
STATE CLAIMS FUND FOR LONG-TERM FOREST RESIDUE SUPPLY CONTRACTS

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Executive Summary

California faces converging crises that make forest residue removal urgent: escalating wildfire risks from fuel-choked forests, mounting emissions from those wildfires that undermine the state's climate goals, and struggling rural forest economies. The state has set a target of treating one million forested acres annually, with newer goals calling for even more treatments and overall improvements in forest health.

Meeting these objectives requires more removal of woody material from forests and robust end-user markets for that material. Biomass facilities that convert forest residues into energy, biochar, biofuels, composite materials, and other valuable products can create the economic support for increased forest management. Developing or expanding these facilities, however, demands substantial capital investment, and lenders and investors cite the absence of long-term (10 years) forest residue supply contracts as a primary barrier to financing. Suppliers and biomass users are unable to enter 10-year supply contracts because of risks related to labor cost increases, fuel price increases, or changes in access to forest lands. The problem is circular: investors and lenders won't finance projects without guaranteed long-term supply, but suppliers won't guarantee supply for 10 years when they face uncontrollable risks such as labor cost increases, fuel price spikes, wildfire-induced supply disruptions, or restricted forest access. Insurers are not willing or able to write insurance contracts in most cases for longer than a year, let alone for the 10-year duration of a long-term forest residue supply contract.¹

To address the lack of insurance for critical forest management, this report outlines a solution to this problem through a state-established Long-Term Forest Residue Supply Contract Claims Fund (Claims Fund), much like California's Prescribed Fire Claims Fund which was established to address the lack of insurance for prescribed fire practitioners.

The Claims Fund would provide coverage for risks outside the control of both parties to long-term forest residue supply contracts: forest residue suppliers could claim reimbursement when specific external factors drive costs above contracted prices (labor costs, fuel costs, limitations to access to forest lands due to wildfire or changes in regulation), while biomass facilities could receive compensation when suppliers fail to deliver contracted volumes or when replacement supply requires paying prices higher than those contracted. Cost-sharing mechanisms, such as having the Claims Fund cover 90% of eligible claims with parties retaining 10% of risk, would ensure both sides remain incentivized to mitigate losses/costs from covered risks. To be eligible, forest residue suppliers should have ownership of, or legal control over, forest residues and be Licensed

Timber Operators (LTOs) operating under the direction or supervision of a Registered Professional Forester (RPF) or be an RPF as well as have contractor's licenses, workers' compensation insurance, demonstrated experience with forest residue harvesting, and documented access to forest lands. Biomass facility operators would similarly need appropriate licenses, workers' compensation insurance, a credible 10-year business plan, and evidence of operational capacity. Both parties would submit their long-term forest residue supply contracts for pre-certification to ensure commercial reasonableness before coverage begins.

Leveraging existing expertise with biomass users and forest residue suppliers, the Claims Fund program could be implemented and overseen by the Governor's Office of Business and Economic Development (GO-Biz), with day-to-day claims processing and fund administration contracted out to the California Earthquake Authority (CEA), the only state agency that directly operates a property and casualty insurance program.

Joint Powers Authorities (JPAs) already established in forested regions that possess knowledge about local economic and forest conditions could assist with eligibility determinations, pre-qualification assessments, and claims review. JPA involvement could include an advisory role, providing localized expertise to inform state-level decisions (i.e., supplier/facility qualifications, verify claims-related information, regional conditions affecting forest residue markets) or they could have a more formal role, in which they could process and decide claims for their region, subject to adherence to statewide rules and state oversight to ensure consistency and prevent conflicts of interest.

Like the Prescribed Fire Claims Fund, the Claims Fund would be established through legislation and capitalized directly through a General Fund appropriation which would avoid placing additional financial strain on biomass facility operators and forest residue suppliers who already operate in an economically challenged industry. By securing capital from the state rather than levying fees on industry participants, the fund would ensure that the cost of de-risking these essential 10-year supply contracts does not become an additional barrier to new or expanded biomass facilities.

The Claims Fund would be a targeted, practical response to a clearly defined market failure that private insurance is not able to solve. By selectively de-risking objectively measurable, uncontrollable cost and performance risks while preserving cost sharing and local participation, the Claims Fund would unlock the long-term contracts lenders and investors require, enabling new biomass investments and loans, supporting forest health and wildfire risk reduction, and strengthening rural economies across California.

I. Introduction

Creating a market for woody material residues removed from California forests is essential to reducing the risk of severe wildfires, reducing emissions from those wildfires, and improving the economy in forested areas of the state. Long-term supply contracts between suppliers (those who have ownership of, or legal control over, woody material removed from forests) and forest residue users are necessary to unlock capital investments and loans needed to fund the expansion or development of biomass projects that will use forest residues.

Woody forest residues can be transformed into a variety of valuable products. In the energy sector they can be used to produce heat and electricity, or they can be converted into biogas via anaerobic digestion for use in cooking, heating, or power generation. Through pyrolysis (thermochemical process that decomposes organic materials at elevated temperatures in the absence of oxygen) forest residues can also be made into biochar, which sequesters carbon and can be used as a soil enhancer (promoting water retention and increased crop yield), cement additive, or solid fuel. Residues can also be compressed into pellets or briquettes for efficient burning or converted into liquid biofuels like bioethanol, biodiesel, or bio-oil. Industrially, forest residues can be used to produce bioplastics, composite materials such as fiberboards and wood-plastic composites, activated carbon for filtration, and paper or pulp from non-wood fibers. Biochemical processes can further extract valuable chemicals. Woody forest residues can also serve as bioremediation materials, absorbing pollutants from soil and water. Emerging applications include the creation of bio-based nanomaterials like cellulose nanofibers, the production of green hydrogen through biomass gasification, and the development of bio-based adhesives and resins as sustainable alternatives to petroleum-based products.

