



# Sustainable Woody Biomass Industry Development in California

February 2022

## Background

In Spring 2020, the Governor's Office of Planning and Research (OPR), in consultation with the Governor's Office of Business and Economic Development (GO-Biz) and the California Natural Resources Agency (CNRA), initiated a cross-agency discussion about woody feedstocks to help launch an **administration-wide vision for productive and sustainable use of our agricultural, urban, and forest woody feedstock in ways that promote our core state values and priorities. These include: wildfire prevention; forest management; environmental protection; waste reduction and reuse; climate leadership; and sustainable economic development, particularly in rural communities.**

This vision statement, crafted and agreed to by the collaborating agencies, captures key goals and core values that emerged over this process:

*Agricultural, urban, and forest woody feedstock, produced through sustainable land management practices, can become the basis for a thriving wood products market that aligns with and supports California's State policy priorities including reducing wildfire risk, achieving carbon neutrality, protecting the environment and vulnerable communities, and supporting sustainable, resilient, and inclusive regional economies.*

In addition, the Newsom Administration has released the Wildfire and Forest Resilience Action Plan, which requires an integrated, multi-agency approach that includes developing sustainable, values-aligned woody feedstocks markets. The Administration also restructured the interagency Forest Management Task Force, bringing it into the Governor's Office, renaming it the Wildfire and Forest Resilience Task Force, and appointing a Director to lead it.

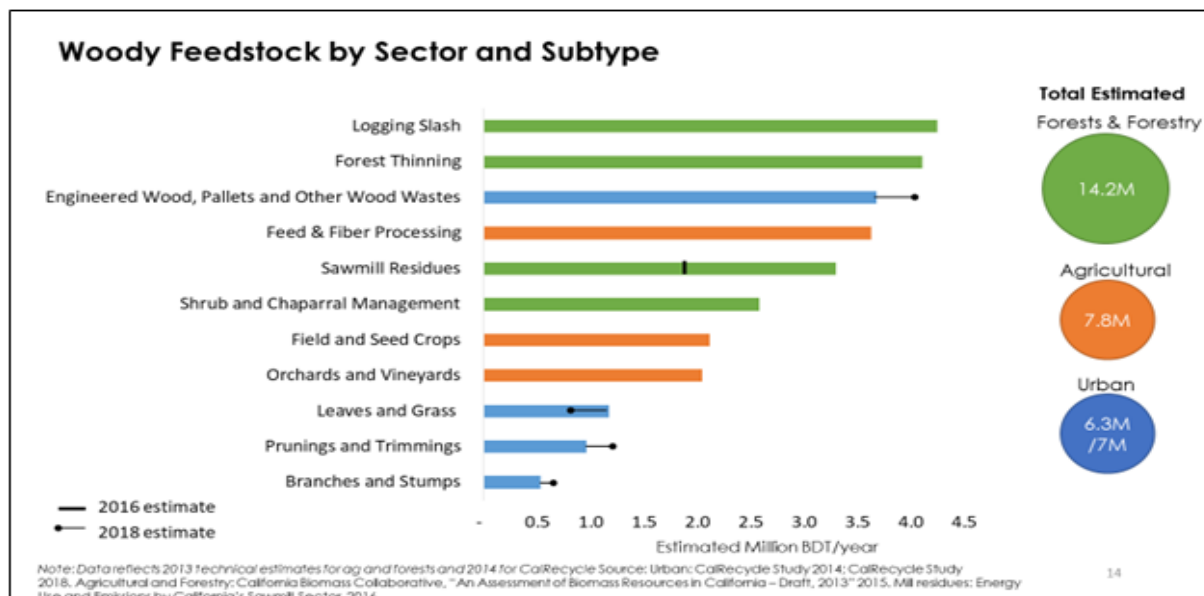
GO-Biz will become the central hub of a new market development strategy – the Sustainable Wood-Based Product Market Development Roadmap ("Roadmap"), much as it has done for Zero-Emissions Vehicles market development. Working in close coordination with the Wildfire and Forest Resilience Task Force and the Joint Institute for Wood Products Innovation, GO-Biz will build out the Roadmap using a collaborative process that engages State agencies, local governments, and diverse non-governmental stakeholders. The high-level findings and recommendations from the cross-agency woody feedstock discussion will guide the Roadmap's development:

- Understand and Track Woody Feedstock Availability
- Align Market Development with State Values and Priorities
- Make California a Woody Feedstock Products Innovation Hub
- Design and Implement Key Policy Interventions to Support Values-Aligned Woody Feedstock Development

## Current State of California Woody Feedstock

California produces approximately 29 million bone dry tons (BDT) of woody feedstock annually from forests, farms, and orchards. This amount will only increase given the Newsom administration’s [one-million acres per year](#) sustainable forest management goal, as well as increased catastrophic events like wildfire and tree mortality. In addition, new requirements to [ramp down agricultural burning](#) practices open doors to new uses for that feedstock.

