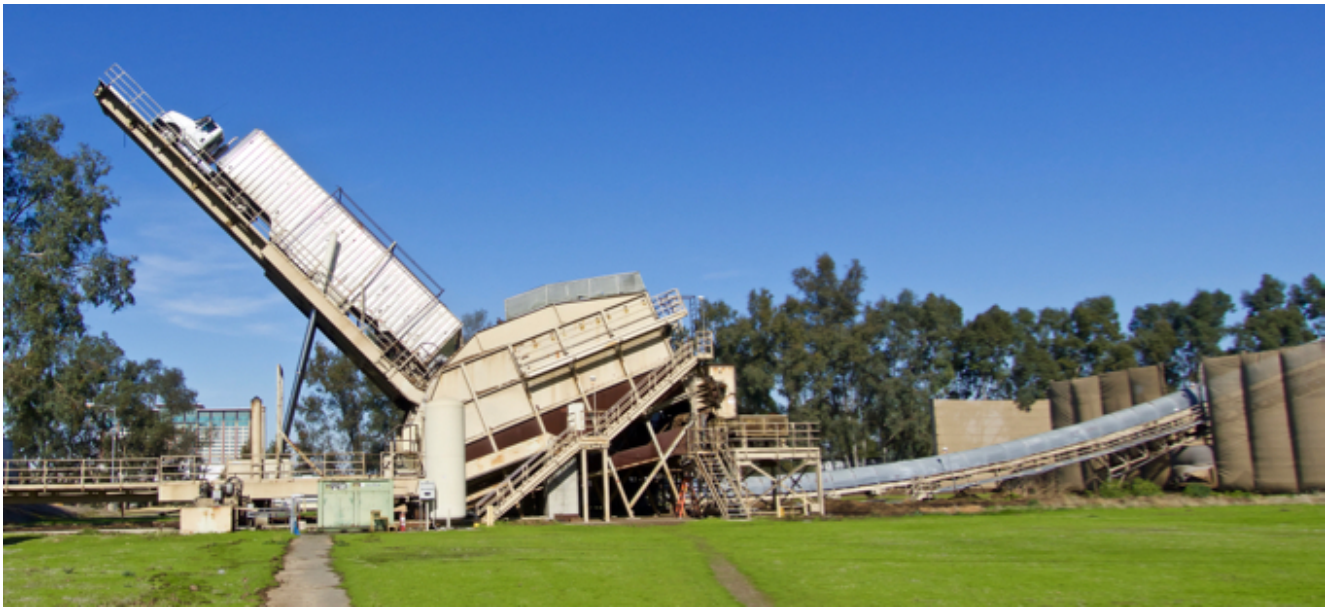
# Plenty of dead trees, too few biomass facilities



A truck delivers biomass to the Rio Bravo plant in Rocklin. It then goes up the conveyor belt. Photo/Kathryn Reed

**Publisher's note:** ***This is the second of two stories about California's tree mortality and how biomass is one solution to the problem.***