Currently both suppliers and users of woody forest residues are unable to enter into the long-term (10-year) supply contracts lenders and investors want to see in place before making investments or loans to project developers due to the risk of non-performance both parties face. Risks include increased cost of supplying forest residue due to labor cost and fuel cost increases, cost increases due to increased distances traveled to obtain forest residue, and inability to access forest lands. Insurance companies are unwilling to write insurance for periods of longer than a year, which means that insurance is generally not available as a mechanism to de-risk long-term contracts for suppliers and off takers of forest residue.

Drawing on California’s successful experience with establishing the state-funded California Prescribed Fire Claims Fund to address the lack of private insurance for prescribed burn practitioners, it is recommended that California similarly establish and fund a Long-Term Forest Residue Supply Contract Claims Fund (Claims Fund). This fund would cover risks associated with pre-defined areas of non-performance of long-term forest residue supply contracts outside the control of the contracting parties in order to enable the parties to enter into the long-term supply contracts needed to unlock more capital for biomass facilities.¹

II. Long-Term Forest Residue Supply Contracts Needed to Increase Investment in Biomass Facilities

The following explains why long-term forest residue supply contracts are needed to unlock capital to expand and develop new biomass facilities. Design and operation of a Claims Fund is also discussed.

a. California Needs to Increase Removal of Woody Material from Forests to Reduce Risk of Wildfires, Meet Emissions Reduction Goals, and Improve Local Economies

California faces a growing risk of wildfires driven by forests choked with fuel, climate change-driven dryer conditions, changes in precipitation patterns, and higher temperatures. Wildfires have grown larger and increased in severity, causing more deaths, injuries, damage, and destruction to homes, businesses, and whole neighborhoods and communities.² The emissions from wildfires are also erasing emissions reductions from

¹ This Report and its recommendations were developed through extensive interviews and consultations conducted by Dave Jones and Clere Inc. with multiple stakeholders. Input from state agencies, including the Governor’s Office of Business and Economic Development and the California State Treasurers Office, informed understanding of state economic development priorities, finance mechanisms, and regulatory frameworks applicable to biomass businesses and emerging markets. Lenders and investors contributed insights on capital markets’ need for long-term forest residue supply certainty, a prerequisite for both project viability and investor/lender confidence. Industry participants articulated risks that pose operational and financial challenges including labor price volatility, fuel price fluctuations, wildfire-driven access restrictions, and regulatory changes, factors that necessitate risk mitigation for both suppliers and biomass users. Conservation perspectives were incorporated through consultation with several entities, while impact investment stakeholders provided insights on forest-based solutions and investor appetite for sustainable forest management.

² In 2018 the Camp Fire killed over 86 people, destroyed 18,000 structures, wiped out most of the town of Paradise, and cost over \$12.6 billion in insured losses. The wildfires in 2017 in Sonoma and Napa Counties and Ventura and Santa Barbara Counties killed 47 people, destroyed 8,600 homes, and caused over \$13 billion in insured losses. See Also Qiu, M., Li, J., Gould, C.F. *et al.* Wildfire smoke exposure and mortality burden in the USA under climate change. *Nature* (2025). <https://doi.org/10.1038/s41586-025-09611-w>. The

other California and national policies, undermining state, international, and private sector goals to reduce global warming and associated climate change.³

California has established a goal of fuel reduction on 1 million forested acres a year. More is needed.⁴ To meet and exceed this goal will require not only more removal of woody residues from forests, but also the development of end user markets, which will support increased forest residue removal. More end users and demand for forest residues means increased job opportunities and economic growth in rural forest economies and adjacent areas.

b. Long-Term Forest Residue Supply Contracts are Needed to Obtain Long-Term Project Finance from Lenders and Investors

To develop or expand existing forest residue-based businesses require capital. Project proponents need long-term financing, including loans and investments. According to interviews for this project with lenders, investors, and project developers, banks want long-term wood residue supply contracts in place before long-term loans can be made to project developers/operators. Long-term forest residue supply contracts help assure banks that the borrower has sufficient supply at an agreed price, thereby reducing the risk of default by the borrower related to lack of supply or unanticipated increased cost of residues. Investors also want long-term supply contracts in place to reduce risk to their overall investment.

Bain Consulting, in an exhaustive report with The Nature Conservancy on the challenges and opportunities associated with increasing forest residue utilization businesses in California, similarly found that:

authors projected that wildfire smoke could result in 71,420 excess deaths per year annually in the US by 2050 under a high-warming scenario—a 73% increase relative to the estimated 2011–2020 average annual excess deaths from smoke.

³ See Anne C. Mulkern, *California's 2020 Wildfires Negated Years of Emission Cuts*, E&E NEWS, (October 18, 2022). <https://www.scientificamerican.com/article/californias-2020-wildfires-negated-years-of-emission-cuts/>.

⁴ The California Air Resources Board 2022 Scoping Plan calls for accelerating the pace and scale of climate smart forest management to 2.3 million acres annually by 2025. See 'CARB 2022 Scoping Plan for Achieving Carbon Neutrality,' (December 2022). <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>. See Also "California's Nature Based Solutions Targets," Administration of Governor Gavin Newsom (April 2024). <https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Expanding-Nature-Based-Solutions/Californias-NBS-Climate-Targets-2024.pdf>.

“Industry participants consistently cited the need for predictable, long-term, and economical fiber supply as the most critical barrier to investing in California wood-processing infrastructure. This typically means a 10- or 20-year contractually guaranteed supply of residues from the landowner, with predictable diameter classes and species mixes.”

“Accelerating Forest Restoration: Stimulating a Forest Restoration Economy and Rebuilding Resilience in California’s Fire Adapted Forests,” Bain Consulting and The Nature Conservancy, (December 2020), at page 18. Lenders, investors, and project developers interviewed by the authors indicated that, at a minimum, 10-year forest supply contracts are needed to unlock the loans and investments necessary to expand and develop new biomass projects in California.

