HYDROGEN RENEWABLE ENERGY

GLOBAL ENERGY DEMAND GROWING RAPIDLY

Hydrogen is an energy storage medium, not an energy source. You can't get more energy out of hydrogen than what you put in it. Fossil fuels are used to extract the vast majority of hydrogen today. So, let's compare the costs of hydrogen made using fossil fuels, and a renewable source like solar-electrolysis of water

HYDROGEN

There are 11,216 liters [at Standard temperature and pressure] in 1kg of Hydrogen.

Using a 600ml/minute PEMEC [Proton Exchange Membrane Electrolysis Cell] means you need to operate it for 11216 liters/0.600 liters/minute= 18,693 minutes or 309 hours to obtain 1kg.

PEMEC

Under ideal conditions, this PEMEC runs at 200 watts or 10 volts at 20 amps. 200 watts = 1/5 or 0.20 kw.
309 hrs x 0.20 kW= 61.8 kWh to make 1 kg of Hydrogen.
At 80% conversion efficiency it will take 61.8/0.8 = 77.25 kWh to make 1 kg of hydrogen.

CONSUMPTION

The average retail cost of electricity in the United States as of January 2023 is 14.8 cents per kWh.
77.25 kWh * $0.148 = $11.43 of electrical energy per kg of Hydrogen.

Home consumers can use our system to produce hydrogen for $11.43 per kg by using utility-grid electricity. If you use our solar option, that number goes to zero, plus the additional cost of solar equipment.

The current cost of government subsidized hydrogen hovers around $28/kg.

Our system eliminates the cost of pressurizing and delivery which accounts for roughly 60% of the cost of hydrogen.

GREEN FUEL LLC