

# Los Angeles Times

First-of-its-kind clean hydrogen plant planned for Los Angeles County



Workers sort through recyclables at Los Angeles Recycling Center. (Ricardo DeAratanha / Los Angeles Times)

Sammy Roth | May 19, 2020

An energy company with big ambitions to produce the clean fuel of the future announced a deal Tuesday with Lancaster officials to make hydrogen by using plasma heating technology — originally developed for NASA — to disintegrate the city's paper recyclables at temperatures as high as 7,000 degrees Fahrenheit.

Solena Group's process has no commercial track record, and the company has not yet secured financing to build its \$55-million facility in Lancaster, in northern Los Angeles County. Solena is one of many firms looking for ways to cheaply produce hydrogen without generating planet-warming gases in hopes that the clean-burning fuel will one day replace oil and gas for transportation or heating.

But the company's process, which uses so-called plasma torches, caught the attention of Lancaster Mayor R. Rex Parris.

The city will expedite Solena's permitting process and send the company its paper recyclables, rather than paying to dump them in a landfill. Some U.S. cities have been sending recyclables to landfills since China stopped accepting exported waste in 2018.

If the hydrogen plant doesn't materialize or otherwise fails, Parris said in an interview, there's little downside for the city.

The upside would be pioneering a technology that could dramatically cut emissions. Lancaster will own a small stake in the plant.

"If we continue producing energy as we have been, we're not going to be here in 50 years," Parris said, referring to the impacts of climate change. "I'm excited to see how well it works, and how quickly we can expand this through the nation."

A maverick Republican, Parris has made climate change his signature issue. He helped make Lancaster the first city in Southern California to ditch its privately owned electric utility and buy cleaner power for residents. He also convinced the Chinese automaker BYD to build an electric bus factory in Lancaster.

As a trial lawyer, he is representing thousands of people suing Southern California Gas Co. over the alleged health impacts of the 2015 methane blowout at the company's Aliso Canyon storage facility.

"Most of what we do is the first time it's ever been done," Parris said.



Lancaster Mayor R. Rex Parris was re-elected in April 2020, securing a fifth term in office.(Francine Orr / Los Angeles Times)

Solena Group's chief executive, Robert Do, has been honing his waste-to-fuel technology for decades. Do co-founded the company in the 1980s with Salvador Camacho, a former NASA engineer who helped the space agency develop a plasma heating technique that could generate temperatures high enough to simulate re-entry to Earth's atmosphere. The technology was critical to testing the heat shields that would protect the first Americans in space as they returned to Earth.

A 1994 NASA publication described plasma heating as "passing a strong electric current through a rarefied gas to create a plasma — ionized gas — that produces an intensely hot flame." Camacho started a spinoff company utilizing the technology in 1971

"It's a pretty well-demonstrated industrial equipment," Do said in an interview.

Solena Group would use some of the gas it produces — mostly hydrogen and carbon monoxide — to power its plasma torches.

The company has tried and failed to build a commercial facility before. In 2015, for instance, a joint venture between Solena and British Airways to produce jet fuel at a facility in London fell apart after oil prices crashed, undercutting the project's economics.

Do is hopeful that California policies requiring cleaner energy will create an atmosphere where his technology can thrive.

"Our technology can only follow what the market demands are," he said.