

**Hydreen**

**GREEN EARTH**



**A Green Hydrogen Trading Exchange**  
**Sustainably decarbonizing the economy**

The Open Network for Hydrogen Commerce

**Solving the tricky issue of matching demand & supply in the Green Hydrogen Ecosystem,  
Accelerating the deployment of capital by stabilizing the market through information, trust and trade**

It has become commercially viable for Hydrogen to move from its traditional role as an industry feedstock market into a critical energy source for decarbonization



6.5%  
CAGR

## Traditional use cases

Grey Hydrogen

### Industry Feedstock

- Ammonia production
- Hydrocracking
- Hydrogenation
- Steel production
- Synthesis gas
- Electronics manufacturing

47%  
CAGR

## Decarbonization Use-cases

Green Hydrogen

### Transportation

- Forklifts
- Freight trucks
- Buses
- Passenger vehicles
- Heavy equipment
- Trains
- Marine shipping
- Aircraft

### Hard-to-Abate Industries

- Ammonia production
- Hydrogenation
- Fertilizer
- Steel production
- Cement Production

### Power & Heat Generation

- Power generation
- Power buffering
- Backup power
- Industrial heating
- Residential and commercial heating
- Natural gas blending

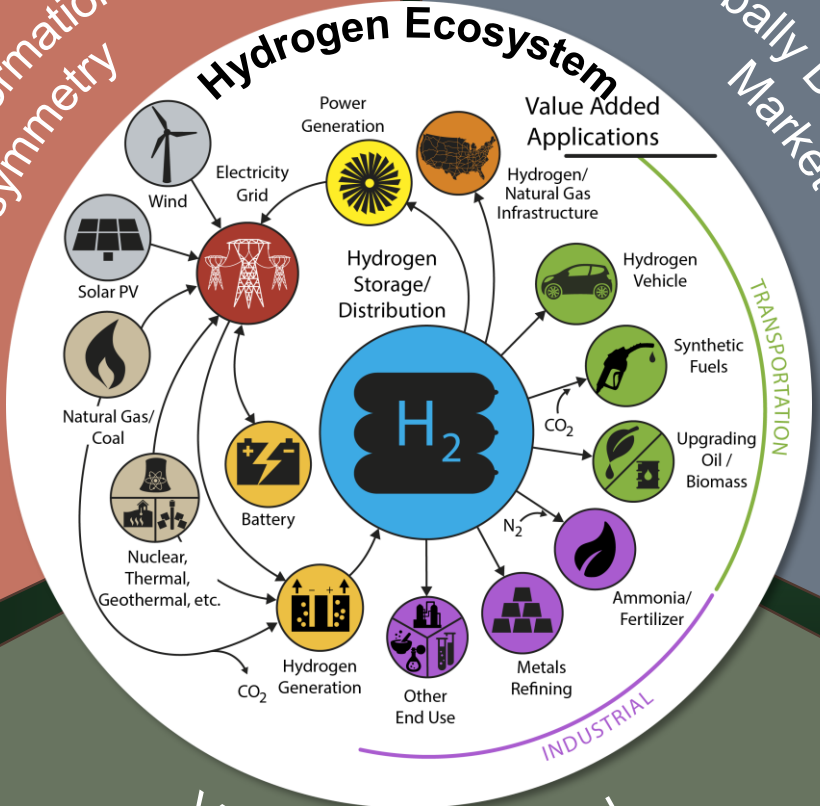
# Hydrogen is the New Energy; and it is growing exponentially globally



There is no trading platform for global trade of H<sub>2</sub> molecule. New developers of Hydrogen projects currently do not know the new breed of buyers. There is price and quality uncertainty. This is slowing funding of projects.

1

Market Information Asymmetry



2

Globally Distributed Market

CO<sub>2</sub> pollution and the solutions for decarbonization are in different geographies. And incentive structures, available resources and transportation costs are different in different countries. This creates arbitrage opportunities.

Climate Tech Investors are not able to get provide governance over a geographically distributed global portfolio – transparently.

3

Verifiable and Trusted Green Certified Products

Globally recognizable standards and certification not available for any green trade transaction.

