



Renderings of what Air Company's facility on Mars could look like in the future | Photo source [Air Company](#)

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STARTUP PIVOTS FROM VODKA TO SUSTAINABLE ROCKET FUEL

 COMPUTING & TECH

Air Company has developed a way to create renewable fuel from carbon dioxide

Spotted: Brooklyn-based startup, Air Company, who turn captured CO₂ into products like vodka, has been featured on Springwise twice before, most recently in early 2020 when they were [using captured CO₂ to make hand sanitiser](#).

Now focused upon space exploration, Air Company's renewable rocket fuel aims to reduce the CO₂ emissions produced by the spaceflight industry. By using CO₂ from the air instead of burning fossil fuels to make rocket fuel, CO₂ is kept in the ground, closing the carbon loop.

Air Company uses certified wind energy, which is low-carbon, to make its fuel. Emitting only 11 grams of CO₂ equivalent per kWh of electricity, the emissions produced in the process are negligible. Due to the efficiency of the company's fuel-making process — 1 kWh of wind energy can convert 221 grams of CO₂ in methane — the energy balance ends up with a far lower carbon intensity than it would have if natural gas was used.

On top of eliminating the carbon footprint of space travel, the renewable fuel also solves a second challenge: bringing people home from Mars. The Martian atmosphere consists of 95 per cent CO₂ and Air Company's approach to rocket fuel allows for the production of critical feedstock materials on Mars. "As we focus on our CO₂ technology and where it can be most beneficial to solve problems, spending time on an innovation that could bring people home from Mars is something that motivates us to continue to push humanity forward," co-founder Gregory Constantine told Springwise.

The next steps for Air Company will be to design and build a refuelling station, and to begin working closely with the space industry to help push these technologies forward.

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Takeaway:

It is estimated that on each journey to Mars, the launch alone will emit 715 tons of CO₂, which is further topped with the carbon emissions produced from burning fossil fuels to make liquid methane. Air Company's process of creating renewable fuel from captured CO₂ utilises the most abundant greenhouse gas in our atmosphere and could play a key role in making space exploration more sustainable.