

Hydrogen 2.0 Overview

Hydrogen is the universe's most abundant element. It is also the world's cleanest source of energy if you can find an efficient and safe way to harvest, store, transport, and release that energy.

The Joi Scientific™ patented and proprietary technology, called Hydrogen 2.0™ is a new and sustainable process to deliver hydrogen energy on-demand as an affordable, carbon-free and universally available alternative to today's hydrocarbon economy.

Joi Scientific's breakthrough Hydrogen 2.0 technology is based on the inexhaustible supply of hydrogen from seawater and a patented extraction process designed to make it cost-competitive to other forms of energy. It will enable the generation of hydrogen on-demand, at the point-of-use, without high pressure and at room temperature and without specialized storage and distribution infrastructure requirements.

Hydrogen 2.0 holds the potential to establish hydrogen as a truly viable, flexible, scalable, and always-available alternative to today's industrial energy sources. From grid and off-grid electrical power generation to carbon-neutral synthetic fuels, Joi Scientific's Hydrogen 2.0 technology offers a solution to the biggest energy challenges of the global transition to renewables.

The Defining Characteristic of Hydrogen 2.0

The Hydrogen 2.0 energy system is characterized by the following:

- **Clean.** Traditional hydrogen production processes, such as steam reformation, can emit 5kg of greenhouse gases for every 1kg of hydrogen produced, making it unsustainable. In contrast, Joi Scientific's Hydrogen 2.0 production processes generate hydrogen without the use of chemicals or electrolysis and without carbon emissions. The use of Hydrogen 2.0 can, therefore, eliminate ecologically damaging greenhouse gases and transform hydrogen production into a zero-carbon process.
- **On-Demand.** Hydrogen 2.0 technology enables the localized production of hydrogen on-demand, meaning hydrogen is generated on-site or on-board where and when it is needed. In contrast, traditional hydrogen production is typically a centralized process performed at the wellhead, cryogenically cooled under pressure, and moved to where it is needed.
- **Affordable.** Hydrogen 2.0 technology is designed to be produced in abundance at a cost that is competitive with other energy alternatives. As the production process does not require any form of drilling or exploitation and can be manufactured on-demand, the technology has the potential to drive down the cost of hydrogen to be cost-competitive in most markets



with natural gas, coal, oil, diesel, gasoline, and other renewables—without the need for subsidies.

- **Available.** Hydrogen 2.0 offers uninterrupted availability at any time of day and in any weather condition. Its localized, water-based approach will allow the benefits of Hydrogen 2.0 to be shared worldwide without the need for the highly expensive infrastructure required for the transportation and distribution of traditional hydrogen, making it ideal for developing economies.

These attributes are in contrast to existing hydrogen production technologies such as hydrogen cracking, which is expensive and polluting, or electrolysis, which is highly inefficient.

About Joi Scientific

Joi Scientific™ was founded by a group of global business leaders, technologists and social entrepreneurs who believe that plentiful hydrogen holds the key to giving the world a viable, no-compromise energy alternative. The company's Hydrogen 2.0 technology holds the potential to be the world's first hydrogen production process that is on-demand, economically competitive, and environmentally neutral. The company is licensing its Hydrogen 2.0 technology to a wide range of industries including electrical generation, heat generation, transportation, and specialty power. Joi Scientific is headquartered at the Kennedy Space Center in Florida.

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