

# **Storage and on-site production of hydrogen**

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# The problem with hydrogen as fuel source



Hydrogen promises to be the fuel of the future, but two key challenges remain:

## Storage

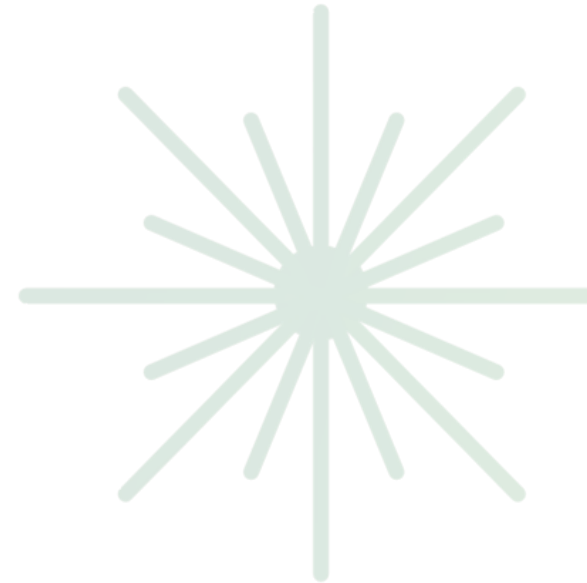


Hydrogen can leak through almost any material, deteriorating equipment.

## Energy Density



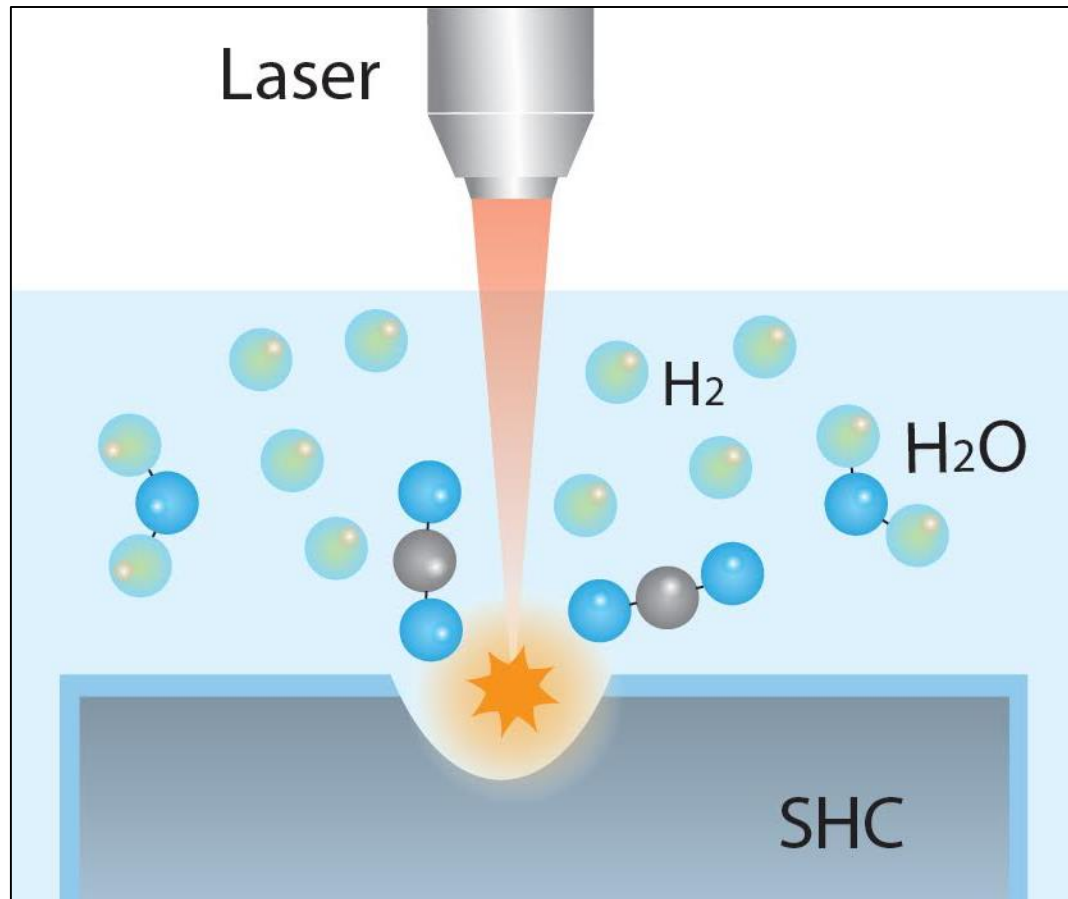
Hydrogen has low volumetric energy density.