3

# There is a need for transparent global marketplace for buyers & sellers



Non-discriminatory trading platforms foster confidence in hydrogen as a crucial energy source and speed up investment.



The successful development of the hydrogen industry will rely on a well-functioning GLOBAL market that enable industry to have direct access to hydrogen molecules and its derivatives from across the world.



Spot prices need to be available along with futures contracts and offset contracts to balance a portfolio of options available in the decarbonization journey.

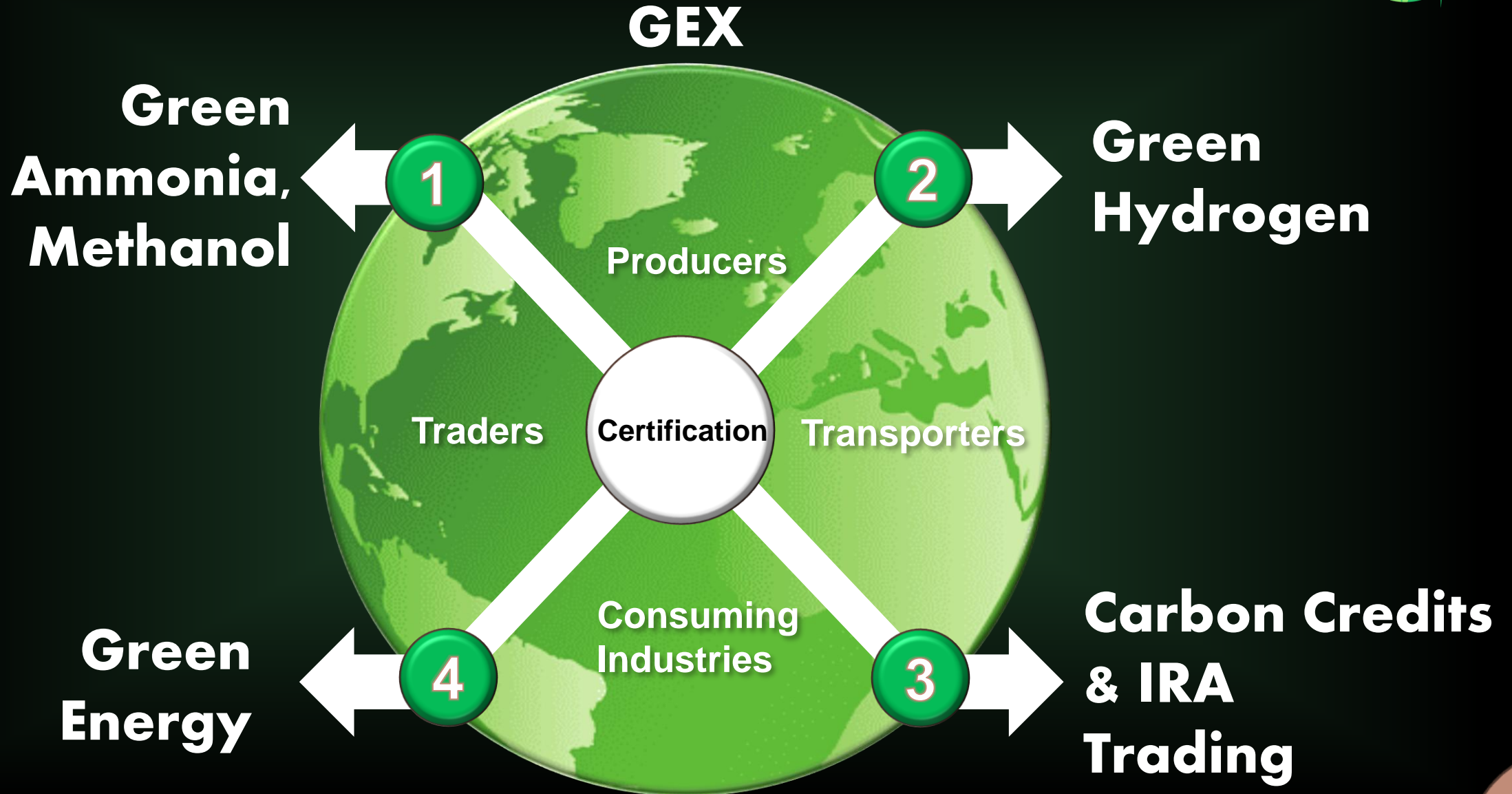


Key factors include transparent pricing, the publication of trading volumes, and the number of participants in the trading process.



