



# Shaping the global energy transition.

**NABU Maritimes Fachgespräch 2025**

*Der H2Global Ansatz im Kontext der Dekarbonisierung der Schifffahrt*  
Timo Bollerhey, Februar 2025



# Content

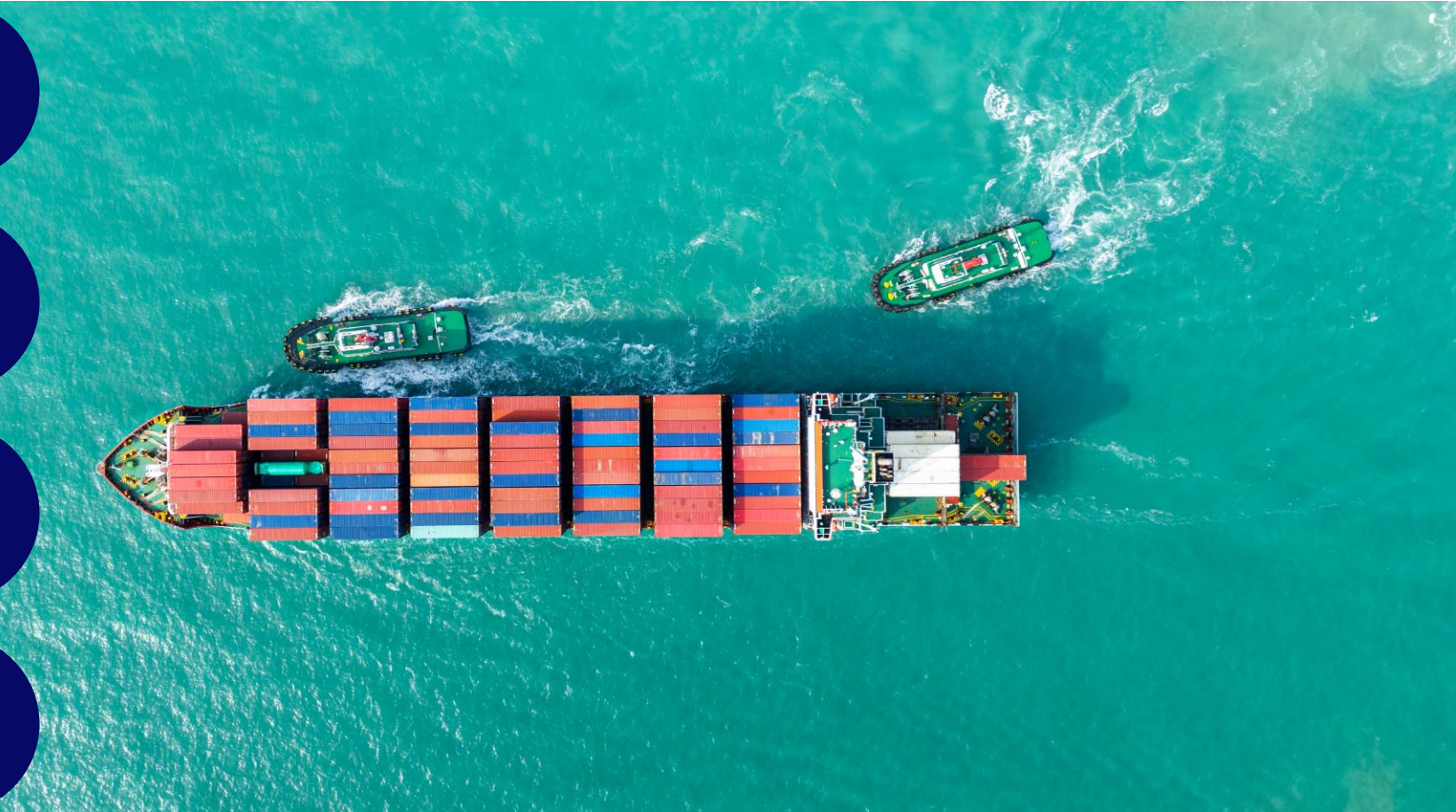


Clean fuels  
market status

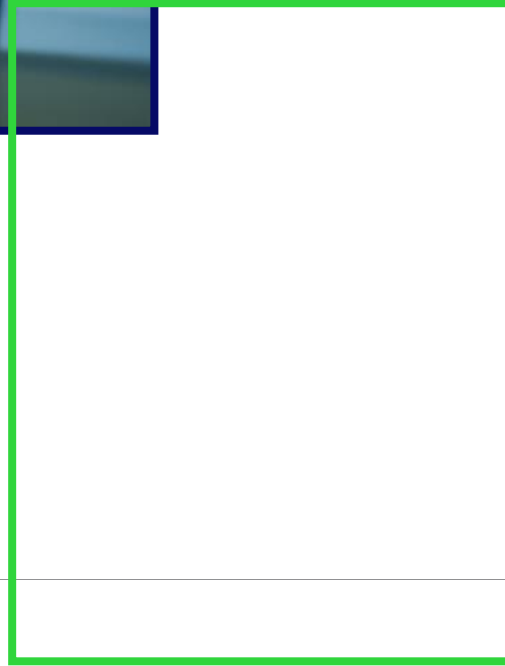
The H2Global  
Mechanism

Tenders and Int.  
Cooperation

H2Global & Shipping



# Clean fuels market status



# Market creation first, then market ramp up.

## Functioning markets have:

 **Price transparency**

 **Liquidity**

 **Legal security / rules based**

 **Low market barriers**

## Clean fuel markets currently have:

- No clear pricing signal on supply or demand side
- Indexes based on assumptions

- Limited number of transactions, large volumes only
- Over the Counter (Otc) and “point-to point” only

- Lack standards and certification schemes
- Insecurity in terms of recognition and methodologies

