

## Groundhog Day for Ground Wood

With strong support from the California Compost Coalition, SB 498 (Lara, 2014) defined biomass conversion facilities with their feedstock types and required the owner or operator of a biomass conversion facility to submit an annual tonnage report to CalRecycle naming the sources from either agriculture, forestry, mill residue, and/or urban. Each year in August, CalRecycle presents the tonnage data with the urban market shrinking from 1,760,000 tons in 2015 to just 895,000 in 2022, losing about half the market share in 8 years as the policies and incentives for the forest sector crowded out urban wood chips. Each year, CalRecycle states that the declines are partially attributed to cheaper sources of energy, landfill alternative and subsidy fluctuations. Each year, we ask CalRecycle for further analysis and to prepare an urban wood waste market development plan having lost 865,000 tons of bioenergy capacity while being mandated to divert a new 1.9 million tons of wood waste to comply with SB 1383. Each year at this time, it is Groundhog Day for Ground Wood.

The last time California took a comprehensive look at biomass was over 10 years ago; since then, supply and regulatory mandates have both significantly increased. The 2012 Bioenergy Action Plan outlined strategies, goals, objectives, and actions that California state agencies should take to increase bioenergy development in California and build upon the State's 2006 and 2011 Bioenergy Action Plans. To accommodate the changing regulatory and market dynamics, the Bioenergy Action Plan should be updated at least every 5 years but has not. Several legislative efforts have been attempted to update the Bioenergy Action Plan with a more comprehensive Organic Waste Scoping Plan to also assess potential carbon sequestration on natural and working lands. Three Aguiar-Curry bills: AB 144 (2019), AB 1567 (2020) and AB 1086 (2021-22) failed at multiple scenarios to develop funding and find a responsible agency to provide leadership. This "Scoping Plan" would have been data-informed with interagency input to integrate biomass from the forestry, agricultural and urban sectors. The anticipated outcome was to reduce conflict among State policies intended to reduce net air and climate pollution while balancing the immediate needs of local communities disproportionately exposed to environmental health hazards, including wildfire smoke.

The last time CalRecycle published a report on wood waste was in 1995. The latest from CalRecycle can be found on their website [here](#), and paraphrased on page 4. With AB 1826 (Chesbro, 2014) and SB 1383 (Lara, 2016) mandating the diversion of organics from the landfill - including wood waste, - the need for an updated market development plan became evident. CalRecycle is commended for their infrastructure grants for compost and anaerobic digestion facilities but leaves wood waste at the curb without any funding or plan. SB 1383 procurement for woody mulch could be a windfall, but how much and when? A conceptual top down 75% Wood Waste Market Development Plan chart is included herein to restart the conversation again. Plus, Edgar & Associates will be facilitating the development of the Industry 75% Road Map for the rest of the waste stream that will be presented this Fall.

CalRecycle is fixated on their \$2.1 million Zero Waste Plan due by July 1, 2026, nearly 3 years from now, and CalRecycle would prefer we all wait for that process to start, as we have waited for the last 8 years while losing half the bioenergy market. However, both the trailer bill language for the Zero Waste Plan and a [Legislative Analyst Office Report](#) requires CalRecycle to check in on a 75% Report first, with a framework to scope the Zero Waste Plan out by July 1, 2024. On the heels of the Little Hoover Commission Report that recommends a SB 1383 PAUSE, one that does not refresh, the Industry 75% Road Map will at least have some metrics and market information to hedge against any urban SB 1383 PAUSE next legislative session as the rurals decide on their future. We are from the Industry; We are here to help!

CARB approved the 2022 Scoping Plan with a promise of a carbon neutral future by 2045 and skipped over carbon negative programs that could have achieved the short-term goals in 2030. Dreaming of carbon neutrality with total electrification misses out on real programs to reduce short-lived climate pollutants, which are the only tools left to bend the climate curve. CalRecycle is following that same playbook to point towards an elitist zero waste carbon neutral future without wanting to do the real work to get to 75%. As Recycle Rex emerges from his MRF and does not see his AB 939 shadow, the Industry 75% Plan will arrive early this Fall to stop the SB 1383 PAUSE.



## Bioenergy

CalRecycle solicited grant applications under ORG7 for \$155 million, with applications due on May 2, 2023, which will be awarded by the end of the year. There were 68 applications that were 'complete and correct' asking for \$388 million which is 2.5 times oversubscribed. The non-awardees will be put on a B-list for the next round of funding, which begs that the proposed Climate Bond measure include at least \$100 million per year for the next 3 years to reach the SB 1383 mandate of 75%. CalRecycle allocated \$78 million for composting and \$56 million for anaerobic digestion (AD) for projects that utilized food waste and green waste feedstocks. However, as the Bioenergy Association of California (BAC) contends every year urban wood waste to bioenergy is not eligible for any money. The same has occurred at the California Energy Commission, who at one time were champions of wood waste bioenergy projects. Both CalRecycle and the CEC will not fund wood waste bioenergy, even with non-combustion thermal technologies. However, SB 1109 (Caballero, 2022) extended the contracts for another 5 years for old-line utility-scale biomass combustion bioenergy, where 80% of the feedstock needs to be derived from forest sector waste, which continues to crowd out urban wood waste. AB 998 (Connolly, 2023) proposes a CEC study bill to determine the future viability of these facilities, suggest future upgrades, and document the benefits to California.