“Certified **Green**” only platform will bring credibility and non-ambiguity to the marketplace

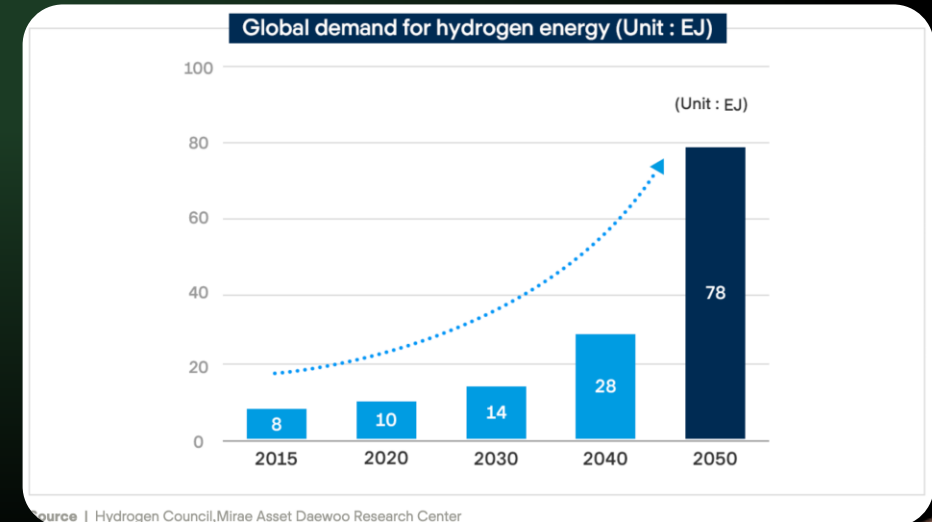
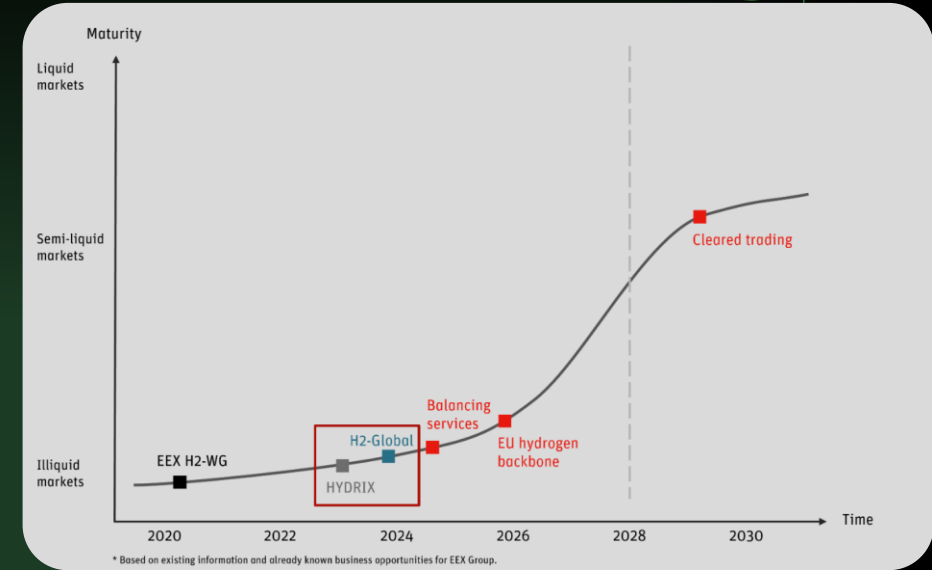
We are therefore creating the world's first certified Green Hydrogen Exchange