- High entry barriers

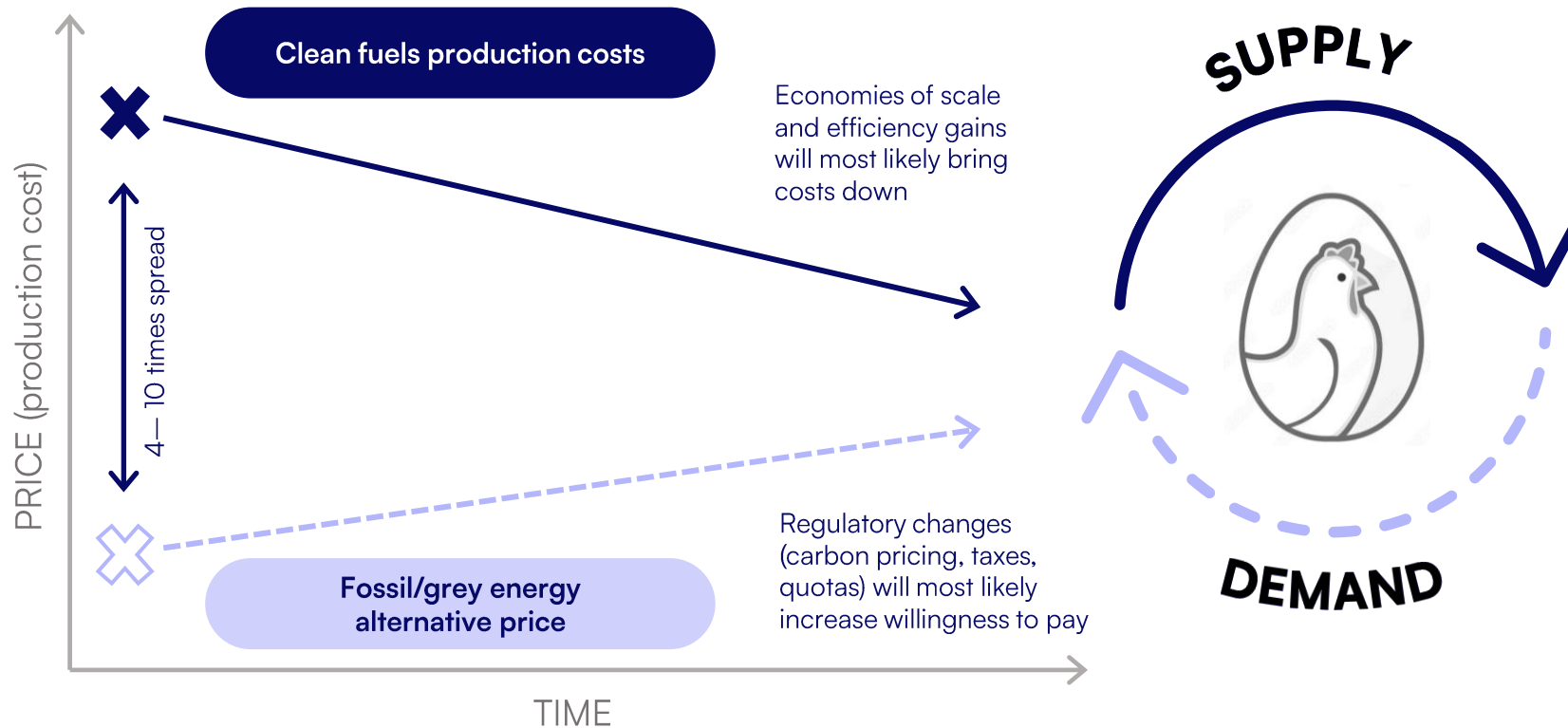


### KEY TAKEAWAY

Clean fuel markets are nascent, and to meet climate targets we need to accelerate their creation.



# Clean fuels “Offtake-Conundrum”



- Despite several announcements there are **no long-term and cost-covering offtake**
- Without offtake there is **no Final Investment Decision (FID)**
- Expected **decrease of production costs** delays FID further

- Without regulatory stimulus, **there is no/limited willingness to pay a “green premium”**
- Without supply security at price-comparable conditions, there is **no demand uptake**

# Shipping: Climate impact and targets

80%

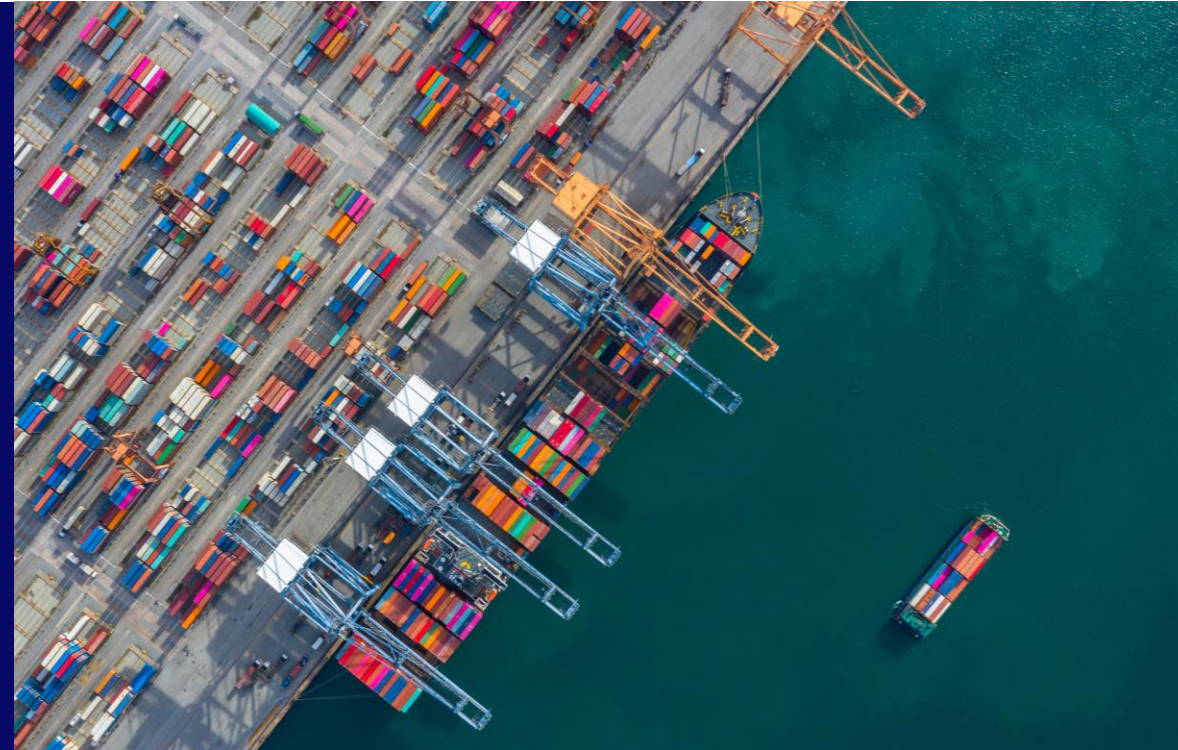
Today, more than 80% of the world's traded goods travel by ship

2-3%

Maritime transport accounts for 2-3% of GHG emissions.

40%

IMO aims to fully decarbonize international shipping by 2050, reduce carbon intensity of international shipping by at least 40% by 2030.



**+** CBAM, ECAs and EU ETS create additional regulatory pressure to decarbonize

# Key barriers to scaling zero-emission fuel supply

Fuelling the Future of Shipping:  
Key Barriers to Scaling Zero-Emission Fuel Supply



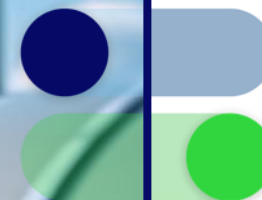
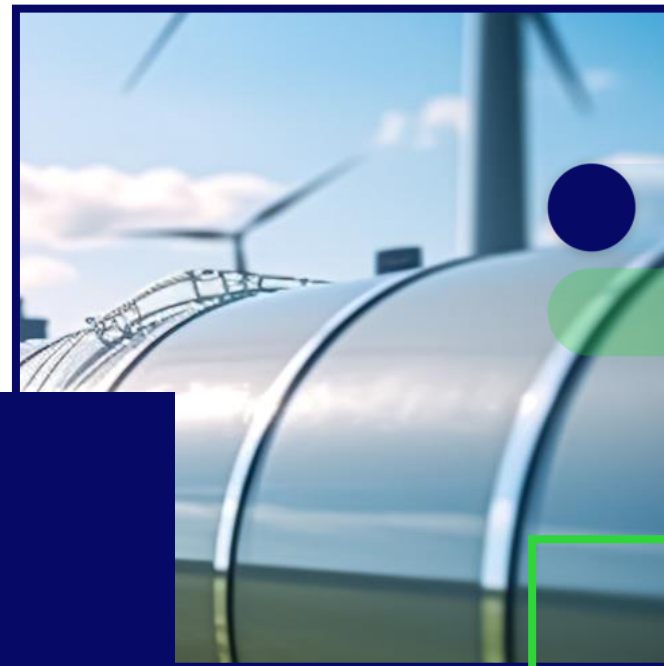
Ten key barriers across five categories surfaced in 1:1s and live roundtable discussions with stakeholders across the shipping value chain