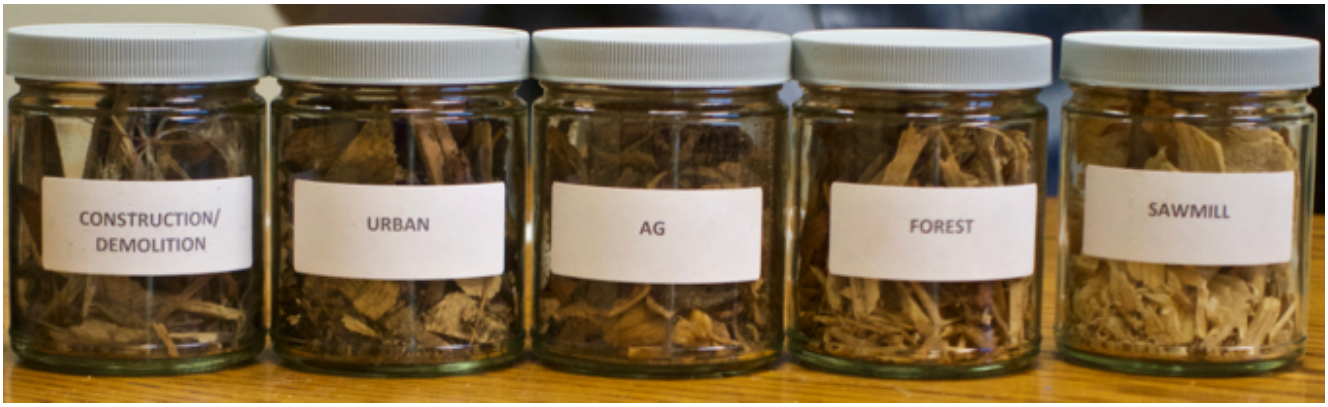
**By Susan Wood**

If a record 129 million dead and dying trees collected over the last seven years doesn't electrify California to get serious about renewable energy like biomass, then perhaps nothing will.

State and local officials along with stakeholders have started to see the light more than ever in terms of processing biomass, which is organic matter used as fuel.

A study released this fall by a working group assigned by the California Resources Agency took a collective swipe at proposing the modern method as an alternative to burning slash

piles, or worse yet, allowing them to decompose and present a fire hazard. The multi-agency effort was spawned from Senate Bill 859, which was signed by Gov. Jerry Brown last year as a comprehensive $900 million climate control package intended to reduce carbon emissions.

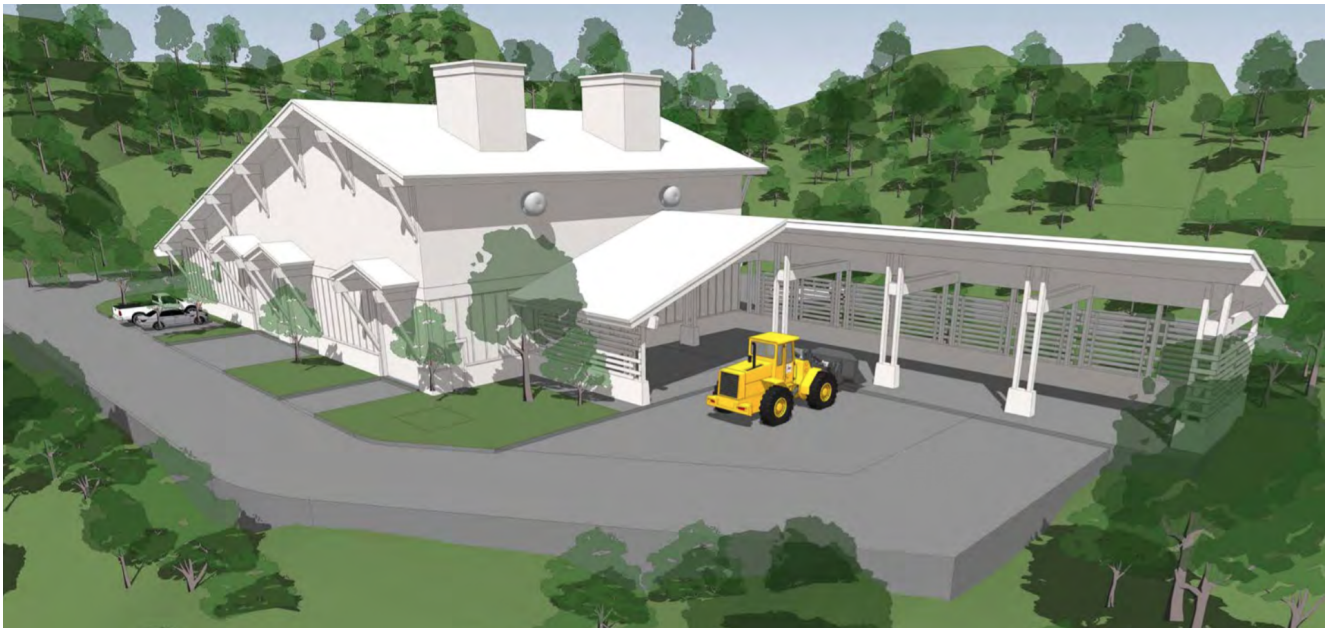



It’s not just forest material that can be turned into electricity. Photo/Kathryn Reed