III. Absence of Insurance is a Barrier to Long-Term Forest Residue Supply Contracts

Despite investors’ and lenders’ desire to see long-term forest residue supply contracts in place before lending or investing, suppliers and users do not typically enter into long-term forest residue supply contracts. Both residue suppliers and facility developers interviewed for this project said that the risks of non-performance and increased costs outside the control of the supplier undermine the suppliers’ ability to meet or agree to a long-term price (even with an inflation adjustment) and preclude either side from entering into long-term (10 year) forest residue supply contracts.⁵

Both parties also indicated that if insurance or a substitute for insurance were available to cover the risk of non-performance or cost/price increases exceeding the contract price over a 10-year period, it would make it possible to enter into long-term forest residue supply contracts.

Unfortunately, insurers are unwilling to provide insurance for periods of longer than a year in almost all cases. A working group of insurance industry members and experts -- including the actuarial firm Milliman -- that convened expressly to consider insurance options for long-term forest residue supply contracts concluded that insurance is very

⁵ Forest residue contracts reviewed by the authors provide that the supplier will be paid its actual cost of acquiring the residues plus an additional fee per ton for overhead and administration costs, but in the price will not exceed an agreed price cap. We anticipate that long-term forest residue contracts would have similar provisions. In this report, when the contracted price in a long-term forest residue contract is referenced, it means the price cap where the contract is structured to include a price cap.

unlikely to be available for such long-term contracts for the foreseeable future. Insurers will only write insurance for one year while the parties need insurance to cover all 10 years of the contract. The working group also considered the application of an innovative parametric insurance solution to cover long-term forest residue contracts, but ultimately concluded that, like traditional indemnity insurance, parametric insurance would not be written by insurers for longer than a year, let alone a 10-year period.⁶

Private insurance is not and will not be available to de-risk long-term forest residue supply contracts.

IV. Derisking Long-Term Forest Residue Supply Contracts with a Claims Fund

With insurance unavailable to de-risk long-term forest residue supply contracts, it is necessary for the State of California to establish a Claims Fund as a substitute for insurance coverage to de-risk long-term contracts.

Bain similarly concluded it is necessary to de-risk long-term supply contracts with the assistance of a “third-party entity,” including the state.⁷

Fortunately, California has substantial experience establishing a successful claims fund, thanks to the California Prescribed Fire Claims Fund which was established to address the private insurance market failure to provide insurance for prescribed fire practitioners. The design of the Contract Claims Fund can draw on the successful design and implementation of that fund.

⁶ In 2024, a comprehensive insurance feasibility study was conducted by Adaptive Insurance Services with contributions from actuarial professionals at Milliman and other insurance industry experts. The study systematically evaluated risk transfer options available to biomass operators and suppliers. The working group determined that insurers will not write standard indemnity insurance for a 10-year period and rarely, if ever, for longer than a year. Further analysis determined that while a parametric insurance product is technically feasible, insurers also will not write a parametric insurance product for the duration of time needed to de-risk long-term forest residue supply contracts. See “California Wildfire and Forest Resilience Action Plan Feedstock Supply Insurance Advisory Group - Project Report,” Adaptive Insurance Services (2025). <https://californiaforestproducts.org/wp-content/uploads/2025/09/BiomassFeedstockSupplyParametricInsurance.pdf>.

⁷ See “Accelerating Forest Restoration: Stimulating a Forest Restoration Economy and Rebuilding Resilience in California’s Fire Adapted Forests,” Bain Consulting and The Nature Conservancy, (December 2020) Pages 199-20 (emphasis added). “Explore opportunities for third-party entities (e.g., **state agencies**, NGOs, financial institutions) to de-risk long-term supply contracts on federal lands. ... we believe it is important to explore potential opportunities for a third-party entity to further de-risk supply, whether through “buffer zones” to augment product supply in challenging times (e.g., during high levels of forest loss due to wildfire), financial backstops to support struggling industry operators, or some other means.”

a. California Prescribed Fire Claims Fund Precedent

When the private insurance market was not providing insurance for prescribed fire practitioners whose work is necessary to support increased sustainable forest management statewide, the State of California intervened. Without insurance, prescribed burns had been brought to a halt. In response, the state enacted and funded a California Prescribed Fire Claims Fund to meet the needs of prescribed burners and landowners for coverage in the event that a prescribed burn caused damage.

The California Prescribed Fire Claims Fund is administered by CalFire, who in turn contracts with the California Insurance Guaranty Fund to administer claims and the Fund. To be eligible for coverage, burns have to be pre-approved for coverage by the Fund and the prescribed fire has to be led by a certified “burn boss” who meets national certification standards related to the practice of prescribed fire. In the event that a pre-qualified burn causes damage to property or third parties, claims for compensation can be made against the Prescribed Fire Claims Fund, with a \$2 million coverage limit per burn. Similarly, eligibility for coverage under the Claims Fund should require professional accountability through a Registered Professional Forester (RPF) when forest management judgment is exercised.

The creation of the California Prescribed Fire Claims Fund allowed prescribed fire to resume in California. When landowners ask prescribed burn practitioners if they have insurance, the prescribed burn practitioner is able to point to the Prescribed Fire Claims Fund in lieu of insurance. Landowners have accepted pre-qualification approval from the Prescribed Fire Claims Fund in lieu of insurance and burns are successfully happening once more.

When a prescribed fire claims fund was first proposed by Dave Jones (an author of this report) as a way to address the lack of insurance for prescribed fire in California, one of the stated objectives was to develop experience data with prescribed fire claims to demonstrate to private insurers that prescribed fire was insurable. With the successful establishment of the Prescribed Fire Claims Fund, private insurers have resumed writing insurance for prescribed fire for practitioners covered by the Fund – in effect using Prescribed Fire Claims Fund eligibility to determine whether the prescribed fire practitioner can be privately underwritten. Private insurance coverage above the limits of the Fund is now available for burners for general liability, pollution liability, and professional liability.