Biomethane from AD is Grant-eligible and could be used for transportation fuel or grid power. There are 17 AD applications asking for \$152 million where only \$56 is allocated. With CARB demoting renewable natural gas from transportation fuel to hard to decarbonize industries, the applications may be pivoting towards bioenergy which would be eligible for the BioMAT program.

### AB 998 (Connolly)

POSITION: Support

TOPIC: Biomass energy facilities: California Energy Commission (CEC) report. This bill would require the CEC, on or before December 31, 2025, to issue a report on the utility-scale biomass combustion facilities still in operation as of January 1, 2024. The bill would require the report to include various assessments of biomass combustion facilities still in operation as of January 1, 2024, and options to maximize the environmental benefits of these facilities. The bill would also require the report to include a recommended strategy to upgrade biomass combustion facilities, where appropriate, that considers impacts on disadvantaged, rural, forested, and agricultural communities, impacts on the ability to maintain existing capacity for managing forest or other excess biomass, the cost of upgrading facilities and financing opportunities, impacts of upgrading biomass combustion facilities on the procurement costs of the energy produced and the associated impacts to ratepayer costs, and job creation or job loss that may result from the strategy. The bill would require the report to include recommendations related to base-load energy generation and managing excess biomass if biomass combustion facilities cease operation and strategies related to processing waste and job training in areas where biomass combustion facilities cease operation.

The bill would require the CEC to include in the report an evaluation of the practicality and cost-effectiveness of upgrading utility-scale biomass combustion facilities that ceased operation before January 1, 2024, to determine whether such facilities could help California increase its capacity to manage forest and other excess biomass. The bill would require the CEC, in preparing the report, to coordinate with specified state entities for feedstock assessments for forest, agricultural, urban, and postfire waste, engage with and solicit feedback from the communities in which biomass combustion facilities are located and the applicable local governments, and provide opportunities for stakeholder and public input.

STATUS: In Senate Appropriations held under Submission since September 1, 2023

### SB 1109 (Caballero)

POSITION: Supported in 2022 and signed into law.

TOPIC. California Renewables Portfolio Standard Program: bioenergy projects. SB 1109 continued existing biomass facility contracts for another 5 years to 2028 with 80% forest biomass, which crowds our urban biomass but at least allowed 895,000 tons of capacity in 2022 but down from 1.75 million tons in 2015, and adds another 100 megawatts to the utility requirement. This modest proposal would provide for the additional beneficial reuse of almost 850,000 tons of stranded forest organic waste annually and ensure the state gets the added benefit of biomass power for a longer term. Past legislation required that at least 80 percent of the feedstock of an eligible biomass facility, on an annual basis, must be a byproduct of sustainable forestry management and also required that at least 60 percent of the feedstock must come from forestry high hazard zones.

This bill extended the electrical corporations' obligation to collectively procure their proportionate share of 125 megawatts of cumulative rated generating capacity from bioenergy projects to December 31, 2023, through financial commitments of 5 to 15 years, inclusive. The bill exempted from these requirements a local publicly owned electric utility that previously entered into a 5-year financial commitment under existing law under certain conditions. The bill would require any incremental procurement of electricity products from bioenergy resources by a new contract or contract extension of 5 years or longer in duration to be from a resource that meets emission limits equivalent to, or more stringent than, the best available retrofit control technology determined at the time of procurement by a new contract or contract extension.

This bill would require those entities with a contract to procure electricity generated from biomass that expires on or before December 31, 2028, to seek to amend the contract to include, or seek approval for a new contract that includes, an expiration date 5 years later than the expiration date in the contract that was operative in 2022.

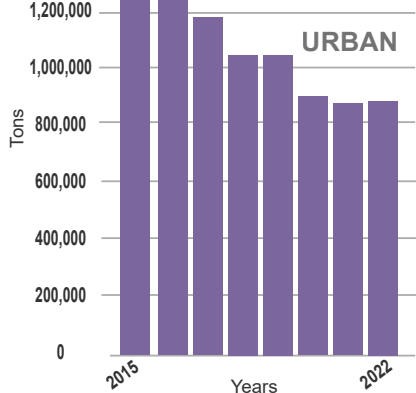
STATUS – Approved by the Governor September 16, 2022

## Urban Crowded Out

SB 498 (Lara, 2014) requires that the operator or owner of a biomass energy facility provide an Annual Report to CalRecycle regarding the total amount and type of biomass material accepted by the facility, starting with calendar year 2015 data. The [SB 498 annual reporting for 2022](#) shows how 3.78 million total tons were accepted in 2022. The urban sector provided 1.76 million tons for biomass energy in 2015, which has steadily declined to just 895,000 tons in 2022 (a loss of 865,000 tons over 8 years, losing about half the market). Urban wood chips are being crowded out by the forest and agricultural wood chips. We had hoped that those tons would go to mulch or bulking agents.

