

Biofuel project proposed in McFarland would bury carbon from ag waste, produce alternative to diesel

By John Cox

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An Iowa technology company has proposed a first-of-its-kind bioenergy project in McFarland that's expected to help cut a significant source of local air pollution while also reducing diesel emissions, burying carbon and employing about 50 local residents.

The project spearheaded by Iowa-based technology company Frontline BioEnergy proposes to "gasify" about 300,000 tons per year of nut shells and other local ag waste and turn it into natural gas equivalent to 21 million gallons of gasoline. It would also generate an estimated 125 tons per day of biochar, a versatile byproduct whose uses may include fertilizer.

Known as San Joaquin Renewables LLC, the carbon-negative project is among the first of a growing number of Central Valley bioenergy initiatives that, though opposed by activists leery of any fuel that emits even small amounts of pollution, is seen by state policymakers as a strong alternative to diesel fuel and open burning of ag waste.

"They're turning a problem into a really high-benefit solution," said Julie A. Levin, executive director of the trade group Bioenergy Association of California.

SJR President T.J. Paskach, who also serves as Frontline's chief technology officer, said Wednesday that much work remains before construction can begin, including a full environmental review and getting clarity from the state on the future of California's Low Carbon Fuel Standard, which basically forces oil companies to contribute financially or operationally to the fight against climate change. He said the fuel standard's fate is unclear after the year 2030.

The project would take about two years to build once all approvals are given, he said.

Ag waste has long posed a dilemma for Central Valley agriculture. Burned openly in many cases, it can be burned and converted into electricity. But many of the so-called biomass plants that consumed it have closed in recent years past, leaving some growers to burn it on their own, which emits fine particulates and other harmful materials.

SJR proposes to gasify the biomass using a highly efficient but expensive process that super-heats the waste but doesn't combust it and therefore is considered a much cleaner alternative. What comes out of the process is methane the company hopes to inject into a local natural gas pipeline, plus carbon dioxide that would be stored deep underground and biochar.

Frontline, a 15-year-old company focusing on gasification technology, has built related projects but none like the one proposed in McFarland, Paskach said.

Paskach acknowledged the concerns of climate-change activists who oppose development of renewable fuels in favor of strictly electrical-power technologies. He noted bioenergy projects such as this one have the potential to offset carbon emissions for a net benefit rivaling solar and wind power.

Frontline would license its technology to the project and help operate the plant on an 80-acre former agricultural field that served McFarland's wastewater treatment system. But the company would be only a minority owner of the plant, which he said would be co-owned by local residents and farmers.

"We are in this space and we do want to help," he said. "We're not just in this to make money."

The company is still considering what it might want to do with the byproduct biochar, Paskach said. It might be used as a soil amendment, odor-absorber or a component of fertilizer but it won't be burned.

"We're looking at options," he said.

The California Air Resources Board, anxious to phase out ag burning by 2025, recently took a look at the potential for converting biomass into biofuel. It has proposed working with other agencies on promoting such work and, to help pay for it, pursuing funding from state and federal sources.

Levin, at the bioenergy association, said the project is exciting as the first of its kind. It could help the state reduce its use of diesel, which contributes heavily to the Central Valley's poor air quality.

The project's biochar could be used for many things, she said, including in water filtration and fabric dyes. It doesn't decompose quickly and one of its best uses is to simply bury it in soil.

"No question it's high-value," she said, adding that some farmers use it in their soil as a way of increasing its water retention. "The question is, where is the highest value and how do we monetize that?"