# The time is now - when the market is just getting developed fast



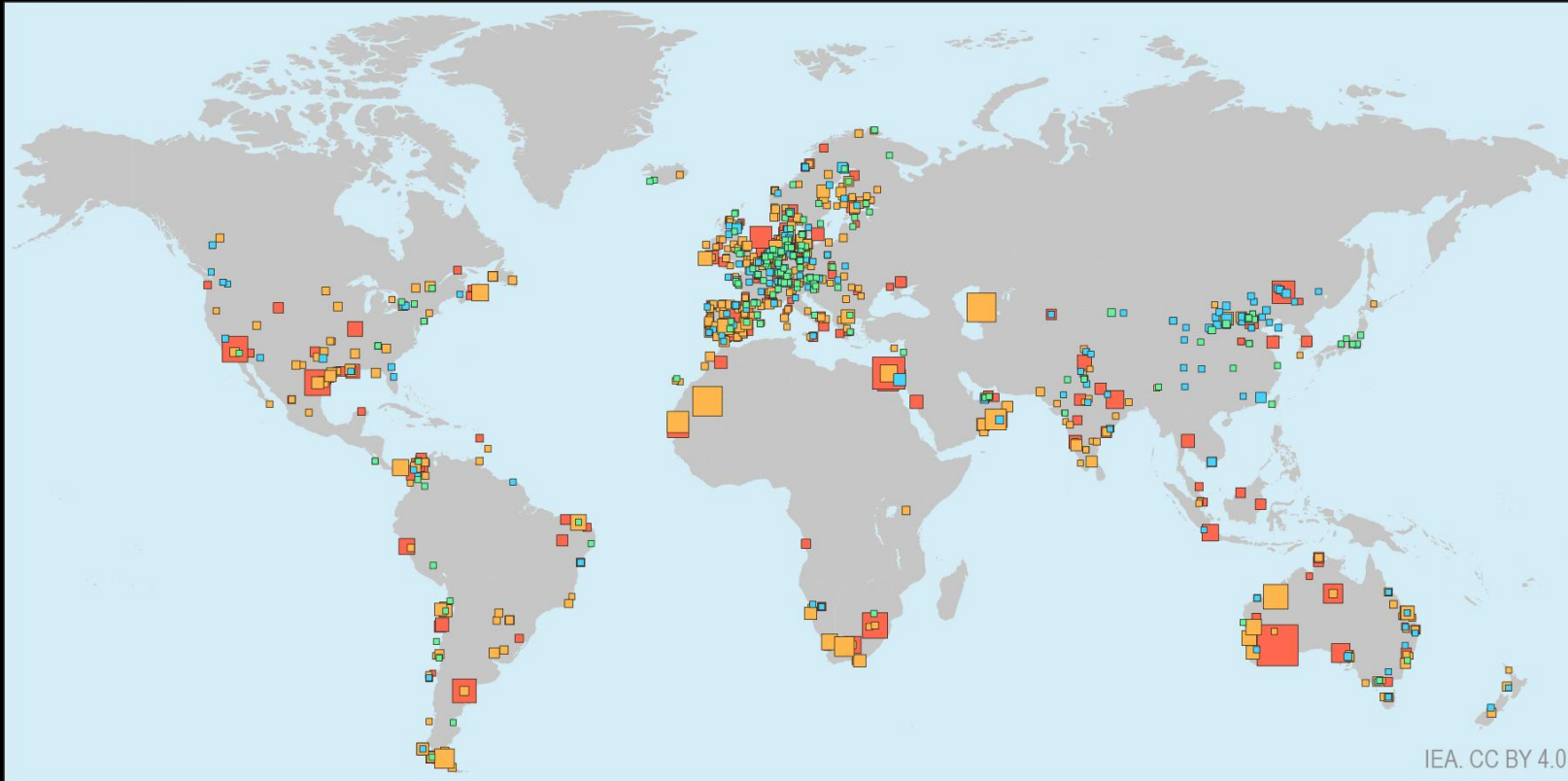
- ❖ It is clear that Hydrogen is playing a major role in the decarbonization of hard-to-abate industries.
- ❖ Investment in creating production capabilities is slow without clear visibility of offtake agreements.
- ❖ We have spoken to major buyers (like shipping, Steel, Fertilizers, Railways) and sellers in the market across US, Europe, India.
- ❖ Buyer problem is that they need deterministic supply quantities delivered at deterministic dates with fair accuracy. Seller problem is to get access to market demand and confirmed buyers before investment in the plant and machinery.
- ❖ Hydrogen will require \$1Trillion in investments over the next 10 years as per BNEF. Network effect is important and starting early and setting up initial constructs will shape the market.