# Our solution



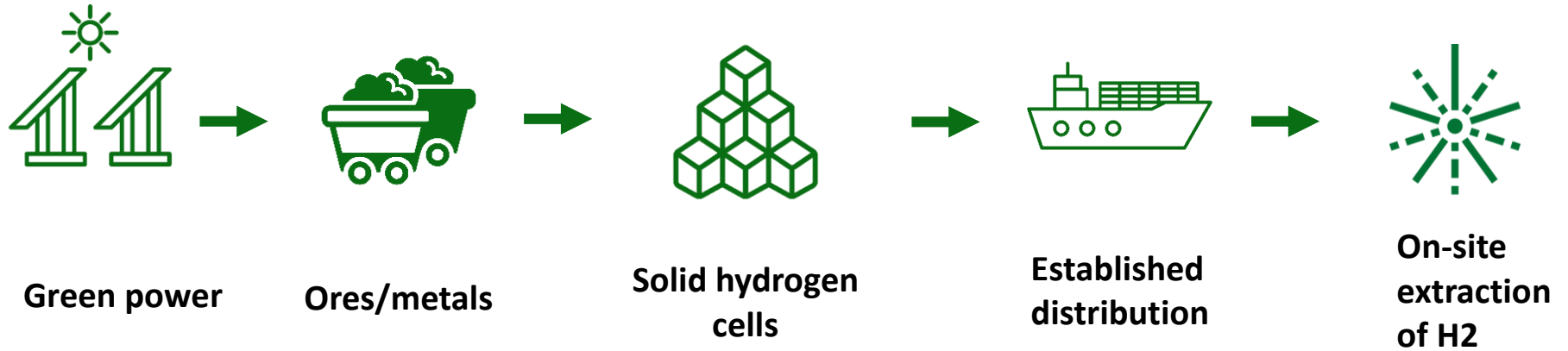
On-site and on-demand, laser assisted production of hydrogen



# The process



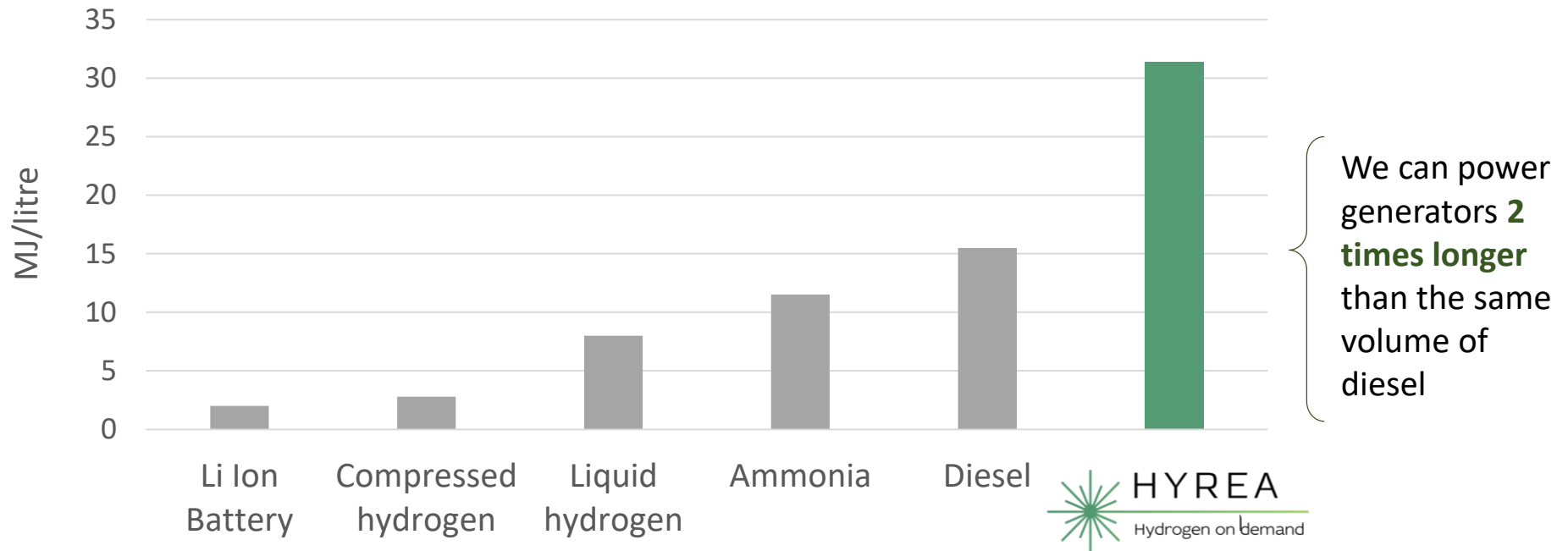
## Generation, storage and transportation of green hydrogen



