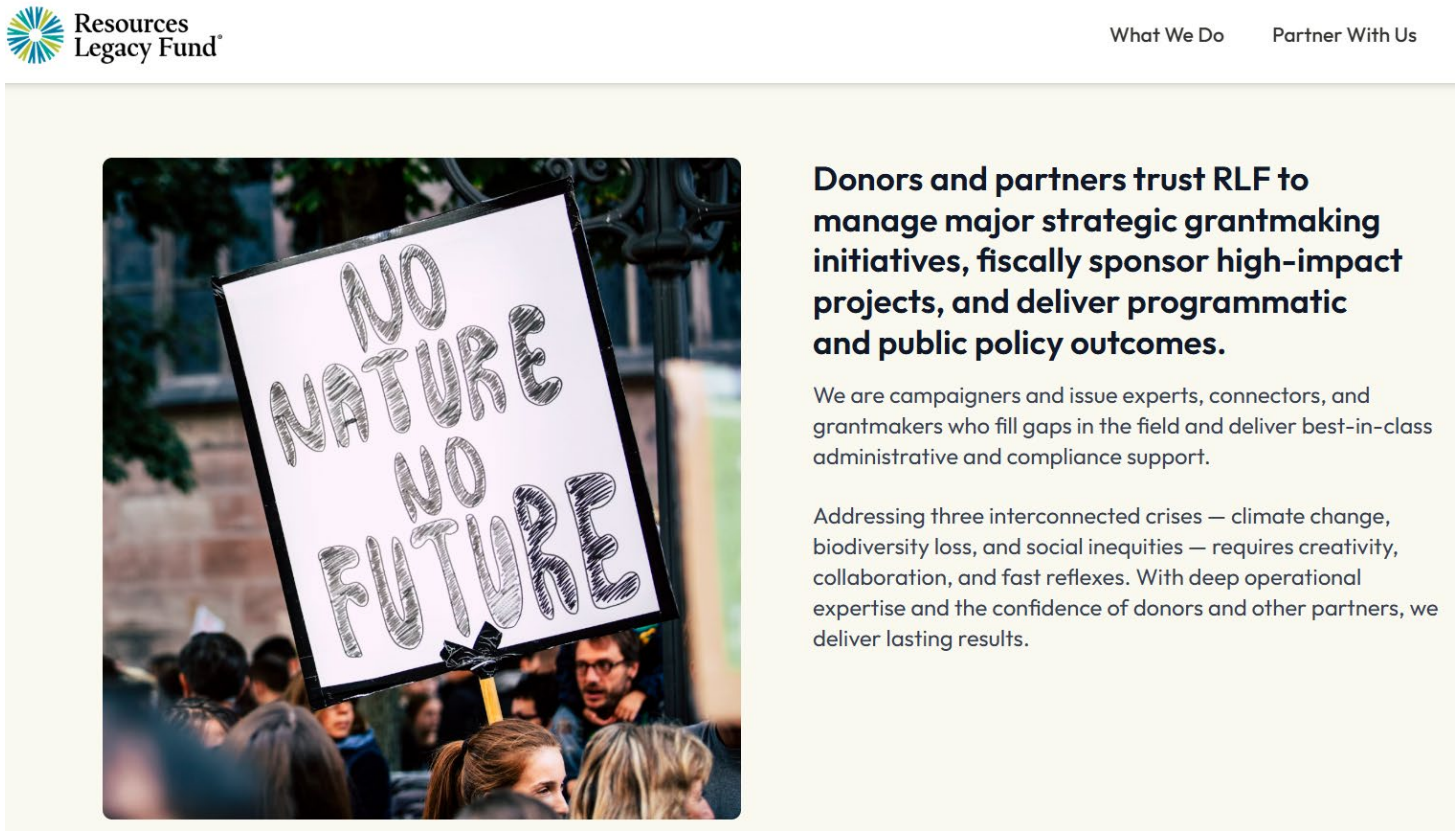
A Policy Agenda for Increasing the Utilization of Biomass in the Intermountain West

Funding

Strategic grantmaking with a focus on public policy outcomes:

- Climate change
- Biodiversity loss
- Social inequities



Objectives

- Survey the state of play re: biomass utilization and markets
- Apply a policy lens – what needs to change?
- Produce policy synthesis & recommendations – what do we know? What has changed from previous work? What is needed now?

