

HYDROGEN 101

FUELING THE ENERGY TRANSITION

The world is switching to lower carbon sources of energy to power the global economy. Wind and solar are excellent sources of electric power but cannot meet the needs of transportation and heavy industry which together account for 35% of global GHG emissions.

Hydrogen is the best solution to help tackle critical, hard-to-abate sectors, such as heavy industry and long-distance transport.



HEAVY
INDUSTRY



LONG
DISTANCE
TRANSPORT

Whether used in fuel cells to produce electricity from chemical reaction or combusted to produce heat, hydrogen combines with oxygen resulting only in water as a byproduct. Industries that are normally associated with major carbon emissions now have the ability to eliminate those issues and **commit to a cleaner future.**



By making hydrogen more accessible, BayoTech is setting us on the path to a future with fewer emissions.



BayoTech™

USES FOR HYDROGEN & WHY WE NEED IT

Hydrogen has traditionally been produced in large central plants to serve three big industries that use hydrogen as a chemical feedstock or reactant:



FERTILIZER
PRODUCTION



PETROLEUM
REFINING



METHANOL
USE

EMERGING APPLICATIONS

Going forward, hydrogen will increasingly be used in distributed locations at smaller scale across a diverse set of emerging applications pursuing decarbonization:



BUSES



TRUCKS



CARS



FORKLIFTS



DRONES



RAIL



SHIPS



DATA CENTERS



ENERGY
STORAGE



LOAD
BALANCING



NG
BLENDING



COMBINED
HEAT & POWER

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PRODUCTION PATHWAYS WHERE DOES IT COME FROM & HOW DO WE MAKE IT?

Hydrogen is the lightest element so it's inefficient to move it over long distances. Liquifying hydrogen to get more into a shipment is expensive and wastes energy. Instead of relying on large, central plants and long-distance transportation, hydrogen can be produced locally from natural gas, biomethane, or electricity. **Local hydrogen from any source used in a fuel cell dramatically lowers carbon emissions** versus diesel and gasoline. Local availability of resources will influence which method of production is most cost effective and lowest carbon.



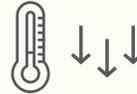
BayoTech plans to make low-cost, low-carbon and even carbon negative hydrogen widely available through a network of distributed BayoGaaS Hubs. These hubs will be strategically located throughout the US and UK to deliver high-pressure hydrogen gas shorter distances and for a lower cost.

HYDROGEN SAFETY

For over 50 years, hydrogen has been safely used, stored and transported. When compared to other fuels, such as gasoline and natural gas, it is considered safer to use.

When discussing the safety of hydrogen it's important to keep these things in mind:

Hydrogen is 14 times lighter than air. If released, hydrogen disperses quickly rather than pool at ground level, where accidental ignition presents a clear danger.



Hydrogen burns at a low radiant heat due to the absence of carbon. This lowers the risk of secondary fires.

Hydrogen is non-toxic. Leaks or spills do not contaminate the environment.



Thanks to decades of research and testing by private sector companies, the U.S. Department of Energy and other global entities have created safety codes and standards for everyone to follow for proper use of hydrogen systems.

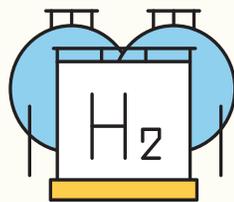
Moving forward, industry and government institutions continue to make safety a key priority to **ensure that hydrogen becomes part of a clean and thriving part of a decarbonized economy.**

BY THE NUMBERS



**GREATER THAN
11,000**

Hydrogen
fueled vehicles
in the U.S.



**10
MILLION**

Metric tons (mmt) of
hydrogen produced in the
U.S. each year.



**3X GREATER
THAN GASOLINE**

Hydrogen has the highest
energy content by weight of
all known fuels.



**THE U.S.
HYDROGEN**

Industry has the potential
for **\$140B** in revenues and
700,000 jobs.