# By volume, we can extract x2 the energy of diesel



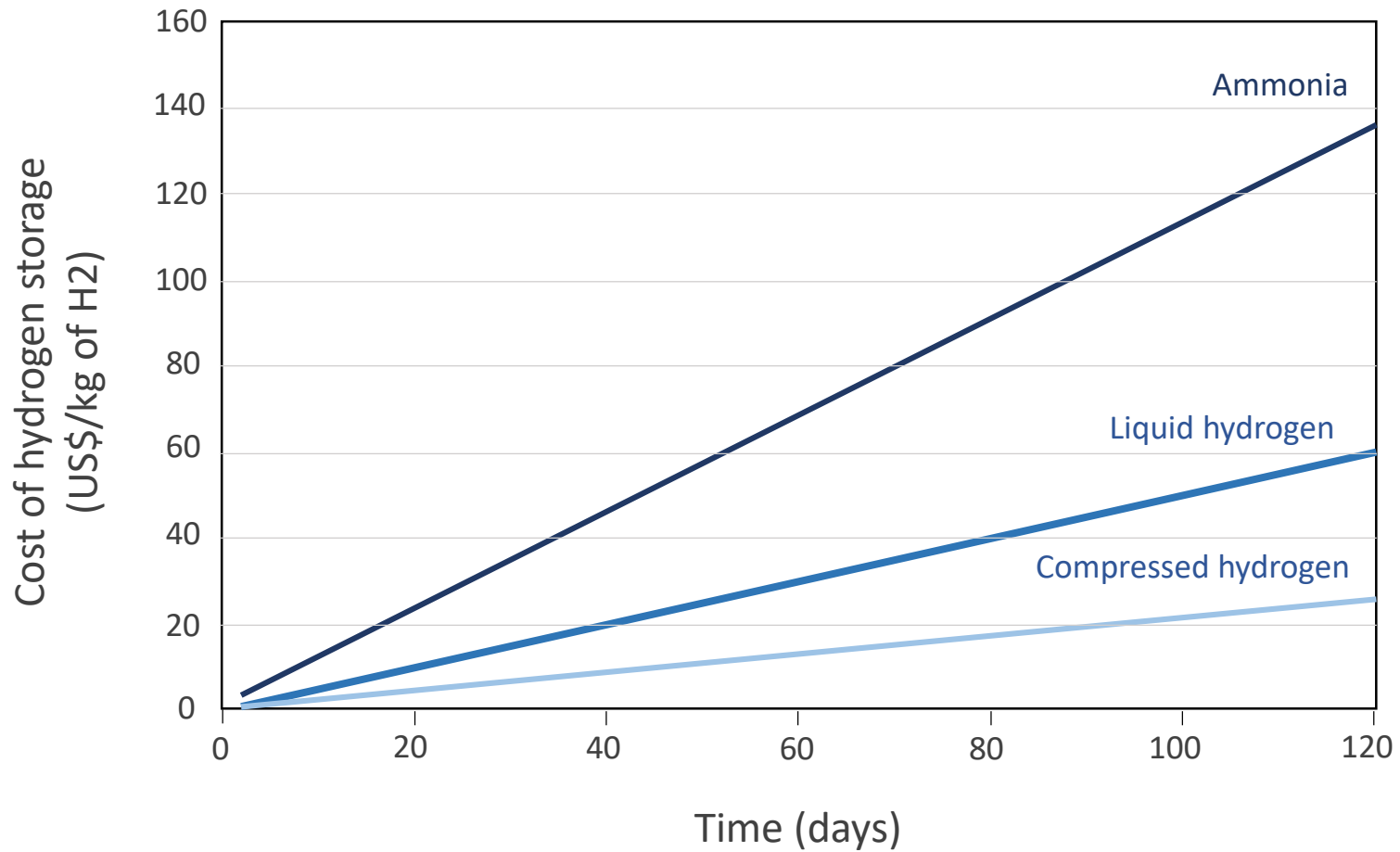
Energy density comparison table



# Cost comparison



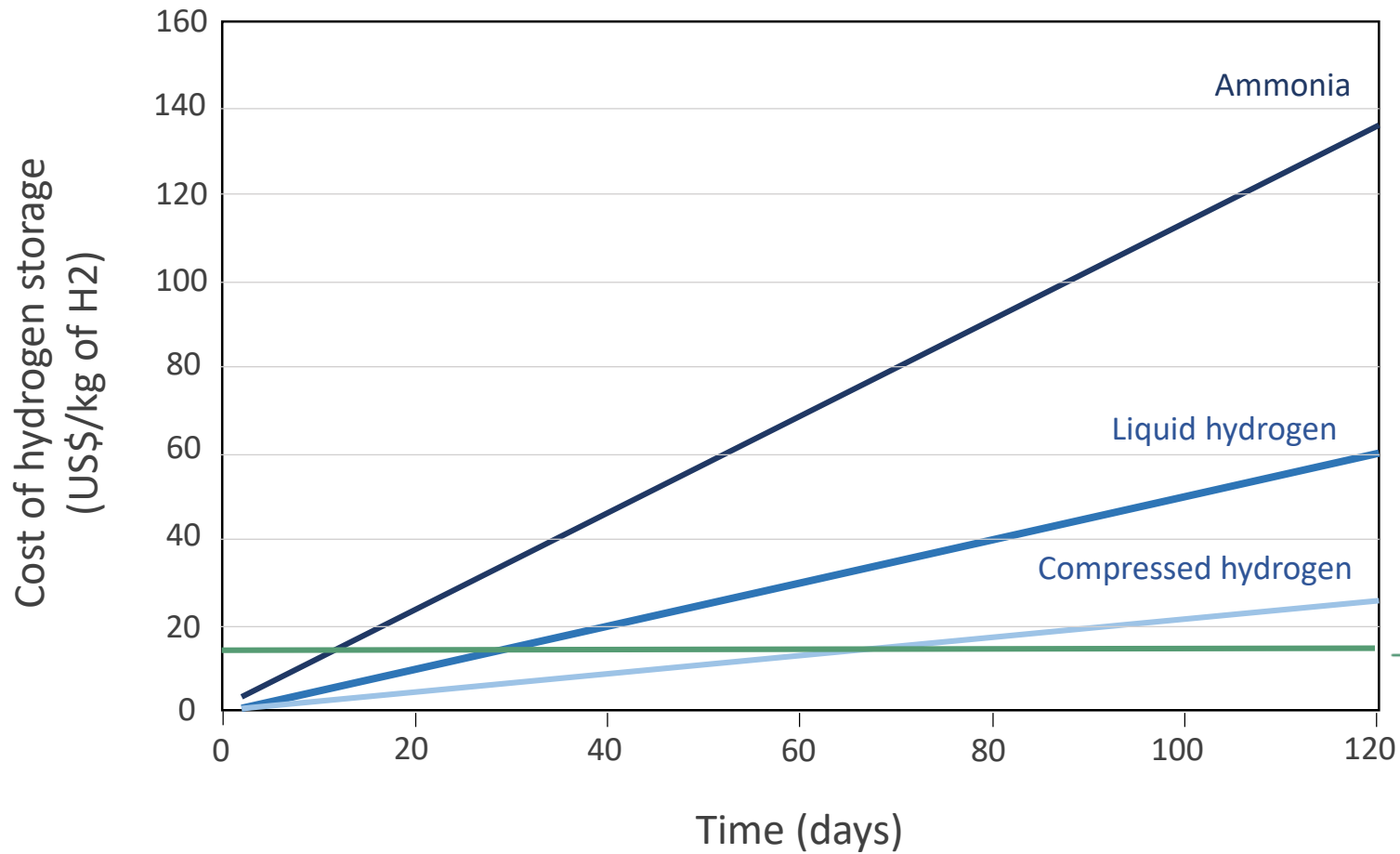
\$ Cost of hydrogen storage



# Cost comparison



\$ Cost of hydrogen storage



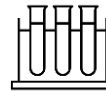
# H2 generation market is worth \$150b and growing



**Oil refinement**



**Feedstock into chemical