Three times as many defunct plants versus operational biomass facilities exist in the state. Regulations are cumbersome. Space is necessary. And establishing a market can be tricky.

Placer County is wrestling with all three challenges in its creative quest with green waste management at its Eastern Regional Material Recovery Facility “MRF,” once called the landfill outside Truckee.

The plant is already surging with efficiency in what it does with area residents’ trash. Now it wants to transfer some of that waste it collects from contractors clearing the mass timber out of the forest into a biomass fuel.



A rendering of what the Cabin Creek facility between Tahoe City and Truckee could look like. Rendering/Phoenix Energy

**Placer seeks to establish a place close to the basin**

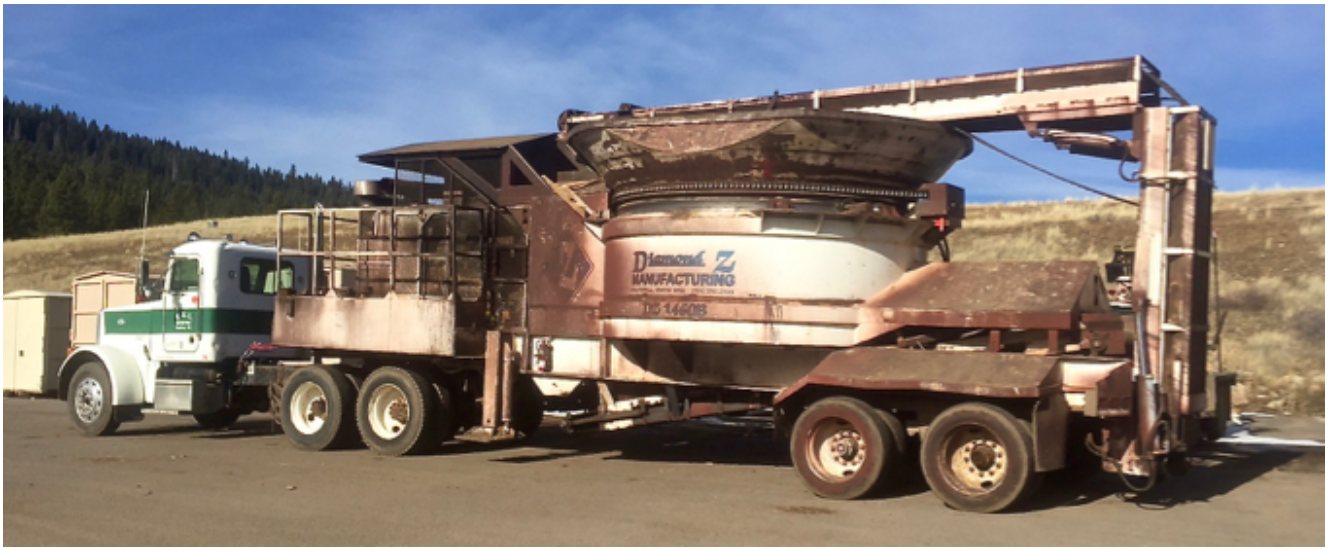
County officials are negotiating with Liberty Utilities to come up with a price and terms that would lead to Placer having its own 1 to 2 megawatt biomass plant on the waste facility grounds.

