

Lost in the Woods: Mendocino Redwood Company Quietly Abandons Investment Plans for Biomass to Hydrogen Project

An important case study for understanding the infeasibility of biomass to hydrogen pathways for decarbonization.



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TOP LEVEL TAKEAWAYS:

- One of the biggest timber companies in the state informed California climate authorities in summer 2024 that they were considering a US\$400 million investment in a woody biomass to hydrogen facility in Mendocino County.
- The State of California financed a series of feasibility studies to evaluate the biomass to hydrogen proposal.
- While nearing completion of the last round of feasibility studies in summer 2025 the company apparently abandoned the biomass to hydrogen project.
- The challenges of guaranteeing safe storage of hydrogen fuel, known to be extremely volatile, was exposed as a major, if not decisive, constraint on the feasibility of the entire proposal.
- Despite some anecdotal indications from company representatives publicly sharing the decision to no longer pursue the biomass to hydrogen project, the company has not yet responded to inquiries about their public position on the US\$400 million biomass to hydrogen project investment that state authorities had been informed that the company was exploring.
- This case study reveals the hard truth that securing hydrogen fuel from woody biomass feedstock is hard, expensive, dirty, and dangerous. ***Biomass to hydrogen, despite all the public and private sector hype, is essentially a bioenergy technology that has never been proven at scale.***

INTRODUCTION

Producing hydrogen requires very significant energy - from fossil fuels or renewable sources. Almost all hydrogen production currently relies on the steam reformation of fossil gas, an energy and emissions intensive process. Proposals to use biomass power to generate electricity to produce hydrogen prove ludicrous given [the extreme inefficiency and vast greenhouse gas emissions](#). Fundamentally, this is because relying on photosynthesis to convert solar radiation to useful energy is extremely inefficient. Processing a woody biomass feedstock with gasification technology is dirty, energy intensive and presents

myriad efficiency challenges. [That inefficiency is even far greater when several further stages of processing are needed to achieve any output of a fuel product such as hydrogen](#). ***Using a process involving gasification of biomass and then further processing of the resulting gas to separate out hydrogen is perhaps the least technically promising and most inefficient approach yet proposed.***

Our organization Biofuelwatch has a long history of tracking bioenergy technologies, including nascent gasification technologies that would be



employed for woody biomass to hydrogen projects

It was in August 2022 that we published a report titled [Why Hydrogen from Bioenergy Cannot Reduce Greenhouse Gas Emissions](#). This report focused largely on the inefficiencies and high emissions of producing so-called ‘green hydrogen’ by using biomass electricity generation to electrolyze water. It was in this report that our organization also identified the challenges and uncertainties of using gasification to separate out hydrogen from a woody biomass-based feedstock.

Over the years the idea of securing hydrogen from subjecting woody biomass feedstock to a gasification process emerged as [a popular yet hypothetical pathway for](#)

[decarbonization](#). Implementing these technologies, if feasible, would promise a multitude of environmental, climate, public health and economic harms.

This ‘*Lost in the Woods*’ briefing describes a proposed biomass to hydrogen project that was to be sited, built and operated in the heart of the California redwoods. Our research exposes the lack of transparency and public accountability that surround the promotion of bioenergy projects in California. The investigation of this proposed project leveraged the California Public Records Act (PRA) to secure governmental documents that have not otherwise been made publicly available. Our review exposes the reality that converting woody biomass into hydrogen is hard, expensive, dirty and dangerous.



Picture: Humboldt Redwood Company (HRC), Scotia biomass plant in Humboldt County. This facility has been the site of serious accidents and ongoing controversy. Photo credit: Gary Hughes/Biofuelwatch.

This case study ultimately confirms what our organization has been saying for many years: that bioenergy pathways like biomass to hydrogen are infeasible due to economic and technological constraints, not to mention the promise of risks, hazards and harms that make such a project even harder to justify, mitigate and bring to fruition.

BACKGROUND

Because of our diligent and detailed monitoring of regulatory processes at the California Air Resources Board (CARB) our organization identified that in August 2024 Mendocino Redwood Company (MRC)¹ sent [a letter to CARB during the Low Carbon Fuel Standard \(LCFS\) amendment process](#) expressing opposition to the perceived restrictive nature of the definition of ‘forest waste’ in the proposed LCFS amendments.

The [letter from MRC](#) described how the definition of ‘forest waste’ was specifically of concern to the company because of how a restrictive definition of forest waste would negatively impact the economic feasibility of a US\$400 million investment the company was exploring for siting, building and operating a



Picture: Controversy pursued Humboldt Redwood Company when they logged old growth forest on Rainbow Ridge in Humboldt County, resulting in protests and road blockades.