industry**



Ammonia, Methanol, Fertilizer, chemicals, synthetic kerosene and synthetic methane



**Fuel**



Heavy vehicles



Shipping



Aviation



**Electricity production**



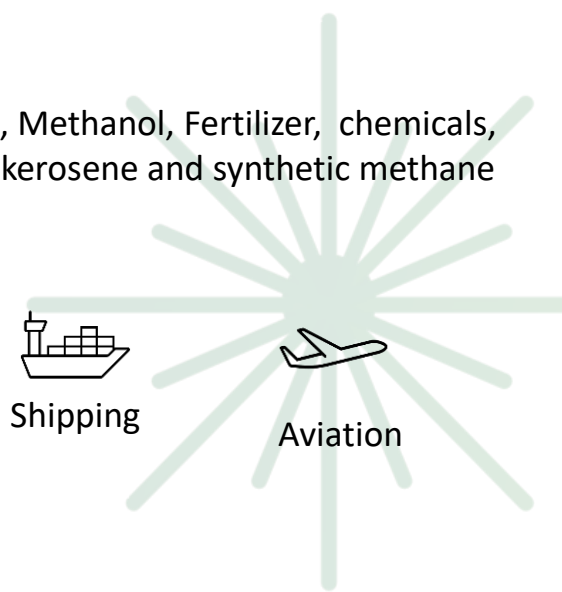
**Energy storage**



Remote area power systems



**Reducing agent in steel making**





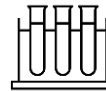
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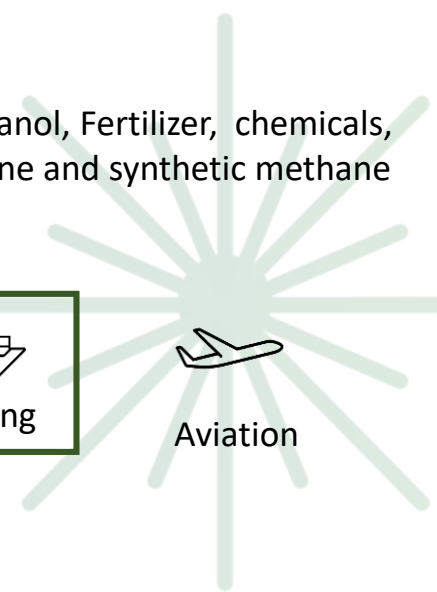
Energy storage



Remote area power systems



Reducing agent in steel making



# H2 generation market is worth \$150b and growing



- Heavy, long haul shipping and trucking
- Hard to abate industry, strong focus on CO2 reduction
- Marine diesel engine market= \$16.5b USD
- Fuel cell heavy vehicle market= \$1b USD, expected to grow rapidly
- Avenue to sell Solid Hydrogen Cells