Customer and consumer demand	<ol style="list-style-type: none"><li>1 Lack of clear demand signals with sufficient willingness to pay: Methanol uptake volumes in dual-fuel ships remain uncertain. Companies struggle to absorb green premiums alone</li><li>2 Expectations gap between fuel producers and carriers on terms of offtake agreements: Friction on length (long term vs. spot), volume (how much) and price (what premiums are acceptable)</li></ol>
Economics and finance	<ol style="list-style-type: none"><li>3 Lack of credible third-party cost estimates: Makes it difficult for financiers and offtakers to assess investments and contract options for different zero-emission fuel pathways</li><li>4 Lack of fit-for-purpose financing instruments: Time horizons and risk appetite of existing financing options not suitable, e.g. PE fund life too short, infrastructure funds come in too late, insufficient pre-FID funding</li></ol>
Regulatory issues	<ol style="list-style-type: none"><li>5 Lack of strong near- to mid-term mandates or a global price on carbon: Policies emerging (e.g. EU, IMO) but need geographically reciprocal regulations to set a demand-side price and volume floor</li><li>6 Lack of standard definitions, methods and certifications: Hinders contracting terms, e.g. what defines "green"; how to measure, track and report emissions; how to assure quality</li></ol>
Supply chain and infrastructure enablers	<ol style="list-style-type: none"><li>7 Methanol- and ammonia-specific risks: Access to biogenic CO<sub>2</sub> for methanol, especially in locations close to cheap renewables, is getting tougher. Safety, especially for use as a marine fuel and handling at ports, is the biggest barrier for ammonia</li><li>8 Competition and lack of alignment with other sectors: Shipping competing against vs. collaborating with chemicals for methanol, fertilizers for ammonia and more broadly across sectors for H<sub>2</sub> and CO<sub>2</sub></li><li>9 Zero-emission fuels infrastructure gap: Uncertainties on responsibility for last-mile logistics. Physical gap between promising e-fuel locations and major ports — the infrastructure still needs to be expanded</li></ol>
Organizational factors	<ol style="list-style-type: none"><li>10 Decision-making and risk appetite are limited by gaps in expertise: Decarbonization decisions and P&amp;L do not always sit with the same team, creating friction and requiring new ways of working together within companies</li></ol>

Source: Interviews with maritime decarbonization decision-makers from private-sector companies along the value chain; London International Shipping Week roundtable

- 1 Lack of clear demand signals with sufficient willingness to pay:** Methanol uptake volumes in dual-fuel ships remain uncertain. Companies struggle to absorb green premiums alone
- 2 Expectations gap between fuel producers and carriers on terms of offtake agreements:** Friction on length (long term vs. spot), volume (how much) and price (what premiums are acceptable)
- 3 Lack of credible third-party cost estimates:** Makes it difficult for financiers and offtakers to assess investments and contract options for different zero-emission fuel pathways

# The H2Global mechanism





# H2Global's mechanism promotes timely and effective market creation for clean fuels

## Key elements

### Investment Security



#### Creating business cases and investment security.

Shifting the timing of market creation by promoting the market ramp-up until a viable low-carbon market has developed.

### Defined System



#### Long-term purchase agreements over 10 years.

Clear definition of max. funding volume, products, geography and (sustainability) criteria by funding body.

### Cost of Difference compensation



#### Financial compensation of Cost of Difference.

Set up of an intermediary — the **Hydrogen Intermediary Company**.



### Competition



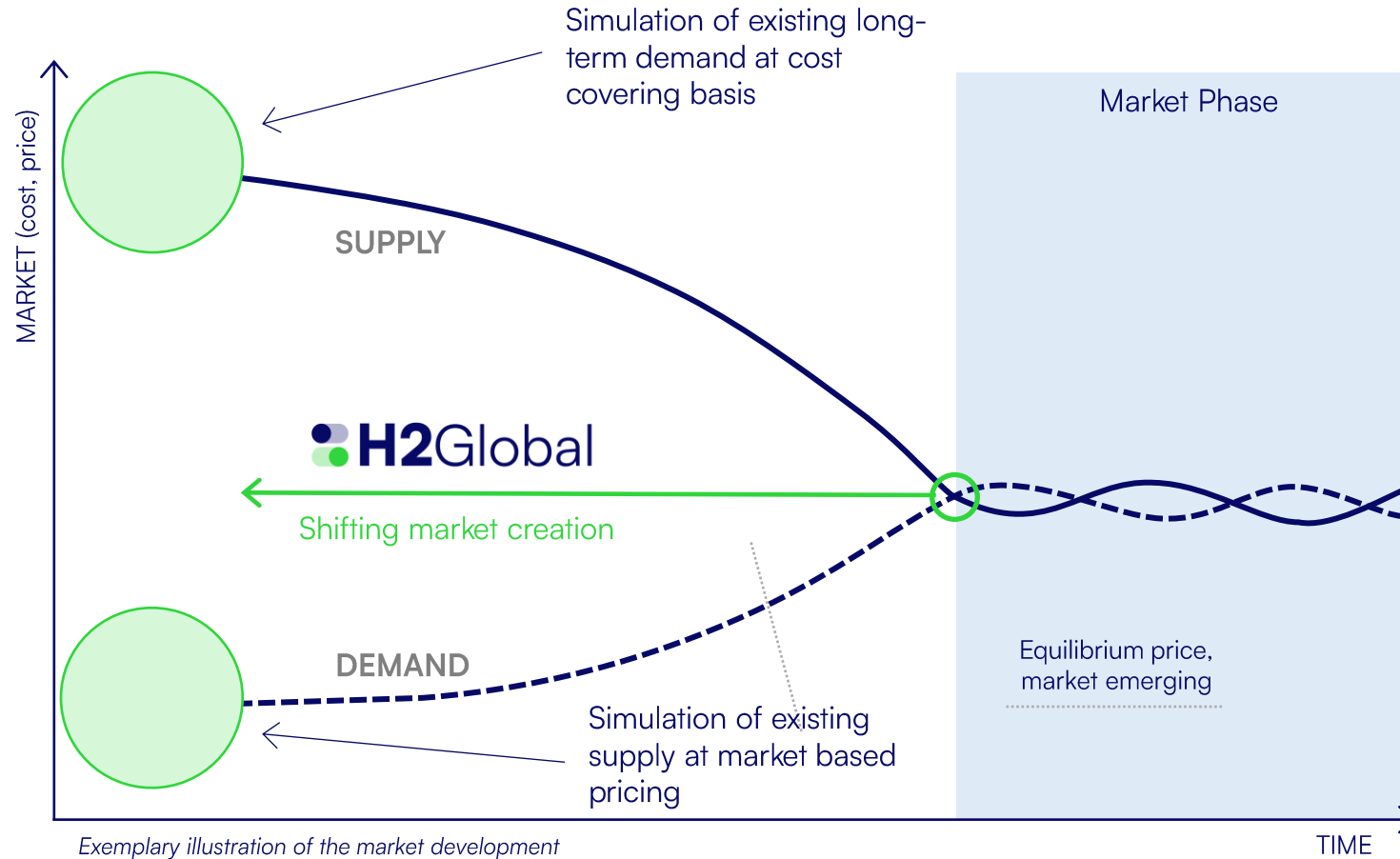
#### Double-auction: Market-based bidding procedures on the supply and demand side.