Four years in the making, the Cabin Creek proposal involves building an 8,000-square-foot structure where a caretaker's residence now sits, but would be relocated. The operation would span on a strip of property along power lines and the service road, while wrapping around a cell tower. A storage area would be designated, and operators would need another grinder to work alongside the MRF's existing one.

The concept coined a Power Purchase Agreement "PPA" went through the California Environmental Quality Act process years ago, but there were other hurdles in the tedious banter of the deal. The difficult part is that unlike other renewables biomass as a fuel source is not subsidized. Plus, natural gas is inexpensive by comparison.

Nonetheless, the light at the end of the tunnel could be

Liberty's goal to go 100 percent renewable; so, many options are on the table. The percentage of the renewable energy mandate has been climbing, as California grapples with leading the world in combating climate change.




A grinder at the MRF in Placer County could be used by a future biomass company. Photo/Susan Wood

Placer County Supervisor Jennifer Montgomery had hoped a deal would be reached Dec. 15. The county and Liberty are still talking.

"We're committed to getting the biomass facility built," county Deputy Chief Executive Officer Dave Defanti said Friday. He added the results are "positive," and the county is "exploring all options."

The aim is to find a middle ground between what Liberty Utilities currently pays and what biomass would cost to generate. For now, the difference hovers at about a nickel per kilowatt.

Liberty Utilities contends there's no "deal breaker" price that would guarantee its business interest.

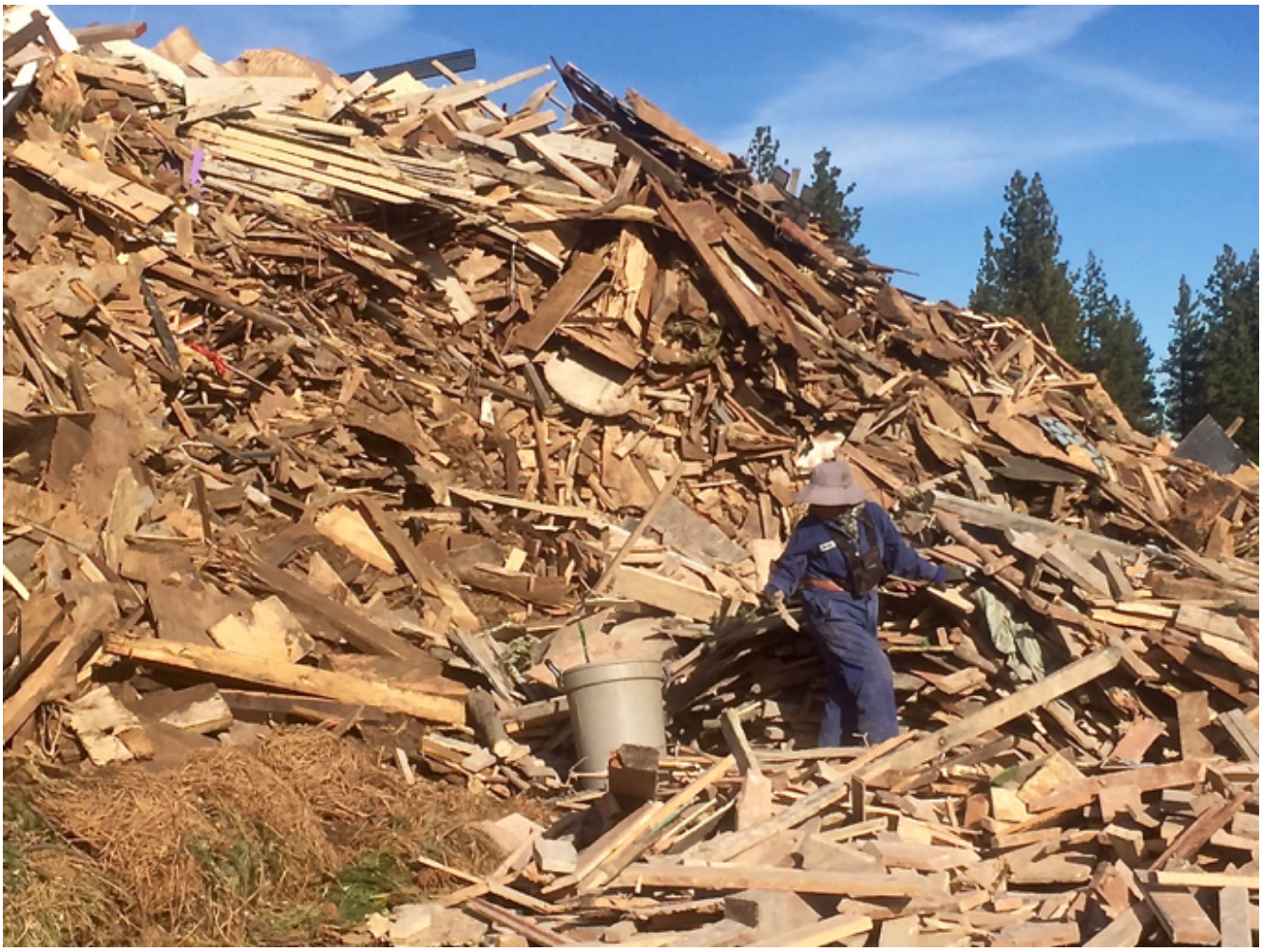
"Energy markets fluctuate, and what may seem like a reasonable cost now may not be in the relatively near future," Liberty

