



JOINT INSTITUTE FOR WOOD PRODUCTS INNOVATION FUNDED PROJECTS

Current Projects

UC Berkeley is leading a project on 'Mountain Community Affordable Workforce Housing with Mass Timber Components.' This project will develop affordable workforce housing designs that will fit the needs of mountain community workforces. Plans will be designed to be permitted in the areas for which they are intended and will include mass timber elements where affordable.

TYLD Corp is leading a project on 'Forest Industry Infrastructure Capacity Assessment and Needs Analysis.' This work will characterize current industry infrastructure by CALVEG sub-region as well as volume and type of supply necessary to retain and sustain the industry infrastructure needed to accomplish relevant California Wildfire and Forest Resilience Task Force goals. This project will also include an analysis of current and reasonably recent successful efforts to increase pace and scale of ecosystem restoration and hazardous fuels reduction within the state.

Clere, Inc is leading a project on 'CEQA Support for Wood Utilization.' This project will produce a CEQA guidebook. It will also consider the value of a new CEQA Guideline amendment that was described in the Institute's November 2020 'Recommendations to Expand Wood and Biomass Utilization in California to determine whether the language proposed should be recommended.

TSS Consultants is leading a project on 'Assessment of State Purchasing Protocols Related to Innovative Wood Products.' This project is assessing current state purchasing protocols and identifying barriers and implications of updating the protocols to facilitate procurement of innovative wood products. The final report will include solutions and pathways that allow for implementation over a 2-year-period.

Cal Poly, Humboldt is leading a project on the 'Development of a Life Cycle Accounting Model for Biofuel Production from Forest Biomass Waste in California.' This project is developing a lifecycle assessment (LCA) calculator tool quantifying the GHG impact of diverting forest residues from current management practices to bioenergy products. The LCA tools will model the life cycle GHG impact of electricity or hydrogen fuel pathways. This will help state agencies evaluate the carbon intensity of forest residue liquid and gaseous transportation fuels and their potential role in the state's climate and forest plans.

Finished Projects

2024

[Recommendations to Advance Forest-Derived Renewable Natural Gas in California](#) was a study conducted by UC Berkeley. Approved by the Board April 10, 2024, it provided recommendations to the CA Public Utilities Commission and other state agencies on renewable natural gas (RNG) from forest biomass. Recommendations were developed based on a geospatial analysis of existing

biomass power plants that were evaluated for possible retrofitting for RNG production, interviews with bioenergy project developers, and an assessment of potential policy scenarios in which RNG would be economically viable.

[Cross-Laminated Timber Layup Tests Using Mixed Fir Species](#) was a study conducted by the TallWood Design Institute at Oregon State University. Approved by the Board March 6, 2024, it assessed the feasibility of mixed species CLT using white fir and Douglas-fir.

[Measuring Transport Properties for Concrete Containing Cellulose Nanocrystals \(CNC\): Porosity, Resistivity, and Chloride Ingress](#) was a study conducted by Oregon State University. Approved by the Board of Forestry and Fire Protection (Board) March 6, 2024, it assessed the influence of CNCs on the service life of steel in concrete elements to extend the time to onset of reinforcing steel corrosion.

2023

[Forest Biomass Pile Data Collection](#) (and associated [Appendices](#)) was a project led by Clere Inc and the Spatial Informatics Group. Approved by the Board in 2023, Part 1 of the report quantifies the number of forest biomass piles in the state that accumulated from 2018 – 2021, including the area treated to create a given pile; composition, volume, and locations of the piles; and the planned vs actual fate of each pile. It also provides an inventory of forest biomass pile material potentially available for wood and biomass utilization. Part 2 of the report provides information about intentional anthropogenic burning and related regulations.

[Cellulose Nanocrystals as a Value-Based Additive for Low Carbon Footprint Concrete with Limestone](#) was a study conducted by Oregon State University. Approved by the Board in 2023, it evaluated cellulose nanocrystals (CNCs) as an additive that can aid in concrete mixture modifications in an effort to reduce concrete's carbon footprint. This project explored the use of CNCs in cementitious materials containing various amounts of limestone.

The TallWood Design Institute added an [Addendum to their 'Cross-Laminated Timber \(CLT\) Layup Tests Using Western Wood Products Association \(WWPA\) White fir Species Group'](#) report. Approved by the Board in 2023, the Addendum highlights the comparisons of white-fir CLT to that of the design values used within the CLT standard (PRG-320).

2022

[Advancing Collaborative Action on Forest Biofuels in California](#) was a project conducted by UC Berkeley. Approved by the Board in 2022, it had 5 subgroups (infrastructure, policy, equity and development, project finance, and feedstock supply), each of which had their own recommendations. Four fuel types (hydrogen, ethanol, drop-in gasoline/diesel, and renewable natural gas [RNG]) were assessed for current demand, future demand, and to determine how much forest biofuel could feasibly be used in the fuels industry.

2021

[Mass Timber and Other Innovative Wood Products in California: A Study of Barriers and Potential Solutions to Grow the State's Sustainable Wood Products Sector](#) was a project led by the Sierra Institute for Community and Environment. It was approved by the Board in 2021.

2020

[Joint Institute Recommendations to Expand Wood and Biomass Utilization in California](#) was approved by the Board in 2020. To meet California's forest health and carbon neutrality goals, the Institute recommended the state continue to expand innovative wood and biomass products markets through a comprehensive set of recommendations.

[Literature Review and Evaluation of Research Gaps to Support Wood Products Innovation](#) was a project led by UC Berkeley. Approved by the Board in 2020, it provided policy recommendations and identified promising classes of innovative wood products as well as those less mature technologies that merit continued monitoring with respect to their potential for commercial deployment.