Other questions:

- What can we learn from successes and failures
- What regional/smaller efforts have potential to expand west-wide?

Framing

- What would climate-smart biomass utilization policy look like?
  - i.e. reducing occurrence of catastrophic fires and open pile burning, increasing utilization of byproducts of fuels reduction

Policies and pilots that could be included:

- Air curtain burners
- Haul cost subsidies
- Power Purchase Agreements
- Opportunities to learn from policy initiatives in other sectors, e.g. other low-carbon, or biobased manufacturing initiatives

Methods

Review of literature

Regional biomass working group engagement

Interviews

- TA providers
- Researchers
- Business managers

Product & Business Characteristics

Product	Industrial-Scale	Community-Scale	Feedstock Supplier	Off-take Customer
Electricity	X			
Steam, electricity	X			
Energy distribution				X
District heating		X		
Post, pole, firewood, chips, heat		X		
Post, pole, firewood, chips, heat, electricity		X		
Firewood		X	X	
Industrial pellets	X^			
Dimensional lumber			X	
Wood wool cement	X*			
Biochar	X^	X^		

*Denotes emerging businesses ^Denotes closed businesses

Theory of Change

Policies & Statutes

- Define life cycle effects of fuels reduction and biomass utilization as a climate change mitigation tool

Administrative Rules and Regulations

- Adapt processes and procedures for implementing new policies and regulations

Tools and Programs

- New and existing tools and programs will have greater impact due to greater certainty in the operating environment

Recomendations

Some of the recommendations that follow were proposed by interviewees

However, in most cases, interviewees did not have specific recommendations but spoke to the challenges they have experienced

The team took these challenges and the contexts in which they were brought up and developed recommendations based on existing literature and policy proposals

Policies and Statutes

Biomass removal as a public good

"So [biomass-related composting] could totally scale, but it requires figuring out how to monetize the values along that stream. So there's the carbon value. There's the air quality value in those regions where you'd love to just torch these things off or they plan to." [Interview 6]

"The climate change and mitigation programs that are coming out incentivize carbon content. We've seen some actual monetization of our biomass where it wasn't before for just the carbon content in the form of a couple of new businesses. Their monetary stream is through carbon and climate mitigation. So those are very helpful. I think the monetization of the carbon content carbon valuation has to be there." [Interview 1]

Problem: Lack of agreement on the role of forest biomass—specifically biomass from public lands—in meeting carbon reduction goals.

Recommendation: Action by Congress to define the role of forest biomass utilization in mitigating climate change.

Problem: Weak incentives for utilizing forest biomass for energy generation.

Recommendation: Level the playing field for open- and closed-loop biomass systems in the Tax Code.

Forest Biomass Definition

[I]n my world, the definition of forest biomass has to do with its relationship to other products….What has happened in a lot of the West is that the term biomass has become really fuzzy because if we think about it as non-commercial products, a log that is commercial in one location for something like firewood or wood pellets, or even a power plant, becomes non-commercial in another location. The exact same product. So what we're seeing in biomass, you know, piles in one place that we're calling biomass, may include some large diameter logs that in another location would go to low grade sawlogs or boards or something like that. [Interview 3]

Problem: Exclusion of biomass from public lands as an eligible feedstock in federal biomass policies.

Recommendation: Update federal biomass utilization programs and policies to reflect a unified definition of eligible biomass feedstock that includes forest biomass sourced from federal lands.

Problem: One-size-fits-all definition of biomass limits regional innovation

Recommendation: Increase regulatory flexibility to allow states or regions to define biomass in practice

Administrative Encumbrances

Rules and guidance

New guidance on accounting for carbon in federal actions at the unit level

"What we really are lacking is very clear national guidance and tools for implementing carbon as a value for forest management on the ground at the unit level. So at the unit level, I mean National Forest level, right?... So that would be another thing - having just absolute crystal-clear policy at the national level for BLM, the Forest Service, other land management agencies about...if and how specifically these units should be accounting for carbon flux." [Interview 3]

Problem: Administrative rules guiding land management agencies lack direction on accounting for carbon flux which limits the ability to quantify the non-market benefits of biomass utilization/removal.

Recommendation: Enact national guidance [via planning rule] and associated tools to support carbon flux accounting in land management plans and projects.

