

## ABOUT RAVEN SR

Raven SR is a clean fuels company that transforms waste – municipal solid waste, organic waste, and methane – into high-quality, clean hydrogen and Fischer-Tropsch synthetic fuels through our uniquely patented Steam/CO<sub>2</sub> Reforming technology. Our process is non-combustion, producing fewer emissions, and we can process multiple and mixed wastes simultaneously. The clean, renewable fuels we create from this carbon-neutral conversion will reduce and eliminate vast amounts of waste contributing to greenhouse gases, pollution, and climate change.

## PARTNERS & PRODUCTION LAUNCH

- Raven has announced that it will build its first production facility at Republic Service's site in Richmond, CA with operations projected to be commissioned in the beginning of Q2 2023.
- Raven will be commissioning its first gas-to-hydrogen production facility in Q4 2022 in California.
- Raven completed its \$20M Round A financing with investments by Chevron, Itochu, Hyzon Motors, and Ascent Hydrogen Fund. Round B investment by Samsung Ventures was completed in March.
- Raven and Hyzon Motors are partnering to build 250 hydrogen hubs across the U.S. and globally to fuel Hyzon's zero-emissions commercial truck fleet.

## RAVEN SR'S TECHNOLOGY

- Is one of the only combustion-free, waste-to-hydrogen processes in the world, designed to reduce emissions and produce more green hydrogen per ton of waste than competing processes.
- Our patented Steam/CO<sub>2</sub> Reformation technology is a chemical process versus combustion.
- We use a wider range of feedstocks that can be mixed together including solid waste, industrial waste, raw sewage, medical waste, bio-waste, and methane.
- Our syngas has a very rich hydrogen content (~60%) compared to competing technologies, enabling us to produce of higher quantities of renewable hydrogen or Fischer-Tropsch (FT) fuels, such as Sustainable Aviation Fuel (SAF) and Renewable Diesel (RD), at a lower price.
- Our modular and scalable units can be placed at landfills and agricultural sites. Our production facility in Richmond, CA is approximately 1.5 acres. (Site image as below)



## GREEN PROCESS

Key features that differentiate the Raven SR system, making it greener than competing systems:

- Air emissions are 2.5 times less than the best available technology.
- The process has been approved by the California Bay Area Air Quality Management District.
- Our carbon intensity score varies by feedstock but is expected to be -20 or better.
- Our waste streams do not need to be dried, reducing energy needs.
- We do not use fresh water. We recycle, and even manufacture any water required, and depending on the feedstock, can be completely water neutral.
- Units can be autonomous, using hydrogen and syngas produced for power instead of pulling from the grid.

## WASTE STREAMS & SUPER POLLUTION REDUCTION

Raven SR's fuel production can significantly cut greenhouse gas emissions by eliminating landfill waste and converting it to renewable fuels.

The most urgent step we can take to slow climate change is to cut the super "Short-Lived Climate Pollutants" which are tens to thousands of times more damaging to the climate than the carbon dioxide emitted by fossil fuels. The two most common super pollutants are black carbon and methane, which are 3200 and 75 times more damaging to the climate than carbon dioxide. The biggest sources of these emissions are organic waste that is sent to landfills.

Every year, by converting just 5 garbage trucks per day of organic waste, Raven can:

- Create more than 1,600 MT per year of 99.999% pure hydrogen
- Which equals 97 million miles in a passenger car or 12+ million miles in a Class 8 truck
- Avoids 3,400+ MT of CO<sub>2</sub>e from landfills
- Diverts 17,000 MT of waste from landfills

## YIELDS GREEN OUTPUTS & CARBON NEGATIVE EMISSIONS

The Raven process creates syngas that is used to produce hydrogen or Fischer-Tropsch fuels, both of which are considered renewable fuels depending on the feedstock.

- Raven's process produces 4.8 MT per day of Hydrogen or Fischer-Tropsch fuels and 14 MT per day of bio-carbon from 70 MT per day biogenic waste and 4.5MW power, no pure water required as a feedstock. Raven is further designing the systems to generate its own power onsite in order to be independent of the grid..
- Raven's process can be carbon negative because it diverts waste from landfills, reduces methane or black carbon from organic waste, and can be fully autonomous, using the energy created by its fuels to power its facilities.
- Raven's technology creates hydrogen from waste in larger quantities than other technologies, turning pollution into green energy at a cost that will enable the widespread adoption of hydrogen as a source of energy.
- Fischer-Tropsch fuels are synthetic fuels (sustainable aviation fuels and renewable diesel) that are purer and burn more cleanly. FT fuels have higher energy content per carbon content, and are less dense than conventional fuel, allowing aircraft to fly further on the same load of fuel.
- We can also produce bio-carbon, a pure carbon that can be used for a variety of purposes including fertilizer.

For more detailed information about Raven SR, please visit our website at [www.ravensr.com](http://www.ravensr.com).

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