When comparing CalRecycle Waste Characterization Studies, there were 2.68 million tons of urban wood waste disposed of in 2014, 3.15 million tons disposed of in 2018, and 2.95 million tons disposed of in 2021. In addition, there is still 1.5 million tons of treated wood waste disposed of in 2021.

Meanwhile, as SB 1383 is being phased in, there are about 1.9 million tons of urban biomass that needs a home away from the landfill which could be a combination of SB 498 combustion, BioMAT bioenergy, SB 1383 procurement, compost feedstock, and/or hydrogen.



## SB 1383 Regs - Bioenergy

**Procurement of Recovered Organic Waste Products** is authorized in SB 1383, and is being phased in with AB 1985 (Rivas, 2022) CalRecycle has presented a fair share calculation with flexibility of procuring compost, mulch, bioenergy and RNG. The per capita procurement target is 0.08 tons of organic waste per California resident per year. CalRecycle has calculated the annual recovered organic waste product procurement target for each jurisdiction. One ton of organic waste recovered constitutes 650 kilowatt-hours of electricity derived from biomass conversion. The BioMAT programs allow biogas from wastewater treatment, municipal organic waste diversion, food processing, and co-digestion in the amount of 110 MW where about 21 MW is projected to be generated from urban biomass to bioenergy using gasification which is considered non-combustion thermal biomass conversion and counts as 100% diversion. It takes about 250,000 tons of biomass to produce 21 MW of bioenergy which needs to be in place by the end of 2025 when the program is scheduled to expire.

## SB 1383 Regs- Woody Mulch

**Procurement of Recovered Organic Waste Products** is authorized in SB 1383 and is being phased in with AB 1985 (Rivas, 2022). CalRecycle has presented a fair share calculation with flexibility of procuring compost, mulch, bioenergy and RNG. One ton of organic waste recovered constitutes one ton of mulch. Local government has embraced compost use with the use of [www.CaliforniaCompost.Net](http://www.CaliforniaCompost.Net) powered by Agromin, with some woody mulch use. Laws have been passed over the last 30 years to require CALTRANS to purchase mulch where just 10% of their right-of-way with just 1 inch of wood mulch could utilize 1.3 million tons per year. In 2018, CALTRANS was just 5% of the market for about 270,000 tons but is mostly STA compost with limited wood mulch use. An estimated 500,000 tons per year of woody mulch is a pragmatic market amount, but requires CalRecycle working with CALTRANS and County and City Public Works to roll out a plan.

## SB 498 Combustion Tons

AB 998 may define the future of biomass combustion tons as no other bill has since 2012. Urban wood waste has been crowded out by 865,000 tons over 8 years and is projected to decrease in the future to just 500,000 tons by 2030 as forest waste incentives dominate the market. Several legislative efforts have been attempted to update the 2012 Bioenergy Action Plan with a more comprehensive Organic Waste Scoping Plan. Three Aguiar-Curry bills: AB 144 (2019), AB 1567 (2020) and AB 1086 (2021-22) failed at multiple scenarios to develop funding and find a responsible agency to provide this type of leadership. These bills were killed in Appropriations by state agencies with inflated budget estimates to prepare such a study that had been prepared with existing staff in the past. The anticipated outcome was to reduce conflict among State policies intended to reduce net air and climate pollution while balancing the immediate needs of local communities. By default, biomass from the urban, ag and forest sectors are now competing. Instead, there should be harmonizing policies to harness the biomass for biofuels and for a FIRM bioenergy baseload for when the sun does not shine and when the wind does not blow.

## Woody Compost Feedstocks

Biosolid compost facilities have been utilizing woody biomass from the urban and agricultural sectors for years, which could be curtailed with the advancement of PFAS regulations, which could limit biosolids composting. With SB 1383 requiring about 3.3 million tons of food waste to be diverted with about 1/3 heading to AD and 2/3 heading to compost, there will be about 2 million tons of food waste on the market. The C:N ratio will need to be balanced out where the addition of more finely ground woody biomass will be needed to also add porosity. An estimated 650,000 tons per year of wood waste could have a home at food waste compost facilities. We look forward to the next CalRecycle Infrastructure and Market Analysis Report to assess the amount of wood waste that could be used as compost feedstock, as there are limitations. Note to the Sierra Club: we can not compost those 36 million trees that have died in California.