spokeswoman Kathy Carter told *LTN.*

The energy purveyor brought on a 50-megawatt solar project earlier this year that is already meeting a quarter of its customers' electricity use. Another project added 10 MW more.

"Biomass energy is a renewable resource, but it's more expensive than solar and wind. Still, we understand that it also has many forest health and other benefits, so we're open to continuing to work with Placer County to take a fresh look at this," Liberty Vice President Travis Johnson said.

Currently, the MRF represents a pit stop for agencies and their contractors to funnel their treetop debris to Rio Bravo in Rocklin. Already, 5,200 tons of biomass woody debris are channeled through the Truckee area recovery plant to Rocklin.



Wood debris at the MRF at Cabin Creek could become energy one day. Photo/Provided

But that’s a long, expensive haul for trees coming out of the Sierra Nevada as agencies such as Caltrans have learned. The transportation agency worked alongside the U.S. Forest Service in massive fuel reduction programs.

“To me, it makes a lot of sense,” Placer County senior civil engineer Walt Schwall said of the proposed Cabin Creek on a tour this week.

He’s not alone.

“We see a facility like the one in the Cabin Creek area as a tremendous option. It would not only accelerate the removal of the dead and dying trees as a result of drought, biomass facilities like that would reduce the wildfire threat by helping us catch up on the burn piles,” said Tom Lotshaw, spokesman for the Tahoe Regional Planning Agency.

“We definitely see biomass as a viable option,” Lotshaw told *LTN*.

One could even argue that processing the woody debris through an energy facility is better environmentally than burning carbon into the air. The concept of having one nearby is also an eco-improvement because fewer vehicle miles equal less carbon emissions from trucks.

Once again, the state is asked to strike that delicate balance between business and the environment. And history has shown that change in the name of progress doesn’t come easy.

Still, if Cabin Creek fails to proceed with Liberty Utilities, there are other parties who may be interested, insists Brett Storey, a Placer County analyst.

The playing field is vast with possibilities.

The Loyalton biomass plant is about to resume activity. Photo/Provided

**The planned return of the Loyalton plant**

Thirty-seven miles from Truckee, a 212-acre, 20-megawatt biomass facility is due to go on line again within a month in Loyalton where one once operated.

The Loyalton Biomass Plant was the site of a Sierra Pacific sawmill and biomass facility before the mill closed in 2001 and within the decade the biomass portion shut down.