At this time, the best available information indicates that just under 20 percent of that woody feedstock is aggregated and transformed into commercial uses. Most of that material – around 16 percent<sup>4</sup> – feeds combustion bioenergy facilities. Research and interviews with industry and academic experts indicate that most of the remaining 84 percent of woody feedstock is left to degrade in place, masticated, or piled and burned (in agricultural settings, some portion is reincorporated into fields to produce soil health benefits). In the case of forests, these existing practices are – at present – preferable to inaction because most forests in California exceed healthy density, so leaving the forests unmanaged can lead to pest infestation and catastrophic wildfire. However, pile-burning and other current practices undermine core State goals related to improved air quality, climate action, equity, and forest health. In view of these current conditions, it is clear that the state needs a more robust strategic approach to get control of our biomass management challenges.



## Need for a Market Development Strategy for Sustainable Wood-Based Products

Wildfires offer an immediate and compelling reason to better manage California’s woody feedstock, and as a result, biomass industry development in the forest sector is the initial focus of this strategy. Wildfires threaten forested communities and are now of such size, scale, and frequency that smoke is exacerbating health conditions and causing widespread economic impacts all across the State. While wildfire is part of the naturally-occurring “[carbon cycle](#)”, increased wildfire emissions do exacerbate California’s climate crisis by producing more carbon emissions than natural systems can readily accommodate. The

State is embarking on an aggressive sustainable forest management program, but State resources alone are not nearly enough to address the scale of the challenge.

Similarly, while farms can incorporate some woody agricultural waste back into the soil, most of woody feedstocks resulting from agriculture are piled and burned for disposal.

Building strong wood-based products markets is one important strategy for moving woody feedstock out of forest and farm burn piles and into supply chains that contribute to climate mitigation as well as climate-resilient communities and landscapes. All of this work to develop new markets and technologies can and should be done in deep partnership with these communities, as we use the opportunity presented by these new resources to enhance equity and inclusion.

**Market research clearly demonstrates that a range of promising, sustainable and values-aligned approaches exist for forest and agricultural woody feedstock utilization. But in order for these approaches to scale to a point where they can utilize the amount of feedstock becoming available, California will need to institute innovative policy interventions that drive market growth at pace and scale.**

<b>Values-Aligned Woody Feedstock Utilization Opportunities</b>
<b>Uses Actively Promoted by the State of California</b>
Mass Timber
Market-Ready Cellulosic Nanotechnology
Posts, Poles, Dowels
Small-Diameter Sawlogs (for Dimensional Lumber or Mass Timber)
Small Bioenergy Renewable Generator Projects that meet the State criteria for Bioenergy Feed-in Tariff Program or the Bioenergy Market Adjusting Tariff (BioMAT) Program
Nature-based carbon removal; some carbon capture and storage (CCS) (e.g. through Low Carbon Fuel Standard, LCFS)
Biochar-Torrefied Wood
Mulch and Compost
Animal Feed Additive
Animal Bedding
Market-Ready Liquid and Gaseous Fuels
<b>Emerging Technologies Targeted for Research and Development</b>
Innovative/Engineered Building Materials
Liquid and Gaseous Fuels Requiring Further RD&D
Cellulosic Nanotechnologies
Engineered Carbon Capture/Removal (e.g. DAC)

## **2021-22 Budget Allocations and Next Steps**

Recognizing the need to better understand the current state of the market for woody feedstock, and the potential to scale up a more sustainable and innovative wood products market to meet climate resilience, mitigation, and sustainable economic development goals, the Newsom Administration proposed the following key elements of a wood products strategy in its 2021-22 budget:

### **Market Development Coordination at GO-Biz**

The Governor's budget provided resources to GO-Biz hire at least one full-time position, to lead the development of the Sustainable Wood-Based Product Market Development Roadmap that incorporates woody feedstock from both forests and agricultural operations.

### **Capitalize the Climate Catalyst Fund at IBank**

The Governor's budget provided \$49 million for GO-Biz to capitalize the Climate Catalyst Fund within the IBank, dedicated to supporting projects and businesses advancing sustainable forestry practices. The budget resolution also committed \$25 million to the Climate Catalyst Fund for Climate-Smart Agriculture, including farm-based projects that make productive use of orchard and other agricultural wood waste.

### **Fund Feedstock Aggregation Demonstration Projects**

The early-action package also included \$2.5 million to enable OPR, in partnership with GO-Biz, to make direct awards to up to five regional woody feedstock aggregation demonstration projects. These projects will provide local leaders with the resources and information needed to enable woody feedstock aggregation to commercially-relevant standards, and will form the basis for ongoing collaborations in financing and the promotion of end-use markets. These demonstrations will also serve as models for other regions seeking to aggregate woody feedstocks, and are intended to provide a platform for engagement with private-sector partners promoting activities aligned with the state's goals for the forest sector.

### **Forest Biomass to Carbon Negative Fuel – Pilot Project Funding at the Department of Conservation**

The Department of Conservation received a \$50M budget allocation in the FY21-22 budget – to be made available in July 2022 – focused specifically on creating carbon-negative hydrogen and/or liquid fuel from forest biomass. Funding awards will be made to sites located within the Sierra Nevada, per direction from the legislature. The DOC is working with CARB and the CEC to issue a solicitation as soon as possible, anticipated in the second half of 2022.

### **Forest-sector Business and Workforce Development Grants at CAL FIRE**

\$28 million in grant funding available to maintain and enhance the forest-sector workforce and businesses in California. Eligible projects will promote healthy resilient forests throughout the state by supporting a diverse set of business development and workforce development endeavors. More information can be found at the [Wood Products and Bioenergy website](#).

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