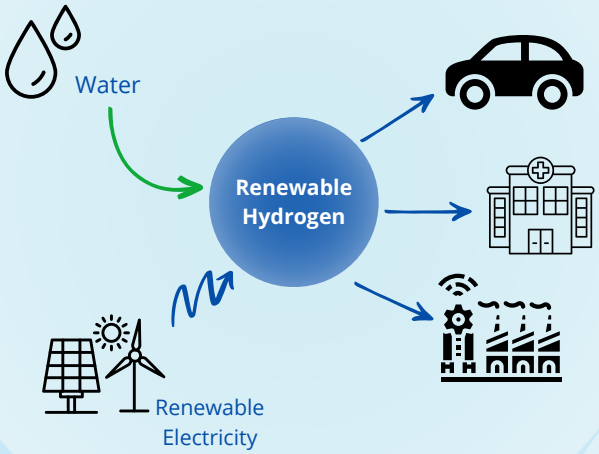
What is renewable hydrogen?

Renewable hydrogen is made by passing renewable electricity through water to separate it into hydrogen and oxygen.

Instead of fossil fuels, renewable hydrogen uses non greenhouse gas emitting energy like wind, solar and hydropower to create hydrogen that can be used for power generation, transportation fuel and industrial processes.



How should renewable hydrogen be used?

There are many potential uses for hydrogen fuels. However, if we are going to meet our emission reduction targets, it will be essential to leverage the best benefits of many different low and zero-emission energy sources.

One of the many benefits of hydrogen is its ability to be stored and used during periods of peak demand or for backup power.

Excess wind and solar can be used to create hydrogen that can be stored for several months to generate clean energy when we need it but the sun's not shining or the wind's not blowing.

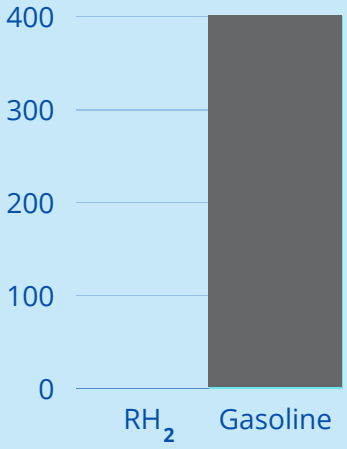
Carbon emissions are responsible for a third of the Earth's warming.
Eliminating carbon emissions remains the most critical policy objective to reduce the impacts of climate change.

Learn more at renewableh2.org

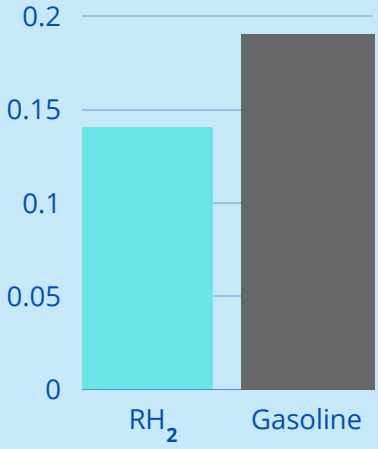
RHA
RENEWABLE HYDROGEN ALLIANCE

How much water is used in hydrogen production?

EMISSIONS FROM TRANSPORTATION
(grams of CO_2 per mile)



WATER USE FROM TRANSPORTATION
(in gallons per mile)



RH_2 = Renewable Hydrogen

Renewable hydrogen production uses modest amounts of water compared with other fuels. For example, it takes 6-7 gallons of water to make a kilogram of gasoline, but it takes just 4-5 gallons of water to make a kilogram of renewable hydrogen.[1]

Water used to create gasoline is polluted and requires significant, and expensive treatment before it is discarded. On the other hand, water used to create hydrogen is clean and can be safely recycled.

Is hydrogen safe?

The US currently handles ten million metric tons of hydrogen annually, at least as safely, if not more so, as other fuels. Just like we have for natural gas and propane, safety precautions are already in place for hydrogen.

Certification and standard authorities have established enhanced industry safety precautions that address hydrogen's unique characteristics. Additionally, local safety agencies ensure that hydrogen handling facilities comply with all safety standards and protocols.

Learn more at renewableh2.org

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1 Based on data from Life-Cycle Analysis of Water Consumption for Hydrogen Production, Elgowainy, Han, Lee, et al, Argonne National Laboratory, June 8, 2016 Annual Merit Review, Slide 15, based on electrolysis with wind power