As with the lack of insurance for prescribed fire, the State of California should establish a Claims Fund to cover certain defined costs or non-performance associated with long-term forest residue supply contracts.

b. State Claims Fund Needed to De-Risk Non-Performance of Long-Term Forest Residue Supply Contracts

There are several factors and issues to be considered in designing a Claims Fund. First of these is to determine who will be covered.

There are two parties to long-term forest residue supply contracts. Both need to be covered by the Claims Fund to de-risk the long-term contracts and make it possible for both parties to enter into the contracts. First there are the suppliers of forest residues. These are typically Licensed Timber Operators (LTOs) who harvest and remove forest residues from private and public forests. Forest residue supply contracts will usually have a price per ton of material supplied, to be paid to the entity harvesting the forest residues from the forest. There will also usually be an agreed amount of tonnage that the supplier will supply to the off taker over some period of time.

One of the major risks faced by the supplier in a long-term forest residue supply contract is that the costs of obtaining, transporting, and delivering the forest residue will rise above what was anticipated at the time the contract was signed. Costs may increase for a number of reasons outside the control of the forest residue supplier, including increased labor costs, fuel costs, and travel distance required to obtain the residue (e.g. , due to a wildfire which reduces supply in the area from which the supplier was originally sourcing) or inability to obtain access to forested lands from which the supplier intended to obtain woody material. While there may be reasons within the control of the supplier that could raise costs or otherwise effect performance, such as poor management, failure to secure sufficient labor or equipment, violation of state or federal laws and licensing requirements, etc., it is not recommended that cost increases associated with reasons within the control of the supplier be covered by the Claims Fund (just as insurance often excludes coverage for things within the control of the insured party).

The second party to the contract who needs Claims Fund coverage is the woody residue off taker. The risk they face is that the supply terms of the contract will not be met, which in turn will negatively impact their business plan and revenue stream, resulting in increased costs to obtain similar material elsewhere at what is likely to be a substantially higher

price. The increased costs or lack of supply could also cause the user to be unable to make loan payments or pay investors' promised returns.

The Claims Fund needs to cover both parties and the unique risks each face that are outside their control.

i. Coverage for Cost of Supplying Forest Residue Exceeding Contracted Price: Forest Residue Suppliers

The Claims Fund should cover the main risks faced by forest residue suppliers which are outside their control. The primary four risks identified include increased labor costs, increased fuel costs, the inability to obtain access to forested lands from which the supplier intended to source material, and increased travel distance to obtain the residue (i.e., wildfire reduces available residues in the planned source area or significant regulatory changes). The legislation or regulation that establishes the Claims Fund should specify those risks that will be covered for residue suppliers over the long-term contract.

The manifestation of most, if not all, of these risks can be objectively ascertained. There are surveys of labor costs, published data on fuel costs, and scopes of wildfires or other natural disasters. The increased travel necessary to source material can be verified as can denial of access to forested lands. Where determination of causation or scope of the risk depends on forest conditions, wildfire impacts, or access limitations, professional judgment by an RPF can be used and required. Limiting covered risks to those that can be objectively ascertained will eliminate friction in claims review and the adjustment process by the Claims Fund.

In order to share the risk with the supplier and avoid incentivizing suppliers to enter into contracts with prices lower than what is needed to cover future costs and profits anticipating that the Claims Fund will cover the difference, the Claims Fund coverage should cover some portion of the cost increases associated with the risks identified above a certain level of price increase associated with these risks. It should not cover all of the cost associated with the risks identified above. For example, claims payments could be for 90% of the claimed amount, with the supplier having to cover 10% of the cost increase. This is similar to what insurers do with deductibles or co-payments in insurance policies, where they require that some of the risk be shared with the policyholder to make sure they are incentivized to reduce risk even for those items outside their control.

ii. Coverage for Price of Forest Residues Exceeding Contracted Price or Lack of Supply: Biomass Utilizer

The risks faced by a business relying on woody residues which are outside their control also need to be covered to enable the biomass user to enter into a long-term forest residue supply contract. The primary risk they face is that the supplier will not provide the contracted amount of woody residue or that they will be forced to pay a higher price than contracted to obtain the woody residue supply.

If they are not provided with the contracted supply, the user can seek supply from other sources, but they will likely have to pay a higher price. The additional price and cost of obtaining the alternate supply is an objectively measurable manifestation of the risk of loss of supply.

The Claims Fund will not cover price increases for the biomass user from the original supplier above those contracted because the forest residues supplier can make its own claim to cover increased costs driven by the four identified risks outside of its control. A clause in the contract between the user and the supplier should clarify this responsibility.

The Claims Fund can cover some portion of the additional cost that the biomass user has to pay to obtain residue supply if the original long-term contract supplier fails to meet the supply term of the contract. The Claims Fund should not cover all the increased cost of supply, but rather share the risk with the biomass user and cover that portion of the additional cost above some level. For example, if the original supplier fails to provide forest residue tonnage and the biomass user has to go and obtain supply at a higher price elsewhere, the Claims Fund could cover the increased cost above the first 10% of the increased price or above some dollar per ton amount. In this way, the claims fund is sharing risk, and the biomass user is incentivized to reduce risk because they retain some of the risk.

A failure in supply could mean that the user is not able to obtain supply even at a higher price for some period time, which in turn impacts production and revenue from that production. The Claims Fund could also cover lost revenue due to the lack of forest residue supply availability above some percentage or level of lost revenue, again sharing risk with the biomass user.