Changing Supply-Side Economics

"[O]ne of the biggest challenges with biomass utilization is just getting out of the woods. And so a lot of times there's a minimum amount. We pay 10 cents a ton or something for biomass. So you can minimize that amount or even zero it out, but it still costs us $0.45 a ton to get it to our facility. And so I think anything that can drive down the cost of delivered biomass could… It almost sounds ridiculous to say. The cheaper it is, the more people are going to use it. But it's so true. The two biggest costs in our business are logs and labor, and we can't change the cost on labor. We need to keep paying people more. And so the only real driver of changes in margin, in terms of the [Cost of Goods Sold] at least, is going to be changes in the price of the logs. So whether it's subsidizing the harvest or the transport or whatever it is, just finding ways to drive down the cost of transportation on the front-end side."

-Heartwood Biomass

Problem: Administrative policies and practices that require forest biomass to pay its way out of the forest.

Recommendation: Increase use of disposal fee payments as part of Master Stewardship Agreements; consider including mill residuals.

Problem: Under current program rules, businesses can only apply for a transportation subsidy for work already under contract, which can increase a businesses' economic risk.

Recommendation: Make haul subsidies a standard part of stewardship projects, triggered at a specific distance threshold that would be allocated based on a prioritization process, such as that described in Wear et al. (2024). This would avoid the burden of application as well as the risk borne by businesses in having to apply *after* securing the timber or service work under contract.

Appraising for socially beneficial fuel treatments

"The policies that are on the books for appraisal, for valuation, for transaction evidence, for contracting, they work against biomass utilization..... the gap between paying someone $4,000 an acre to do something and requiring them to pay $0.25 a ton for the privilege to remove the same material they were going to burn in piles is insane."

-Interview 3

Problem: Federal statute requires the Secretary of Agriculture to sell timber at not less than minimum rates, even if the standard appraisal process results in a lower rate.

Recommendation: The Forest Service should explore and pursue necessary changes to policy or regulations to remove minimum rates for products that appraise for negative values.

Tools and Programs

Smoothing pathways to commercialization

"So we're looking to productize carbon negative structural lumber and other sort of dimensional materials side by side with the wood wall.... that's two years into a three-year process. And we're looking with our liaison at the Department of Energy to find ways to productize and expand that. I mean, right now we're stuck with a laboratory that makes about 18-inch pieces by hand, and this needs to be something that's considerably got a lot more muscle behind it, so to speak."

-WoodSyn

Problem: Lack of incentives that reward federal and university researchers who engage in applied research or technology transfer work.

Recommendation: Update performance evaluation practices and criteria to include performance metrics and grading criteria that reflect and incentivize the involvement of researchers in technology transfer and other kinds of applied research, for example through the use of Cooperative Research & Development Agreements (CRADAs)

Invest in Small Business Innovation

“these [community-scale] kinds of operations are really challenging because you're somewhere between homeowner sawmill equipment and a major operation like the Hampton Lumber Mill. You're right in between there. And there's not a lot of equipment available for those kind of [operations] that is readily, that has been used for these kinds of applications.”

-C6 Forest to Market Biomass

Problem: Need for **p**ublic investments in research, innovation and tech transfer to help scale technologies into commercialization.

Recommendation: Reauthorize the SBIR and STTR programs

Invest in technical assistance for developing new supply chains

"We're *going to have 100,000 square feet basically of panel storage. Those all have to be fabricated out of dimensional steel sections of some sort rather than being shipped over from Europe. ..And then there are other pieces of equipment, CNC milling equipment, different kinds of conveyor belts, cement silos, the more generic off the shelf stuff that plugs into the fancy European machinery basically.*

[Arizona Industrial Development Authority] doesn't charge us for it, but they'll go out and basically engage various potential equipment providers and things of that nature to try and get us a smooth pathway to get the rest of the sort of the inputs we need from a plant equipment perspective."

-WoodSyn

Problem: Manufacturing and commercialization of new products and technologies require new supply chains for acquiring and maintaining manufacturing equipment.

Recommendation: Maintain or increase funding for the National Institute of Standards and Technology's Manufacturing Extension Partnership, which is funded through the Department of Commerce.

Sustained Yield Units and Long-Term Contracts

REVISITING SUSTAINED YIELD UNITS

BY CHELSEA S. PENNICK, PHD