¹ A footnote on MRC: Mendocino Redwood Company (MRC), Humboldt Redwood Company (HRC) and Mendocino Forest Products (MFP) own and manage more than 400,000 acres of timber lands in the heart of the redwood temperate rainforest ecosystem. These companies and their subsidiaries are known in some California finance circles as the “Mendocino Family of Companies.” All of these companies are owned and controlled by

biomass to hydrogen facility at their Ukiah sawmill, in Mendocino County, on the North Coast of California. Such a significant investment of capital would be the largest singular investment in California wood products industry manufacturing capacity in decades.

It is in this [August 2024 letter](#) to CARB that specific reference is made to the grant funding that MRC had received from the California Department of Forestry and Fire Protection (CalFire) to do a detailed feasibility study of the biomass to hydrogen proposal.

There were other indications on the North Coast that MRC was exploring developing a biomass to hydrogen project.

MRC, through their affiliate Humboldt Redwood Company (HRC), which operates a notoriously dirty ~28MW biomass electricity generation plant at their sawmill in Scotia, in Humboldt County, also had made [statements](#) to the [Redwood Coast Energy Authority](#) (RCEA) describing their pursuit of a biomass to hydrogen project in Ukiah. It

[Sansome Partners](#), an investment firm of the Fisher family, an aristocratic California family infamous for their Gap clothing empire, as well as for stealing the beloved Athletics baseball franchise away from their long time home in Oakland. For the purpose of this briefing, we will use the simple Mendocino Redwood Company (MRC) name in reference to the entirety of the company.

is from this evidence that we know for an incontrovertible fact that MRC was considering and has looked in a detailed

technical manner at the prospects of developing a biomass to hydrogen facility at their Ukiah sawmill.

INVESTIGATION

Biofuelwatch staff leveraged the California Public Records Act (PRA) to acquire [documents](#) associated with the CalFire funded feasibility study done by MRC in regards to their biomass to hydrogen proposal. We have also made inquiries of community members and elected officials in both Mendocino and Humboldt Counties as to their knowledge of the company interest in biomass to hydrogen, in an effort to ascertain what they had heard about the possible project.

The [documents](#) acquired by our organization from CalFire under the PRA request provide a solid timeline and describe the progress of the feasibility study. Included in the PRA release was [the August 2025 final report from MRC to CalFire that described the results of the feasibility study](#). The company has to this point made no effort to share any information publicly about their exploration of a biomass to hydrogen project in Ukiah, other than to make passing mention more recently within the space of deliberations at the RCEA that the company has decided against the project. This report back on comments from HRC representatives during deliberations at the RCEA is based on anecdotal evidence provided to Biofuelwatch staff by email from local residents active before the RCEA.

The company has made no other public indications about the prospects for the significant investment project that they touted in their August 2024 letter to CARB, neither to announce that they are moving forward with the project nor to state that they have abandoned the project. We have inquired through diverse channels on multiple occasions of the company as to any public statements that might be shared about the biomass to hydrogen proposal. As of publication the company has not yet responded to any of our inquiries.



Picture: Google Maps image of MRC Ukiah sawmill

Interestingly, the Mendocino County supervisor whose district includes the MRC Ukiah sawmill property responded to our January 2026 email inquiry about the MRC biomass to hydrogen proposal writing that they had not previously heard of the project.

FINDINGS

The following are some of the relevant findings from Biofuelwatch staff review of documentation acquired from the PRA request to CalFire about the feasibility study grant.

- Vendor Challenges: The project design focused on a *fluidized bed gasification* technology. Review of the PRA documents infer that the original vendor identified for the provision of the biomass gasification technology was dropped from the project before the feasibility study really picked up momentum, and a search for a new Vendor was renewed in the early stages of the study. Eventually [ICF](#), the company working for MRC to do the feasibility study, did identify a new vendor for provision of the gasification technology: [InEnTec](#). After several months of back and forth about project design questions and possible costs for acquiring appropriate equipment for securing hydrogen from biomass, it seems that the IFC and MRC relationship with InEnTec broke down. As a matter of fact, review of the progress reports on the CalFire grant imply that the failure to identify and secure an experienced Vendor that could provide adequate gasification technology at a cost-effective price was relevant to the apparent decision of the company to essentially abandon the project. No

firm numbers regarding even hypothetical prices for the technology necessary for an industrial biomass to hydrogen plant are available anywhere in the documents we secured from the PRA.

- Scale Challenges: The required scale of the original proposed project, once assessed within the parameters of real-world design necessities, turned out to be much larger than could be accommodated on the available foot print of the MRC Ukiah sawmill site. Challenges with the provision of feedstock at the amounts necessary to make the economics of the project work were also raised in the final report. These feedstock constraints were associated with limitations in operations at the sawmill itself. In particular, an anticipated reduction in production of sawn lumber at the sawmill resulting in a subsequent reduction in available feedstock was listed as a limiting factor for cost-effective biomass to hydrogen production. It was largely this question of unsupportable scale that resulted in the suggestion in the final report to CalFire that any further feasibility studies for potential biomass to hydrogen production be focused on a much-reduced project size that would have to be executed

in high level coordination with a competent product offtake partner.