Minimization of the price difference to be compensated by public funds.

# Market simulation has a catalytic effect and shifts market creation forward

**Simulate  
to  
create**

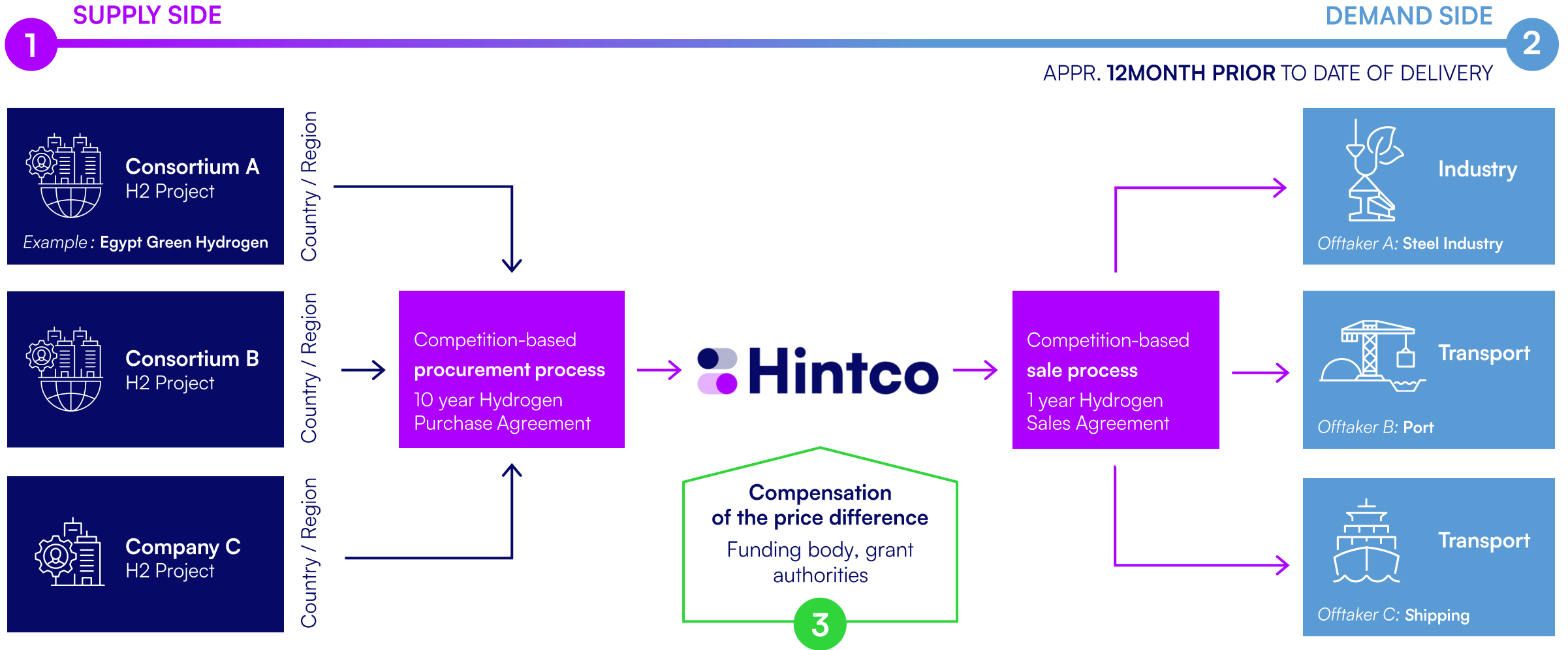
Immediate creation of  
simulated market on  
supply and demand side.