The global demand for hydrogen energy is expected to grow from 8EJ in 2015 by roughly 9.8 times to more than 78EJ in 2050, which will account for 18% of the entire energy demand.

\*1EJ(exa Joule) refers to energy required by the entire world for a day (7 million tons of hydrogen gas, about 170 million barrels of

# Where is Hydrogen happening ?



75%  
No Offtake  
Agreements

IEA. CC BY 4.0

## CCUS projects

- ▲ Early stage
- ▲ Feasibility study
- ▲ FID/under construction
- ▲ Operational

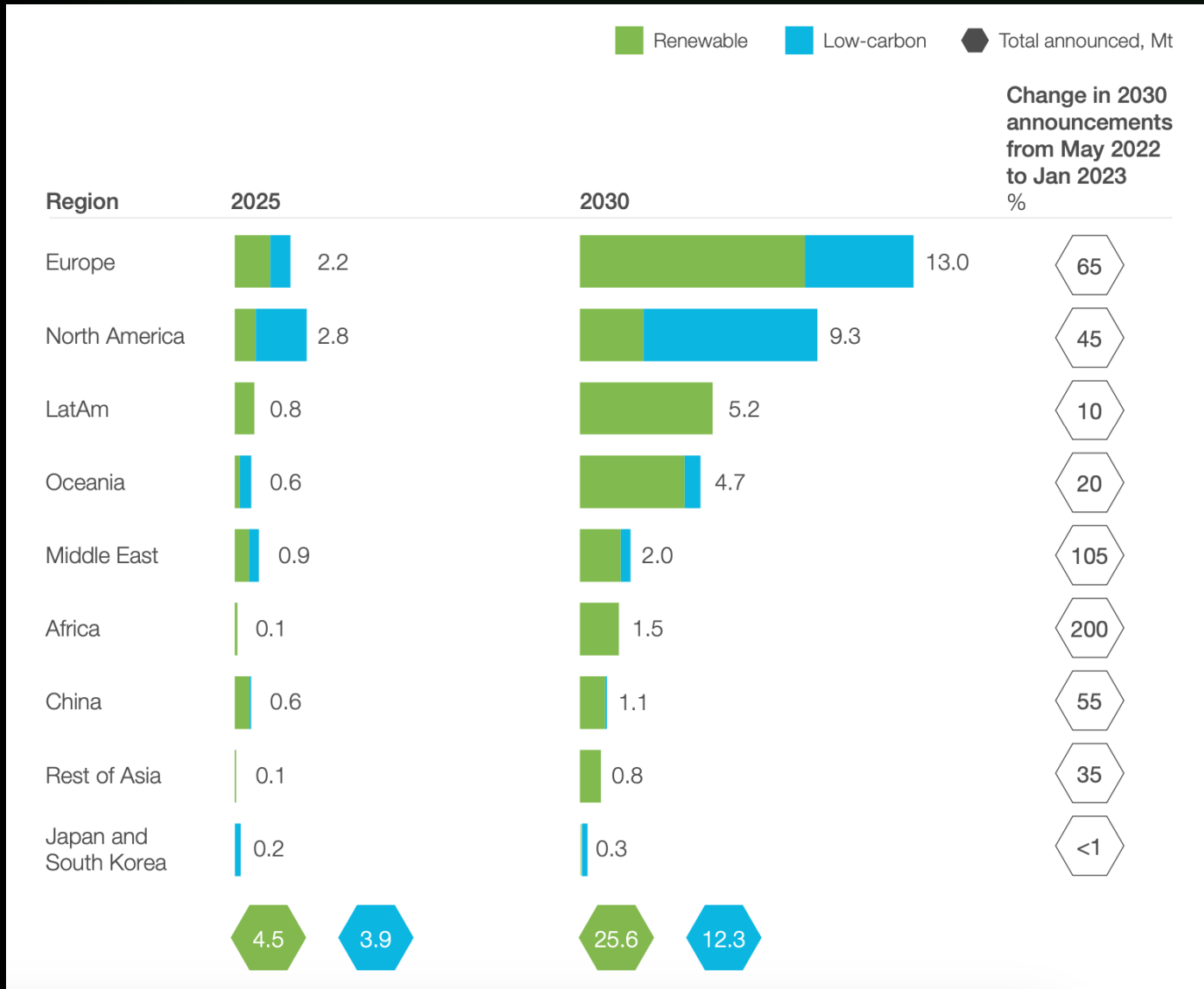
## Electrolyser projects

- Early stage
- Feasibility study
- FID/under construction
- Operational

## Capacity (kt H<sub>2</sub>/yr)

- 50 ▲
- 150 ▲
- 250 ▲
- 500 ▲
- 1 000 ▲
- 5 000 ▲
- 15 000 ▲

# Where is Hydrogen happening fast - here and now ?



Mckinsey & Co.



# Existing Exchanges are not suitable for Green Hydrogen Ecosystem



Intercontinental Exchange (ICE), CME Group, Singapore Exchange (SGX) Dubai Mercantile Exchange (DME) Tokyo Commodity Exchange (TOCOM) all offer different commodities.

However, Hydrogen is something totally different and unknown commodity in many ways:



## Unique Market Players:

Green Hydrogen and Ammonia represent specialized, less familiar commodities in comparison to traditional goods. Different players are getting into the game. Existing exchanges are mixed markets. There is no truly GREEN exchange - focussed only on sustainability.



## Production & Storage Complexity and Regulatory Requirements:

These commodities stem from renewable sources and involve intricate production processes, demanding a deep understanding of supply chains, specific environmental regulations and certifications, requiring rigorous adherence and certification verification, increasing trading complexity



## Quality Variability:

Unlike established commodities, Green Hydrogen and Ammonia exhibit quality variations due to diverse production methods and sources, posing standardization and certification challenges.