- Hydrogen Storage Challenges: The requirement that any future biomass to hydrogen facility at the MRC Ukiah sawmill be reduced in scale and developed in strict accordance to the capacity and competency of a product offtake partner reflects the feasibility studies understated conclusion that the safe storage of hydrogen for any period of time in any significant amounts at the proposed Ukiah sawmill facility site was a much greater and more serious endeavor than anyone had imagined. There is no discussion of the risks of hydrogen storage anywhere in the documents we secured through the PRA, but clearly the challenges of guaranteeing safe storage of hydrogen fuel were exposed as a major, if not decisive, constraint on the feasibility of the entire proposal. Hydrogen is well recognized to be an energy intensive, risky and highly volatile fuel product to maintain in storage.
- Oxygen Expense Challenges: The final report is explicit in describing how the likely costs for procuring pure oxygen for the gasification process was far beyond what was anticipated and exposed extreme vulnerabilities in the economics of the project.

- Electricity Expense Challenges: The early version of the proposed project included a ~5MW biomass burning electricity generating element. This added further to the unsupported scale of the originally studied version of the project, as well as contributing to future permitting challenges as described below. A biomass to hydrogen project that relies on purchasing electricity from the grid presents enormous economic challenges. As such the cost of the electricity needed for biomass to hydrogen production also emerged as a major constraint on the feasibility of the project.



Picture: Calpella wood pellet plant, located just north of the MRC Ukiah sawmill site in Mendocino County. Photo credit: Gary Hughes/Biofuelwatch.

- Permitting Challenges: The final report to CalFire is explicit in describing serious constraints due to the complicated land use and air quality permitting processes that would be required to move forward



with a biomass to hydrogen project of any scale. This contrasts with how MRC sited, constructed and began operating a 30,000 tons/year wood pellet plant in Calpella, just north of Ukiah, without any public notice or environmental review. Biofuelwatch reported on the public controversy around the Calpella wood pellet plant back in 2020 (see [Dirty Wood Pellet Plant in California Redwood Region](#)

[Raises Further Doubt About Biomass Sustainability Standards](#)). In the case of developing a biomass to hydrogen project at their Ukiah sawmill property the company's path to avoiding regulatory review and skirting public engagement, as they had with the Calpella wood pellet plant, was closed from the beginning.

CONCLUSION

As of this writing we still do not know the public position of MRC regarding the possible US\$400 million investment that featured in their August 2024 letter to CARB. The unresponsiveness of the company to our efforts to receive a public statement regarding the status of their proposed biomass to hydrogen project raises questions about their commitment to being a responsible and transparent corporate neighbor.

Despite the reluctance of MRC to make a public statement about their proposed investment it is possible to assess the current status of the project. By our review of the materials included in the PRA release, and by compiling anecdotal evidence provided to Biofuelwatch staff by stakeholders and decision makers across the region, it is apparent that MRC has abandoned the pursuit of developing a biomass to hydrogen project at their sawmill in Ukiah.

The final report on the grant for the feasibility study does not fully discard

the idea of eventually finding the means to pursue biomass to hydrogen production. The final report instead suggests continuing with further feasibility studies for the development of a greatly reduced biomass to hydrogen project that would require a detailed and stringent offload agreement for produced hydrogen with a partner that could facilitate that any produced hydrogen be transported offsite immediately. Storing hydrogen on site in any significant quantity for longer than 24-hours is essentially a non-starter.

The [final report](#) back to CalFire leaves the door open for a future biomass to hydrogen project, though admittedly much smaller than the original concept. The final report tends to avoid a hard final assessment about whether or not biomass to hydrogen is truly feasible. Nevertheless, **the final report provides an abundance of evidence that producing hydrogen from biomass is hard, expensive, dirty and dangerous.**

While recognizing the equivocation of the final report about the feasibility of the technology, it is clear that MRC is abandoning development of a biomass to hydrogen unit at their Ukiah sawmill. This is a turn of events that merits attention and discussion. The risk and threat of the diversion of critical and scarce climate mitigation resources into pursuing energy options that are not

practical nor safe in the real world is all too real. Because of the continued hype from elected officials, public agencies and the private sector celebrating the promise of biomass to hydrogen it is an imperative that a spotlight be put on this case study that exposes the infeasibility of the biomass to hydrogen pathway to decarbonization.

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Biofuelwatch provides information, advocacy and campaigning in relation to the climate, environmental, human rights and public health impacts of large-scale industrial bioenergy.