American Renewable Power, the new operators based in Irvine, are in the process of adding to the 17 employees hired, and securing contracts with utilities and energy purveyors, according to Sierra Business Council President Steve Frisch. Plant manager Jim Turner expects the facility to go on line shortly after the holidays. Plant owner Steve Mueller was unavailable for comment.

The company estimated an economic windfall of $1.7 million to the rural region over the next few decades as it sources biomass fiber from 5 million acres in nine counties within an hour’s drive from the plant.

More than 40,000 tons of the woody debris are awaiting the plant's return to operation. It's expected Loyalton could process 180,000 tons a year.

Bigger plans exist beyond producing energy, given the cost inequity of processing biomass.

"There has to be another motivator," Frisch said, referring to the community-service need of ridding the California forest of its tree die-off crisis.

It takes vision to complete the mission. For example, biochar —a charcoal used as a soil amendment — is yet another "value-added" product company officials and the business council anticipate seeing out of the Loyalton plant.

"We need to do some other product in order to offset the cost," Frisch said in speaking for the Sierra County region. "That's why Loyalton is so important."

Rio Bravo plant manager Chris Quijano watches the material go

on a conveyor belt into the plant. Photo/Kathryn Reed

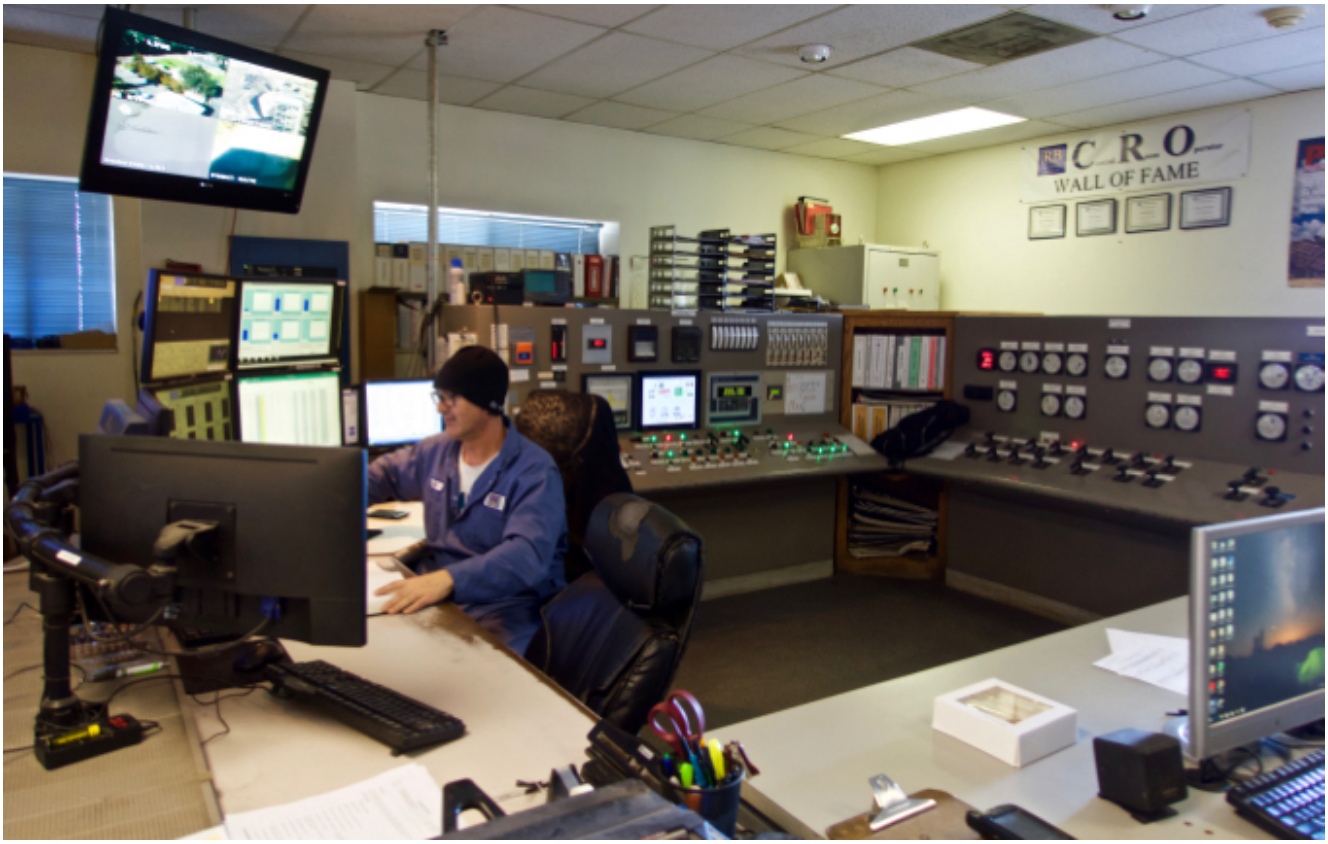
**No time to waste**

The burning desire to rid the Sierra Nevada of its ever-escalating tree die-off has put the big boys of biomass into action. Rio Bravo of Rocklin has processed 6,000 tons of green waste from the Lake Tahoe Basin this year.

The 50-acre plant located adjacent to Thunder Valley Casino began its quest to "re-compose" the mass timber about 30 years ago – with a five-year shutdown in the 1990s. Biomass became the answer, despite solar being a lot cheaper to produce, plant managers contend.

Today, the facility processes 35 tons of the green energy source, cranking out 24.4 megawatts of energy an hour now under contract with Southern California Edison. The plant had earlier managed a 26-year contract with Pacific Gas & Electric.