# We are focusing on four products that will create the market efficiently



1 Global Trade Physical Molecule – Ammonia, Methanol, Hydrogen  
Transport & Storage Physical Molecule – Shipping, Berthing,  
Storage

2 Trade Futures Contracts  
Trade Derivatives  
Trade Fractional Futures Contract

3 Trade Carbon Credits  
Trade Tax Credits / IRA Credits

4  
Portfolio Trading:  
  
All three collectively creates a portfolio that reduces or eliminates our carbon footprint



## Who are the users?

Producers of  
Green Hydrogen,  
Ammonia,  
Methanol

Bulk  
Berthing &  
Storage  
Companies

Bulk Transporters  
of Hydrogen,  
Ammonia,  
Methanol

Consumers of  
Green Hydrogen,  
Ammonia,  
Methanol

Commodity  
Traders in the  
Green Ecosystem

## Marketplace

Blockchain based Smart Contracts  
Distributed Ledger for Certificates

## What are they Trading?

Green  
Molecules for  
delivery

Power Purchase  
Agreements

Offtake  
Agreements

Logistics  
Agreements

Carbon & IRA  
Tax Credits

Powered by



Stitching the Physical and Digital Green Economy Together

# GEX will be designed for Global Go-to-Market from day-1



## Why is global marketplace required?

The decarbonization need is global and trading of energy is already global

Trading in **Local Currencies** create an equitable access to capital and encourage self-sufficiency in each market

But **Rules** (manufacture), **Regulations** (trade), **Certifications** (quality) and **incentives** are local

# Thank you

:Earth



1. Time is **now** before the market fully develops
2. An efficient marketplace will speed up Industry development
3. A global tamper-proof certification on common standards across the carbon value-chain will provide the required guarantee
4. Global cooperation is the only way to deal with climate change