V. Claims Fund Operation

Like the California Prescribed Fire Claims Fund, standards will need to be set for eligibility for coverage by the Claims Fund. Overall and claim-related coverage limits will need to be established, a state agency will need to be assigned to administer the Claims Fund, and funds will need to be appropriated to the Claims Fund by the Legislature and Governor in an amount sufficient to cover expected claims. Enactment of legislation will be required to authorize the establishment of the Claims Fund because there is no existing statute in California code which would authorize an agency to establish the Claims Fund, by regulation or otherwise.

a. Administration

The administration of the Claims Fund will need to be assigned to a state agency. The Governor's Office of Business and Economic Development (GO-Biz) has expertise regarding biomass users and forest residue suppliers. GO-Biz should be tasked to implement the Claims Fund program. The California Earthquake Authority (CEA), whose board consists of the Governor, Insurance Commissioner, State Treasurer, and two ex officio appointments from the Senate Pro Tem and Speaker of the Assembly, is the state agency with experience administering an insurance program (Earthquake Insurance). GO-Biz should contract with the CEA to administer the Claims Fund.

b. Eligibility

The California Prescribed Fire Claims Fund has requirements which must be met for a burn to be eligible to be covered by the Fund. To be eligible for coverage, the burn must be led by a burn boss who is certified under national standards set for prescribed fire burn bosses. Moreover, burn bosses must apply to the Prescribed Fire Claims Fund to pre-qualify the burn before the burn is undertaken. A similar approach should be taken with the Claims Fund. Certain minimum requirements for a supplier or user of forest residue should be required to be eligible for Claims Fund coverage.

i. Qualifications for Forest Residue Suppliers

The following standards should be established for forest residue suppliers to be eligible to make claims:

- Suppliers are those who own or have legal control over forest residues.

- Suppliers should be LTOs operating under the supervision or direction of an RPF, or be an RPF, with the RPF responsible for ensuring compliance with professional forestry standards, applicable law, and forest health objectives.
- Suppliers should have a contractor’s license and workers’ compensation insurance for employees.
- Suppliers should have some demonstrated experience with forest residue harvesting and delivery and demonstrated capacity to meet the terms of the contract, including having sufficient vehicles, other equipment, and labor.
- Suppliers should demonstrate that they have a reasonable expectation of access to forested lands to meet their supply commitment through documentation that can include contracts, letters of intent, or permits.
- Where forest residue sourcing, harvesting, or access decisions involve professional forestry judgment—including silvicultural considerations, forest health objectives, wildfire mitigation treatments, or regulatory access constraints, those activities shall be conducted under the supervision or direction of an RPF.

Long-term forest residue supply contracts should be submitted to the agency administering the Claims Fund to ensure that its terms are commercially reasonable and consistent with the capacity of the supplier.

When developing these standards, the agency administering the Claims Fund should consult with, and obtain recommendations from, the Joint Institute for Wood Products Innovation.

In setting these standards it’s also important that they are not so onerous that they make it unlikely that suppliers can meet them.

ii. Qualifications for Biomass Businesses

The following standards should be established for biomass facility developers/operators to be eligible to make claims:

- Developers/operators should have all necessary licenses and workers’ compensation insurance for employees.
- Developers/operators should have and submit a 10-year business plan with anticipated costs and revenues, residue supply needs, and a project development pro forma with identified sources of capital.

- Developers/operators should demonstrate some capacity and experience developing/operating a biomass facility.
- Developers/operators should submit for review the proposed long-term forest residue contract to ensure that it is commercially reasonable and consistent with the business plan.

When developing these standards, the agency administering the Claims Fund should consult with, and obtain recommendations from, the Joint Institute for Wood Products Innovation, which has expertise with regard to forest residue businesses.

iii. Pre-Certification

As with the California Prescribed Fire Claims Fund, both suppliers and biomass users who are party to a proposed long-term forest residue supply contract should submit the information above to the agency administering the Claims Fund for pre-certification to have claims covered by the Claims Fund.

It is possible that during the course of a 10-year contract the parties will decide to re-negotiate terms. Continued coverage by the Claims Fund should be contingent on submission of the re-negotiated terms to the administering agency of the Claims Fund before the revised contract is executed by the parties so the Claims Fund can confirm coverage is still warranted and both parties remain eligible.

The Claims Fund should also require parties to resubmit their qualification information every three years so the Claims Fund can determine that the parties to the contract are still eligible for coverage.

c. Coverage Limits

As with the California Prescribed Fire Claims Fund, the Claims Fund should have a coverage limit for claims from suppliers and claims from biomass users. To estimate the monetary amount of likely claims over time from suppliers and to determine a reasonable coverage limit, an analysis should be undertaken of the historical increase in labor costs, fuel costs, and increase in distance travelled and associated cost increases. And the historical impact of wildfires and US Forest Service denials of access on the cost of procuring forest residue should also be analyzed. A similar analysis can be done of the likely cost and revenue impact of supply shortfalls to determine a coverage limit for biomass suppliers. Both analyses are outside the scope of this report. Consideration

should also be given to providing a higher coverage limit for small business off takers, who face higher hurdles to access capital and for whom a higher coverage limit might provide additional benefit in securing capital for project development and operation.

d. Claims

Claims for reimbursement from the Claims Fund would be submitted to the agency administering it. Claims to be considered for reimbursement would be limited to the risks covered by the Claims Fund. Claims for reimbursement would need to document that the residue supplier or the biomass user had experienced one or more of the risks and associated losses covered by the Claims Fund. The agency administering the Claims Fund would create a claims form as well as standards for accompanying documentation to support the claim upon submission. Claims involving forest conditions, wildfire impacts on residue availability, or changes in regulatory access shall include supporting documentation prepared or certified by an RPF. The Claims Fund administrator may rely on such documentation in determining claim eligibility and payment amounts.

The agency administering the Claims Fund would review the claim and determine if it should be paid based on the defined risks covered and the portion of the loss that the Claims Fund would cover based on coverage rules. For example, if fuel costs rise to a level where the supplier's costs exceed the price agreed to in the long-term forest residue supply contract, the supplier would submit a claim for that portion of the difference that the Claims Fund covers. As discussed above, the rules for the Claims Fund may provide that some portion of the loss be covered by the supplier before it will cover the rest of the increase in cost. The agency administering the Claims Fund would review the claim and documentation submitted, independently verify that fuel costs have risen, and then determine if they will pay the claim and, if so, how much they will pay.