**KEY  
INSIGHT**

**H2Global  
stands as  
the sole  
active  
global  
green  
market  
maker.**

# The double-auction sequence

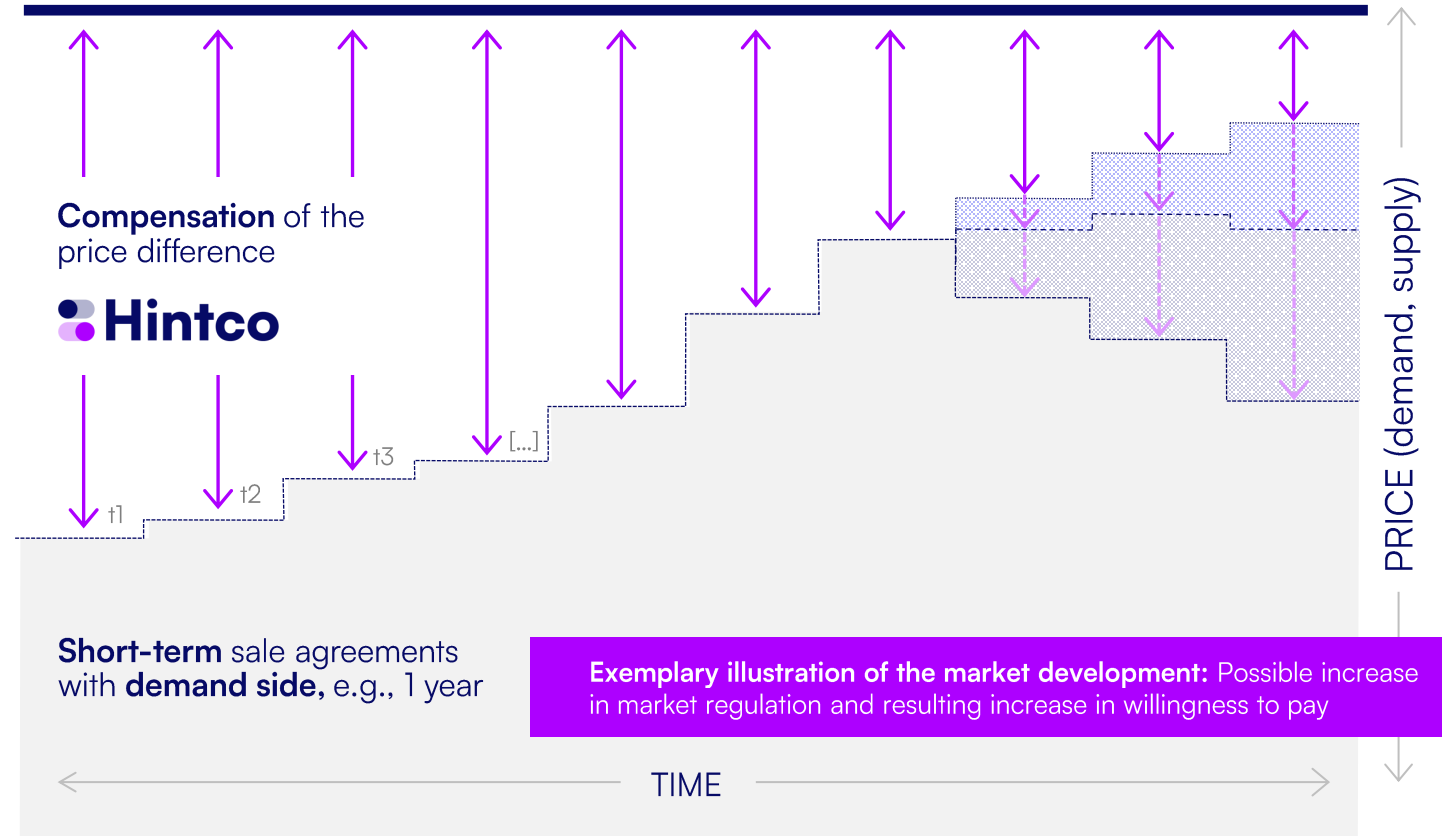


# The H2Global market-driven compensation mechanism ensures the most efficient use of funds for maximum impact

H2Global auctions uncover supplier and offtake pricing dynamics.

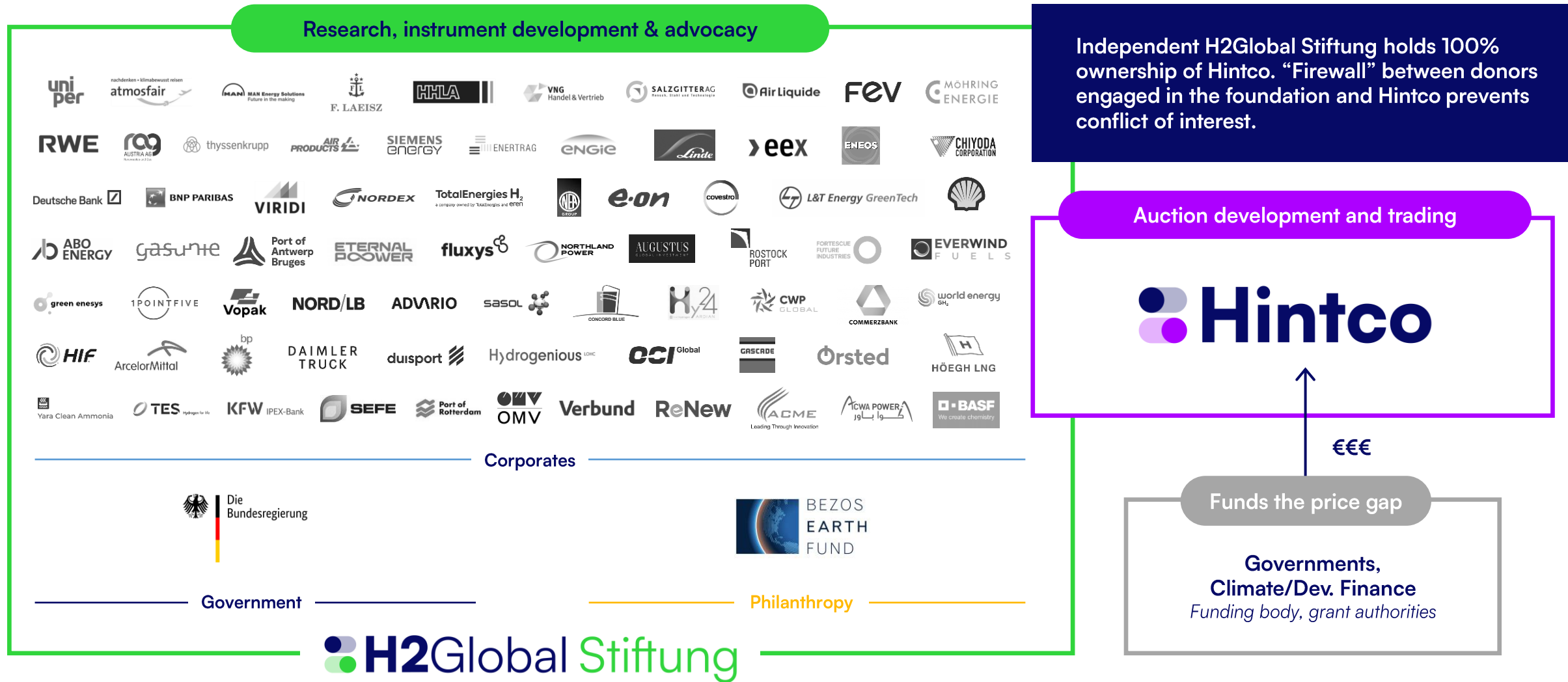
To create **liquidity** and support market development, **short-term** and **broad-based price signals** are **decisive**.

Long-term purchase agreement with **supply side**, multi-year fixed price and terms

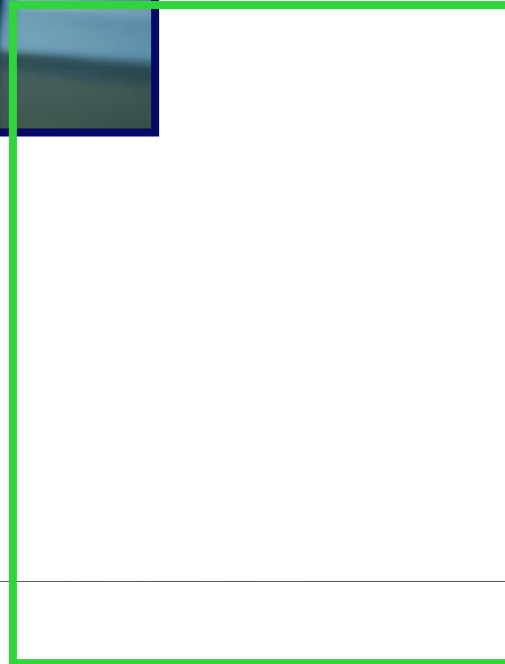
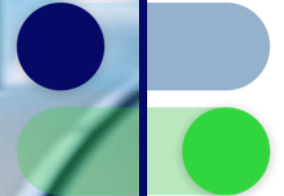
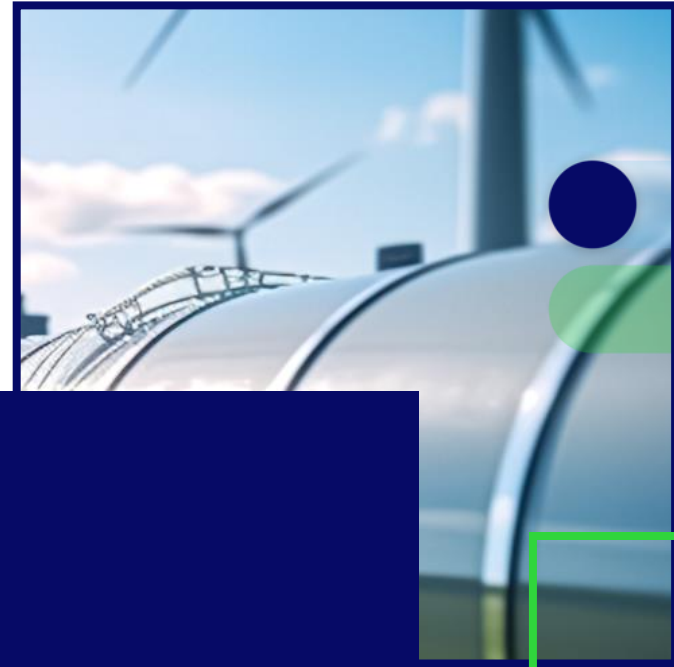




