

Clean Hydrogen

Juicing the Daylights Out of the Sun

/by Charlene Brown

Several years ago I met Kevin Bowles. In 2012 he founded Solar Fuel Corporation. I can't find Kevin anywhere today. But his mind-twisting engineering has been on my mind ever since.

Bowles was stuck on a development breakthrough that he wanted to expand into a scalable long-term application.

It was a year earlier, in 2011, that I got a glimpse of Bowles' sun-to-fuel concept. It was rough and rugged, in its infancy. But in just one year, Bowles had a much more demonstration-worthy prototype capable of generating 10 kilowatts of clean hydrogen.

A team of engineers had been working with Bowles and had developed a new liquid solar process called syngas.

The refining process converted fuel on the spot - while the sun is out of course. Harnessing the sun's energy and delivering it in liquid form on the fly.

It was a reactor or digester of some sorts. It made me think of when I was a little girl watching a caterpillar chewing through leaves on one end and excreting it out the other end like a conveyor belt. By the end of the day it grew from a small wormy creepy crawly bug into a huge rounded out caterpillar.

Now consider the possibility of speeding up the earth's natural process of converting energy from the sun by living creatures like my green glowing caterpillar, or your leafy vegetable garden.

Those plants, if not eaten, just wither and rot, turning to waste that is digested by the elements in the ground. Over millions of years that earth matter eventually gets compacted into oil. The same oil we pump back out to drive our cars and use in all our manufacturing processes.

What if we could shrink the process of turning matter into fuel down from millions of years into mere minutes in a microwave reactor.

Skipping the fossilization process altogether, Bowles had patented a solar energy digestion process, so to speak, capturing today's sun and converting it to energy for same day delivery. The process, sun-to-fuel, took only 3 basic elements - sun, CO₂, water.

Yes, a simple recipe of unlimited raw ingredients that can be found abundantly in most climates and cooking them up, literally, to make hydrogen and Syngas - from which we can make diesel, gas and jet fuel.

I recall Bowles telling me how "we are doing something very hard here". At the time, many developers were rushing to market to address the high demand for breakthroughs in cleaner energy supply.

Bowles wasn't in a rush to speed up capturing and delivering same-day sun juice.

He had told me, "we're investing all the time internally to fit this technology with improvements to our design concept before we go put it out."

I often wonder who Bowles sold off his liquified solar digester to, but I haven't seen it on the market after all these years. Will it emerge in the next decade to match our ever increasing appetite for clean power?

Bowles sun-water is the type of technology that makes me repeat, we are now entering the Era of Harnessing.