With regard to claims from forest residue off takers, the agency administering the Claims Fund will need to verify that the forest residue supplier is not supplying forest residue consistent with the terms of the contract.

As discussed above, the Claims Fund would have an overall coverage limit which could be applied annually, over the life of the 10-year contract, or both. The purpose of the overall coverage cap would be to limit the state's exposure and to make sure that funds are available to cover multiple claimants. The agency administering the Claims Fund would determine if the coverage limit, whether annual, over the life of the contract, or both, had been reached before determining whether and how much to pay on the claim.

e. Appropriation

The Legislature will need to appropriate funds into the Claims Fund to cover claims. Like the Prescribed Fire Claims Fund, we recommend that funds from the State General Fund should be appropriated to the Claims Fund. This has the advantage of not being dependent on a new special tax or fee on suppliers or biomass users who already are economically challenged and it will avoid opposition to funding the Claims Fund with a new broad-based tax or fee. The amount of funds to appropriate can be determined through the analysis discussed above by estimating future claims over a 10-year period. This analysis will also need to include an estimate of the number of biomass facilities likely to be developed and operating during the next 10 years which might be eligible to submit claims to the Claims Fund⁸ and the amount of forest residue from forest lands that is likely to be available.

VI. Joint Powers Authorities: Local Partner in Administering the Claims Fund

Joint powers authorities (JPAs) have been established in some forested areas to support the creation or expansion of forest residue supply chains and end users of those supplies.^{9,10} Other local governments are also considering the establishment of JPAs to support the development of a forest residue supply market and related biomass users.

JPAs can be an important local partner for the Claims Fund. With on-the-ground local knowledge, JPAs could assist the Claims Fund by advising on eligibility and prequalification for forest residue suppliers and biomass plant developers/operators. They could provide information regarding local area fuel costs, labor costs, and changes in availability of forest residues; provide information regarding other risks outside the control of the supplier which the Claims Fund might cover; and offer information on limits or changes in supply or price of residues which could help inform claims review.

A more formal role might also be established for the JPAs. The state could decide to have the Claims Fund delegate to local JPAs the handling and decision-making associated with

⁸ The University of California, Agriculture and Natural Resources, maintains an online map and tables with information on operational, in development, idle, proposed, and closed facilities that use forest residues, from which an estimate can be made with regard to the number of such facilities likely to be operating in the next 10 years . <https://ucanr.edu/site/woody-biomass-utilization/california-forest-products-and-biomass-power-plant-map>.

⁹ The JPAs include: Central Sierra Economic Development District, Eastern Sierra Council of Governments, Lake County Risk Reduction Authority, Marin Wildfire Prevention Authority, Northeast California Forest Biomass Authority, Zero Waste Sonoma.

claims for the JPA area, in coordination with the Claims Fund. There would need to be clear and explicit rules which would apply statewide that would govern how the JPAs would decide claims. The Claims Fund could oversee the JPAs handling claims to be sure that state rules for claims decisions were being followed. There would also need to be clear conflict of interest rules in place for JPA decision makers and Claims Fund decision makers.

VII. Conclusion

The State of California has a strong and important interest in supporting the establishment and expansion of a market for forest residue sourced from forest lands. Integral to this market is the expansion and development of biomass users or off takers who can make positive economic returns from use of forest residue. Capital is required to expand or develop new biomass businesses. Lenders, investors, developers, and operators of biomass facilities have identified long-term forest residue supply contracts of 10 years as important to enable loans and investment to occur.

Forest residues suppliers and biomass users confronted with risks and potential costs that are outside their control (i.e., fuel costs, labor costs, distance needed to obtain supply, changes in availability of supply) are unable to enter into long-term forest residue contracts without some mechanism to de-risk those contracts. Insurers are not willing to write insurance for periods longer than a year, and even new innovative insurance products like parametric insurance are limited by the same unwillingness to provide coverage for more than a year. Without insurance and faced with the risk of increased costs of unavailable supply, suppliers and off takers are not entering into long-term supply contracts.

The solution to this conundrum is for the state to establish a Claims Fund which can derisk those aspects of long-term forest residue supply contracts that are outside the control of the parties to the contract. Similar to the California Prescribed Fire Claims Fund, the state should enact a Claims Fund to make possible the long-term contracts that are needed to unlock more capital through loans and investments in new and expanded biomass-related businesses and facilities.

The success of California's efforts to reduce wildfire risks, protect people and communities, support forest health and biodiversity, and meet climate goals are directly dependent upon the state establishing a Claims Fund.

ATTACHMENT A

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. The Legislature finds and declares all of the following:

- (a) California faces a growing risk of wildfires driven by forests choked with fuel, climate change-driven dryer conditions, changes in precipitation patterns, and higher temperatures. Wildfires have grown larger and increased in severity, causing more deaths, injuries, damage, and destruction to homes, businesses, whole neighborhoods, and communities.
- (b) The emissions from wildfires are erasing emissions reductions from other California and national policies, undermining state, international, and private sector goals to reduce global warming and associated climate change. California fires in 2020 released roughly 127 million metric tons of greenhouse gas emissions, or about twice California's total emission cuts from 2003 to 2019.
- (c) California has established a goal of fuel reduction on 1 million forested acres a year. More is needed. To meet and exceed this goal will require not only more removal of woody residue from forests, but also the development of end-user markets, which will support its removal.
- (d) More end users and demand for forest residue means increased job opportunities and economic growth in rural forest economies and adjacent areas.
- (e) To develop or expand existing forest residue-based businesses requires capital. Project proponents need long-term financing, including loans and investments. Banks want long-term (10 year) forest residue supply contracts in place before long-term loans can be made to project developers/operators. Long-term forest residue supply contracts help assure banks that the borrower has sufficient supply at an agreed price, thereby reducing the risk of default by the borrower related to lack of supply or cost of forest residue. Investors also want long-term supply contracts in place to reduce risk to their investment and return on that investment.
- (f) Despite investors' and lenders' desire to see long-term forest residue supply contracts in place before lending or investing, suppliers and biomass users do not enter into long-term forest residue supply contracts. Suppliers face risks outside of their control including the increased cost of supplying forest residue due to labor cost and fuel cost increases, cost increases due to increased distances travelled to obtain forest residue, and inability to access forest lands.
- (g) The risks of non-performance and increased costs outside the control of the supplier undermine the suppliers' ability to meet or agree to a long-term price (even with an inflation adjustment) and preclude either side from entering into long-term (10 year) forest residue supply contracts.