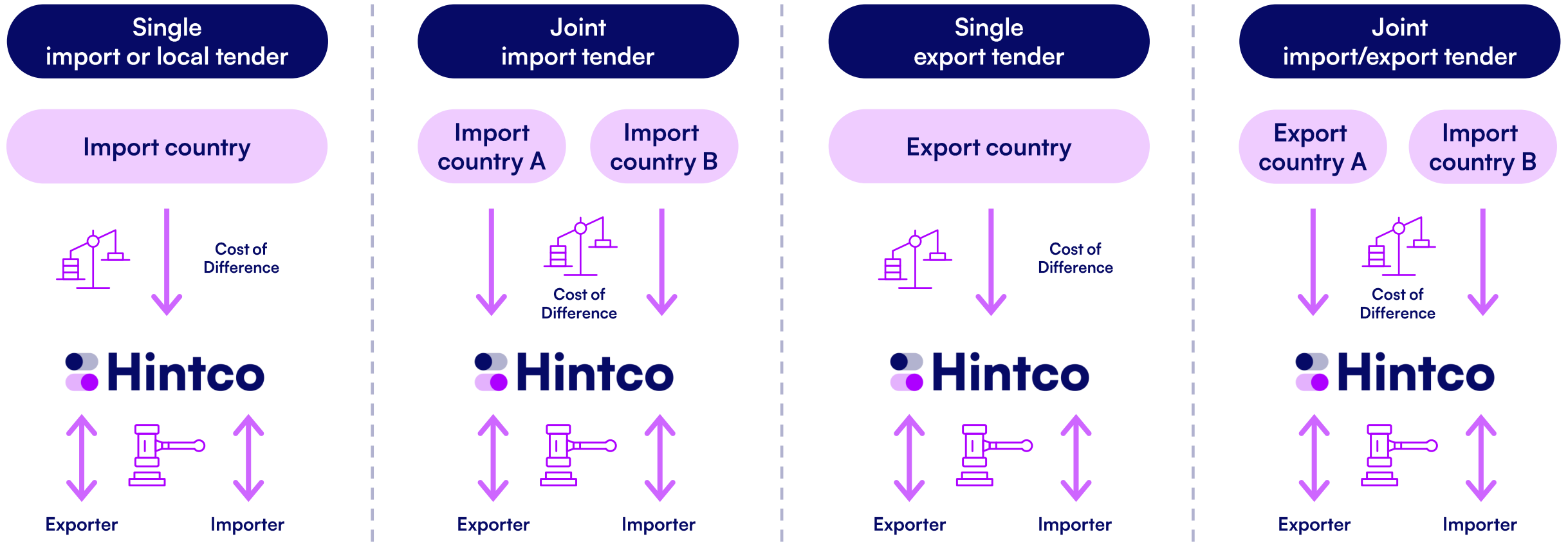
# A non-profit foundation creates independence of Intermediary



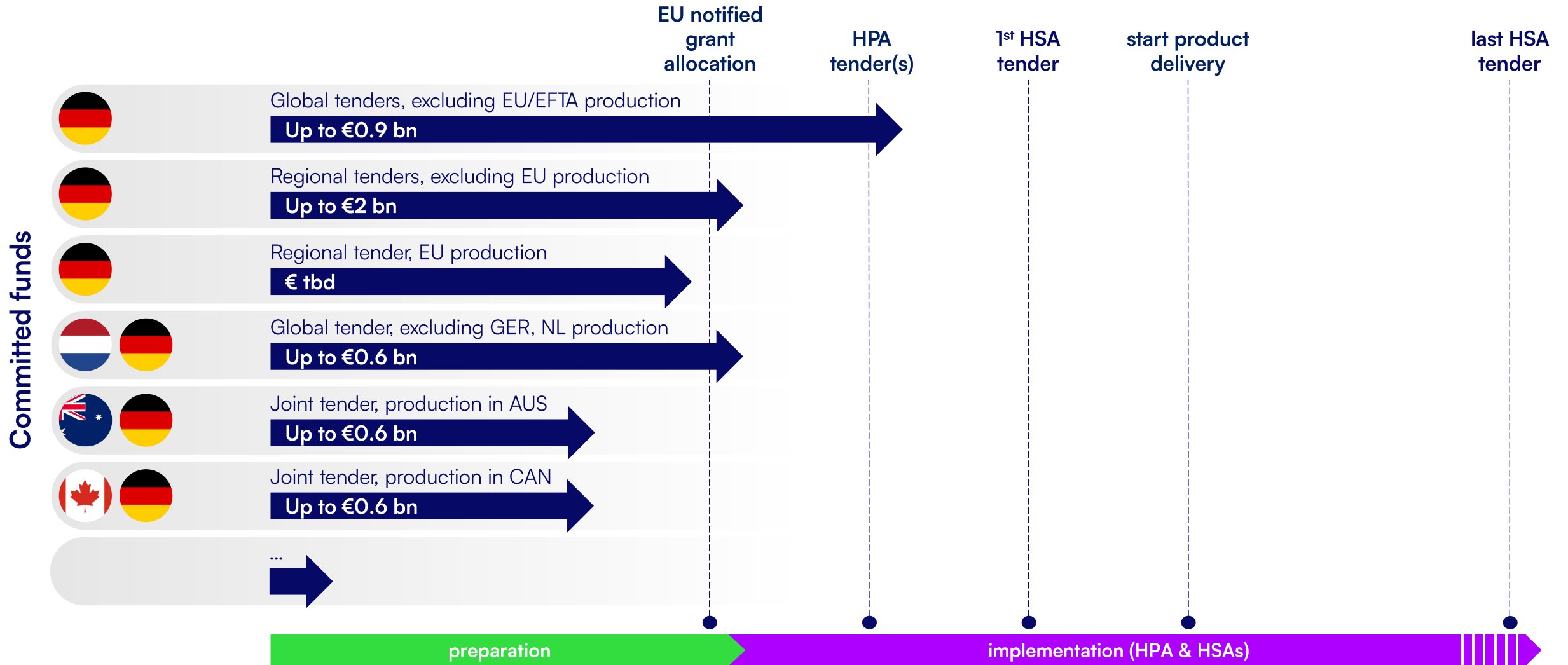
# H2Global: Tenders and international cooperation