### The latest on Urban Wood Waste Markets from CalRecycle

#### **The California Compost Coalition**

is a registered Lobbying Coalition with the Fair Political Practices Commission (FPPC), created in 2002 by a group of compost operators in response to demands for increased recycling of organic materials & production of clean compost, bioenergy, anaerobic digestion, renewable natural gas, and biochar.

#### **CCC Members**

Agromin  
American Refuse, Inc.  
Atlas Disposal Industries LLC  
BLT Enterprises of Fremont  
Burrtec Waste Industries, Inc.  
California Waste Recovery Systems  
Cedar Ave Recycling and Transfer  
Contra Costa Waste Service, Inc.  
CR&R Environmental Services  
Gilton Resource Recovery  
Marin Sanitary Service  
Monterey Regional WMD  
Napa Recycling and Waste Services  
Northern Recycling Compost  
Peña's Disposal Service  
Pleasanton Garbage Service  
Quackenbush Mt. Compost  
Recology  
San Joaquin County Public Works  
Soiland Co., Inc.  
Sustainable Organic Solutions (SOS)  
Tracy Material Recovery  
Upper Valley Recycling  
Vision Recycling  
Zero Waste Energy, LLC.

#### **CCC Partners**

California Wood Recycling  
GreenWaste Recovery  
ReFuel Energy Partners  
Resource Recovery Coalition of CA  
Sonoma Compost  
Zanker Road Resource Management  
Z-Best Compost Facility  
Zero Waste Energy Development

#### **CCC Technology Partners**

CleanFleets.net  
Compost Manufacturing Alliance  
Engineered Compost Systems  
JRMA Architects Engineers  
Phoenix Energy  
Schaefer Systems International, Inc.  
Yorke Engineering LLC

#### **CCC Governmental Affairs**

Kayla Robinson, EEC  
Neil Edgar, Edgar & Associates, Inc.  
Evan Edgar, Edgar & Associates, Inc.  
Sean Edgar, Clean Fleets Advocates

The primary constituents of urban wood waste are: used lumber, trim, shipping pallets, trees, branches, and other wood debris from construction and demolition clearing and grubbing activities (as described on [CalRecycle's](#) website). The disposal waste generated from construction and demolition (C&D) activities represent a significant portion of operating expenses in addition to consuming valuable landfill space. C&D waste represents a significant part of the solid waste stream, with current estimates at 28 percent of the total tonnage. Its reduction will help meet the State-mandated diversion goal of 50 percent by 2000.

The quantities of urban wood waste documented in California vary depending on the study and source. Based on information compiled from local waste generation studies (1990), CalRecycle estimates that approximately 3.8 million tons per year (MTY) of wood waste (4.4 MTY in 2021) not including yard waste, are generated throughout the state. Of the 3.8 million tons generated, approximately 3.35 million tons are disposed of in permitted disposal facilities and the remaining 450,000 tons are diverted from landfilling.

A considerable amount of wood waste is also consumed by the biomass industry for boiler fuel to produce electricity, and steam in some cases. Based on figures supplied by the biomass industry, it currently consumes approximately 0.9 million tons of urban wood waste (in 2022). This is above and beyond the 3.8 million tons quantified in the previous paragraph. The biomass industry's fuel consumption is decreasing due to closures and curtailment of operations of private and public plants contracted to sell power to utilities in the state.

The markets for wood waste include use as: feedstock for engineered woods, landscape mulch, soil conditioner, animal bedding, compost additive, sewage sludge bulking medium, and boiler fuel. All these end uses have similar processing requirements in that the wood waste has to be separated from other wastes, cleaned by removing contaminants and fasteners, and processed through grinding or chipping. The final use of the wood waste often determines how clean and consistent the feedstock must be.

The most desirable option for wood waste management would be to reuse the structural elements or reuse of architectural elements which include casings, banisters, and mouldings.

Wood waste generated at residential and commercial wood frame construction sites offers a greater potential for reuse due to the ease of separating the wood during the various stages of construction. Cut-offs and scraps generated during the framing and trimming stages constitute a relatively clean and homogeneous waste stream that can make an excellent feedstock for engineered wood production. Demolition operations usually generate a far less desirable form of wood waste due to the non-uniform nature of the wood waste compounded by the commingling of the wood with other materials. The wood can still be reused, but generally has a lower value and is destined for uses such as boiler fuel or mulch feedstock. Wood waste processors may still be interested in this material for processing.

More from CalRecycle:

[Nonyard Wood Waste Report \(.pdf\)](#)

[Nonyard Wood Waste Report: Annual Update for 1995 \(.pdf\)](#)

[Wood Waste: Keep it Out of Landfills \(.pdf\)](#)