- (h) Insurance companies are unwilling to write insurance for periods of longer than a year, which means that insurance is generally not available as a mechanism to de-risk long-term contracts for suppliers and off takers of forest residue.
- (i) When the private insurance market was not providing insurance for prescribed fire practitioners whose work is necessary to support increased sustainable forest management statewide, the State of California intervened. Without insurance, prescribed burns had been brought to a halt. In response, the state enacted and funded a California Prescribed Fire Claims Fund to meet the needs of prescribed burners and landowners for coverage in the event that a prescribed burn caused damage.
- (j) In order to enable forest residue suppliers and biomass users to enter into the long-term forest residue supply contracts necessary to obtain needed project development loans and investments, the State of California should establish and fund a Long-Term Forest Residue Supply Contract Claims Fund to de-risk long term woody forest residue contracts by covering the cost of supply increases which are outside the control of suppliers and biomass users.
- (k) The Legislature further finds that Registered Professional Foresters play a critical role in ensuring that forest residue removal for wildfire mitigation and forest restoration is conducted consistently with professional standards, forest health objectives, and public safety.

SECTION 2. The heading of Article 1 (commencing with Section 4840) of Chapter 8 of Part 2.5 of Division 4 of the Public Resources Code is added to read:

Article 1. Long-Term Forest Residue Supply Contract Program and Claims Fund

SEC. 3. Section 4840 is added to the Public Resources Code, to read:

4840 (a) For purposes of this section, the following terms have the following meanings:

- (1) "Forest Residue" means woody residues removed for wildfire mitigation, forest restoration projects, or the protection of public safety and infrastructure, excluding whole trees that are harvested for the primary purpose of producing energy or fuel.
- (2) "Forest Residue Supplier" means a person or business which owns or has legal control over forest residue and who is engaged in the business of supplying forest residue to off takers and whose forest residue sourcing, harvesting, or access decisions are conducted under the supervision or direction of a Registered Professional Forester licensed in the State of California. Forest residue suppliers include Licensed Timber Operators and Registered Professional Foresters.
- (3) "Forest Residue User" means an end user of forest residue including, but not limited to, those producing combined heat and power; or producing biogas for any use via gasification, pyrolysis, or anaerobic digestion; or producing biochar; or producing pellets or briquettes for efficient burning; or converting biomass into liquid biofuels like bioethanol, biodiesel, or bio-oil; or producing bioplastics; or producing composite materials such as fiberboards and wood-plastic

composites; or producing activated carbon for filtration; or producing other advanced material development from woody substances.

- (4) "Long-Term Forest Residue Supply Contract" means a contract between a forest residue supplier and a biomass user which sets forth the price, tonnage, and other terms associated with the supply of forest residue for a duration of no less than 10 years.
- (5) "Claims Fund" means the Long-Term Forest residue Supply Contract Claims Fund established pursuant to subdivision (c).
- (6) "Department" means the Governor's Office of Business and Economic Development (GO-Biz).
- (7) "Program" means the Long-Term Forest Residue Supply Contract Program established pursuant to subdivision (b).
- (8) "Joint Powers Authorities" means those joint power authorities whose mission includes supporting the development of markets and users of forest residue, including, but not limited to, Central Sierra Economic Development District, Eastern Sierra Council of Governments, Lake County Risk Reduction Authority, Marin Wildfire Prevention Authority, Northeast California Forest Biomass Authority, and Zero Waste Sonoma.

(b) The Long-Term Forest Residue Supply Contract Program is hereby established, to be administered by GO-Biz, to increase the use of long-term forest residue supply contracts between forest residue suppliers and biomass users and to reduce barriers for long-term forest residue supply contracts. The Program includes administration of the Long-Term Forest Residue Supply Contract Claims Fund.

(c) (1) (A) The Long-Term Forest Residue Supply Contract Claims Fund is hereby created in the State Treasury to support coverage for increased costs for suppliers which exceed the price agreed in a long-term forest residue supply contract and to support coverage for increased costs to biomass users associated with forest residue supply as agreed within a long-term forest residue supply contract. The Claims Fund will allow a supplier to meet the terms of a long-term forest residue supply contract. The moneys in the Claims Fund shall be under the control of the Department, and the Department, or the third-party administrator with whom the Department contracts pursuant to subdivision (d), is authorized to direct payments for claims from the Claims Fund, consistent with this section and the guidelines adopted by the Department pursuant to subdivision (e).

(B) There is hereby appropriated _____ to fund the Long-Term Forest Residue Supply Contract Claims Fund.

(C) Notwithstanding Section 13340 of the Government Code or any other law, all moneys deposited or transferred into the Claims Fund, including pursuant to subparagraph (B), shall be continuously appropriated, without regard to fiscal years, to the Department for purposes of this section.

(2) (A) Except as provided in subparagraph (B), notwithstanding any other law, the Controller may use moneys in the Claims Fund for cash flow loans to the General Fund as provided in Sections 16310 and 16381 of the Government Code. Interest shall be paid on all moneys loaned

to the General Fund and shall be computed at a rate determined by the Pooled Money Investment Board to be the current earning rate of the Claims Fund.