# Exporters and importers of clean fuels can all make use of H2Global tenders

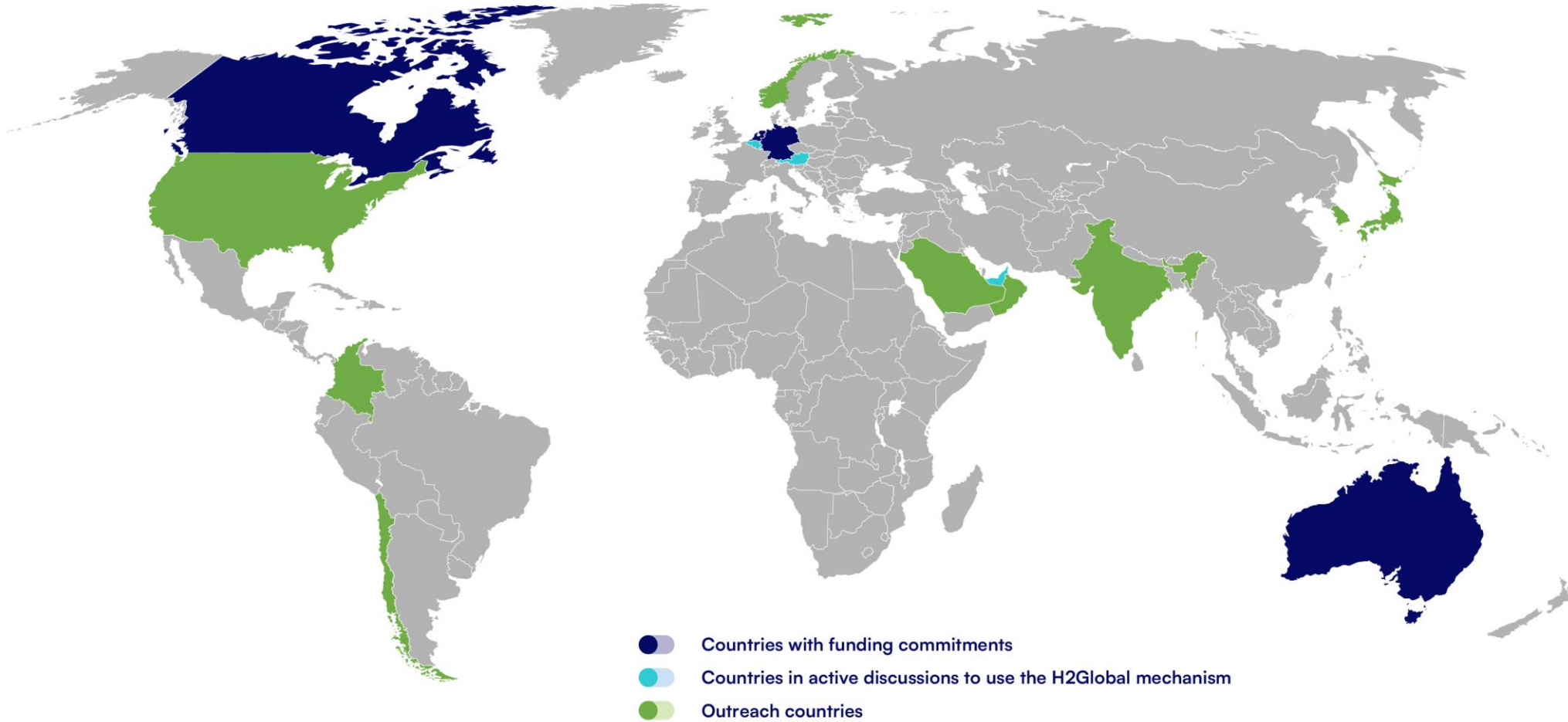


# €5.86 bn have been committed/earmarked so far to H2Global tenders

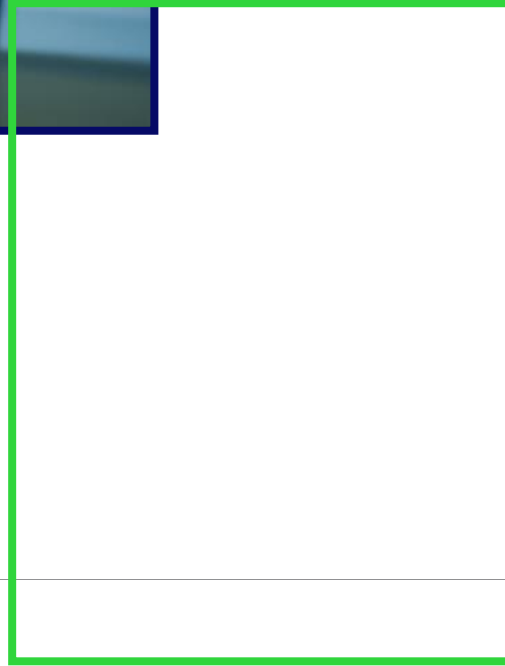
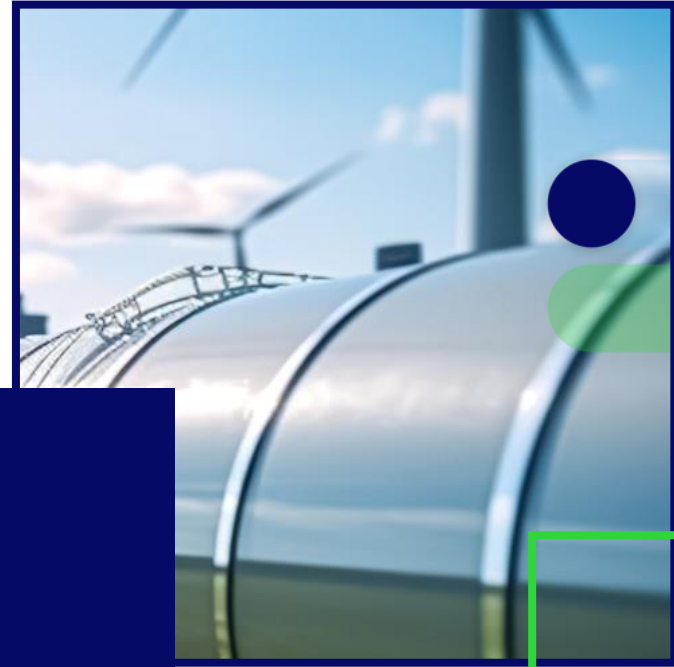