In its daily routine, the Rocklin plant sees 50 trucks hauling 24 tons of debris. They're channeled through an elaborate system of chutes and machines that grind up and break down the treetop debris and other timber material. One megawatt can power 800 homes. Overall, 20,000 homes get their electricity in a given hour through the 25-megawatt facility.



Jeff Johnson handles the control room at the Rocklin biomass plant. Photo/Kathryn Reed

The facility represents an efficient system that operates at 87 percent capacity when the operation is not undergoing checks or audits.

It takes in wood chips and mass pine timber, along with other materials from orchard trees in what's considered its agriculture segment. Other sources from the urban sector also make their way through the processing plant.

With a state energy diversion mandate of 50 percent by 2030, much material is considered capable of being broken down and reused.

"We can make power every day," plant manager Chris Quijano told *Lake Tahoe News* on a recent tour of the grounds. Rio Bravo is one of six biomass plants IHI Power Services Corporation runs in the United States.

The mechanics of this one in Northern California is impressive

– taking 30,000 tons of high-hazard dead trees out of the woods and turning them into electricity in 2016. The power the plant generates is essentially thrown into an energy bucket to dispense.

The alternative to burning slash piles in the forest produces water vapor opposed to carbon emissions. That huge white plume from the plant is not smoke – even though there's severe burning involved from a boiler connected to the turbine. The combination and process creates steam at 950 degrees Fahrenheit.

"And 3 million tons of high hazard trees are available," Quijano said.

The process has other air quality benefits advocates tout.

When the mass timber goes either unburned or unprocessed as biomass, it is left in the forest to rot. The decomposition releases greenhouse gases, including methane.

Either way, following the tree from a dead state to energy commands cooperation from Mother Nature. That's why the plant even carries a weather station on site.

The wet deluge from last year represented a trying time for plant operators. At one point, they had to deal with a lake on the property that didn't exist before, providing a few disruptions in truck traffic for starters.

Of course, the pond brought out more birds, as a sanctuary of organic matter, dirt and water gave wildlife a place to land.

That's the circle of life meeting the cycle of material.