(B) This paragraph does not authorize any transfer that would interfere with the Department's ability to carry out the purposes of this section.

(d) The Department shall contract with the California Earthquake Authority to serve as a third-party administrator to administer or to assist in administering the Claims Fund, including, but not limited to, managing and operating the Claims Fund, adjusting claims made to the Claims Fund, and paying claims from the Claims Fund. Notwithstanding any other law, advertising, competitive bidding, and protest requirements, and the requirement for Department of General Services approval, do not apply to a contract entered into by the Department with the California Earthquake Authority pursuant to this subdivision.

(e) The Department shall consult with the Joint Institute for Wood Products Innovation to establish guidelines governing the program and the administration of the Claims Fund, including the payment of claims from the Claims Fund. The guidelines shall include, at a minimum, all of the following requirements:

- (1) An eligible claim shall be based on either of the following:
 - (A) An increase in costs to supply forest residue which exceed the agreed price in a long-term forest residue contract, or
 - (B) An increase in the cost of obtaining forest residue for a biomass user which exceeds the agreed price in a long-term forest residue supply contract or lost revenue because of the failure to supply forest residue pursuant to the terms of the contract.
- (2) Eligible claimants shall be limited to:
 - (A) Forest residue suppliers who have entered into a long-term forest residue supply contract with a biomass user and who operate under the supervision or direction of a Registered Professional Forester responsible for ensuring compliance with professional forestry standards and applicable state and federal law, and
 - (B) Biomass users who have entered into a long-term forest residue supply contract with a forest residue supplier.
- (3) Costs eligible to be paid through claims to the Claims Fund shall be limited to the following:
 - (A) For forest residue suppliers, the following costs which result in the cost of supplying forest residue exceeding the delivery price agreed to the long-term forest residue supply contract:
 - (1) increased labor costs,
 - (2) increased fuel costs,
 - (3) cost increases due to the inability to obtain access to forested lands from which the supplier intended to obtain forest residue, and/or
 - (4) cost increases due to increased distance required to be travelled to obtain the forest residue, including, but not limited to, cost increases due to wildfires or regulatory changes.
 - (B) For biomass users:

- (1) cost increases resulting from having to obtain forest residue supply from another source due to the forest residue supplier failing to meet the agreed supply or price terms of the contract, or
- (2) lost revenue in the event that the biomass user is unable to find an alternative source of supply.

(4) A claim shall not be paid by the Claims Fund unless, at a minimum, all of the following conditions are met:

(A) The Department has reviewed and approved the long-term forest residue contract to ensure that its terms are commercially reasonable and consistent with the capacity of the supplier. The Department shall complete its review of contracts within no more than 120 days from submission.

(B) The forest residue supplier is a Licensed Timber Operator operating under the supervision or direction of a Registered Professional Forester, or is a Registered Professional Forester, and has the necessary business licenses, workers' compensation insurance for employees, and any other permits needed to supply forest residue, and can demonstrate experience with forest residue harvesting and delivery, and can demonstrate capacity to meet the terms of the long-term forest residue supply contract into which they are entering, with sufficient vehicles, other equipment, and labor. The forest residue supplier needs to demonstrate that they have a reasonable expectation of access to forested lands to meet their supply commitment through documentation that can include contracts, letters of intent, or permits.

(C) The biomass user has all necessary licenses and workers compensation insurance for employees. The biomass user shall submit to the Department for review and approval a 10-year business plan with anticipated costs and revenues, feedstock supply needed, and a project development pro forma with identified sources of capital. The biomass user shall also demonstrate capacity and experience developing or operating a biomass facility. The biomass user shall demonstrate that it has made all reasonable efforts to replace the forest residue under the terms and conditions of the contract.

(D) The Department determines and pre-certifies the forest residue supplier and the biomass user are in compliance with the guidelines and eligible to make claims to the Claims Fund in connection with a long-term forest residue supply contract. The Department shall review at least bi-annually the eligibility of forest residue suppliers, biomass users, and the underlying long-term forest residue supply contract to make claims. In the event the Department determines a previously approved and certified forest residue supplier, biomass user, or long-term forest residue supply contract is no longer eligible to make claims, then the Department shall notify the parties in writing no later than 5 days after the determination.

(E) For claims involving forest access limitations, wildfire impacts on available forest residue supply, changes in forest management conditions, or regulatory constraints affecting supply availability, the Department shall require documentation prepared, signed, or certified by a Registered Professional Forester demonstrating the basis for the claimed impact and its relation to conditions outside the control of the supplier.

(5) The maximum amount the Claims Fund shall pay for losses arising from any one claim is \$_____. The Department shall also consider and decide whether to require claimants to share in the cost of the claim by retaining a share of the cost and by providing that the Claims Fund will pay

only a percentage of the total cost of claims, but in no event shall the payment be less than 80% of the claim.

(f) The Department shall post the guidelines established pursuant to subdivision (e) on its website.

(g) The Department shall consult with the Joint Powers Authorities in the development of the guidelines, the eligibility of forest residue suppliers and biomass users, and long-term forest residue supply contracts in the geographic areas covered by the Joint Powers Authorities and the Department may delegate to a Joint Powers Authority the administration of claims or consult with the Joint Powers Authority with regard to claims in the area of the Joint Powers Authority.

(h) Notwithstanding any other law, the state's liability for all claims for covered losses established pursuant to this section and the guidelines developed by the Department pursuant to subdivision (e) shall be limited as described in this section and to the amount in the Claims Fund.

(i) The Administrative Procedure Act (Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code) does not apply to the guidelines developed by the Department pursuant to subdivision (e) and used by the Department or a third-party administrator with whom the Department contracts pursuant to subdivision (d) to implement the program and to administer the claims Fund.

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