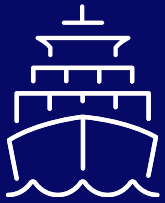
# H2Global worldwide



# H2Global & shipping



# Actions underway to scale zero-emission fuel supply

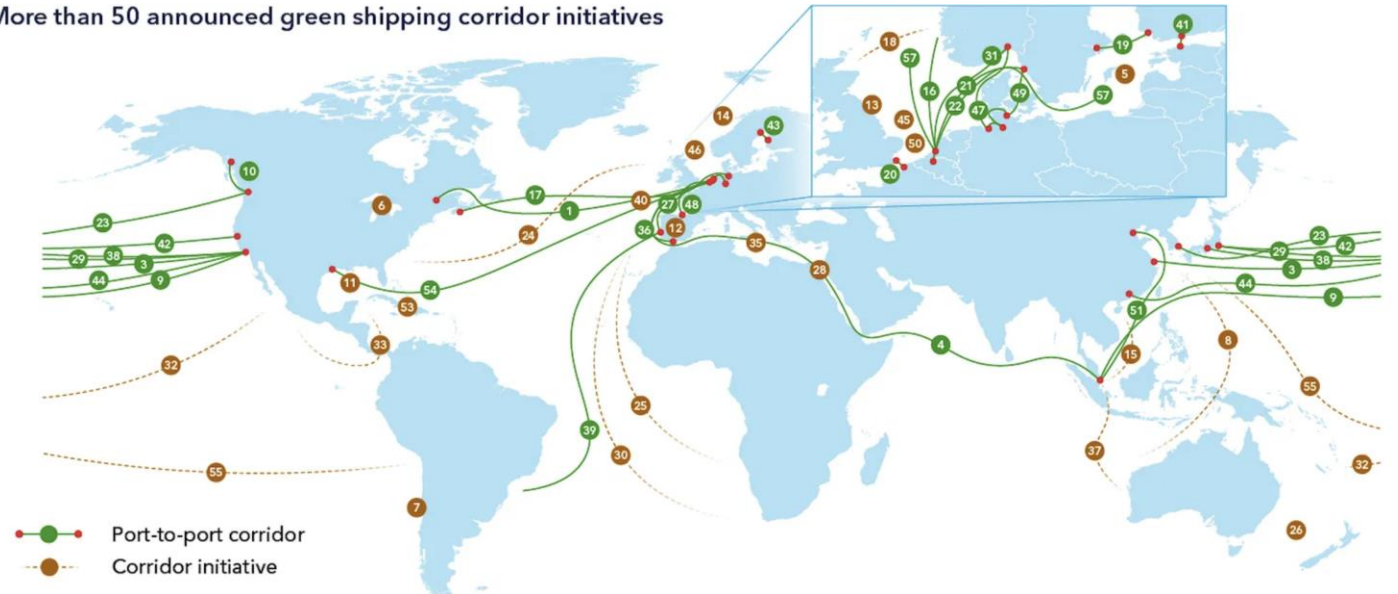


**Public-private** demand aggregation to drive offtake agreements (ZEMBA)



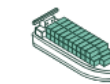
Integrators pulling the supply chain together to accelerate action (e.g. MMC, Green corridors)

More than 50 announced green shipping corridor initiatives



# Landscape of market acceleration instruments\*

● Multiple Exist  
 ● Single Exists  
 ● In development (or comparable)  
   Nothing in operation  
 ↕ Working in conjunction



Hydrogen

Shipping

SAF

Steel

Cement

**NON-EXHAUSTIVE** key examples highlighted

Corporate Enablers		SBTi sector guidance, GHG - Protocol				
Verification and Reporting	Product standards & certification schemes	Open Hydro Initiative, Green Hydrogen Organisation, CertifHy	RSB, ISCC	RSB, ISCC (CORSLA, EU RED, PLUS)	Responsible Steel Standard	Concrete Sustainability Council
	Buyer Corporate Claims Guidance		RMI & MMCZCS Maritime B&C Scheme	SAFc B&C Guidance	RMI Green Iron B&C scheme	GMA-RMI Concrete initiative
Marketplace Coordination	Value chain coalitions (buyer commitments)	Clean Hydrogen Mission	First Movers Coalition	First Movers Coalition, IATA	First Movers Coalition, SteelZero	First Movers Coalition, ConcreteZero
	Private Suppliers and Buyers Alliance	Multiple regional efforts exist	Zero Emission Maritime Buyers Alliance (ZEMBA)	Sustainable Aviation Buyers Alliance (SABA)	Sustainable Steel Buyers Platform	GMA-RMI Concrete initiative
	Book and Claim System		RMI & MMCZCS B&C registry, RSB	SAF Certificates (e.g., SAFc registry, RSB, Fly-I)		
Active Market Participants	Green Market Makers	H2Global				

**H2Global as the first Global Green Market Maker which can also be applied to the Shipping Sector**

\*Rocky Mountain Institute (RMI) 2024



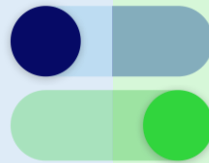
# Tackling barriers using H2Global's proven mechanism

## Barrier

## H2Global added value

1

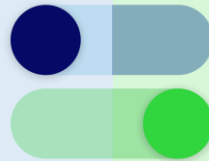
Lack of clear demand signals with sufficient willingness to pay



Intermediary — Hintco — signs purchase and sales agreements for clean fuels like e-methanol and ammonia providing clear demand signals. It also absorbs cost-of-difference by efficiently deploying concessionary financing.

2

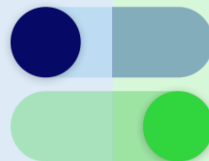
Expectations gap between fuel producers and carriers on terms of offtake



Intermediary — Hintco — places itself between producers and carriers as a trader offering conditions that are acceptable to both.

3

Lack of credible third-party cost estimates



H2Global's double-auction mechanism helps uncover prices on a regular basis and shares the information transparently with the market.

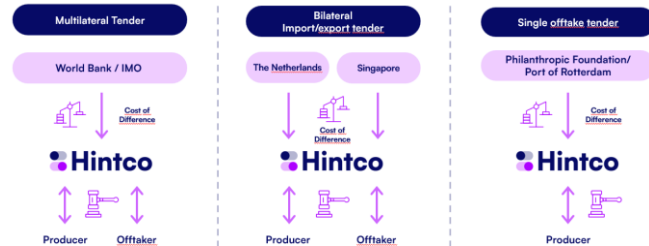
# Potential tender design options for clean shipping fuels

## Key components

### Funding Allocation

Funding for differential cost in a Green Corridor can be provided by **multilateral funding, the host countries of the involved ports, or a combination of the ports and philanthropies** interested in clean shipping.

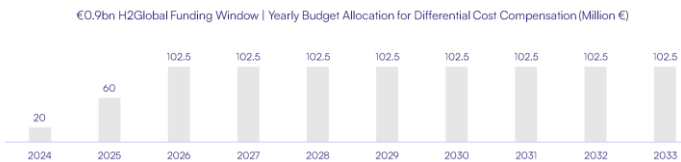
For tenders with multiple countries involved, countries may decide to split the budget evenly or not.



### Duration

H2Global tenders typically have a funding period of **10 years on the supply side. Demand side contracts are short-term**, fitting volatile and price-sensitive offtake from **dual-fuel ships**.

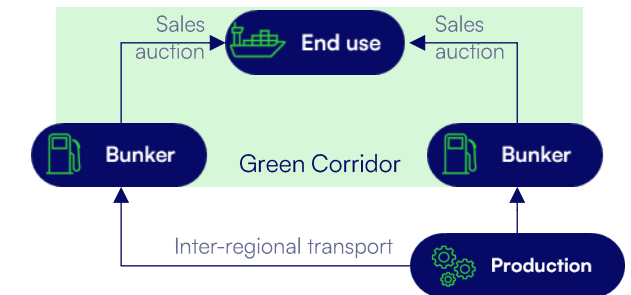
Hintco can annually seek the required funds from funders, and these funds are distributed gradually over the funding period, or funds can be provided as a single lump sum upfront.



### Geographical Focus

For Green Corridors, the geographical origin of hydrogen products is best defined as **global**.

The target for deliveries in Green Corridors would be defined as either of the **two ports** on the end of the green corridor.



### Product Selection

Joint decision on the specifics of the funding window in terms of the targeted hydrogen product(s).

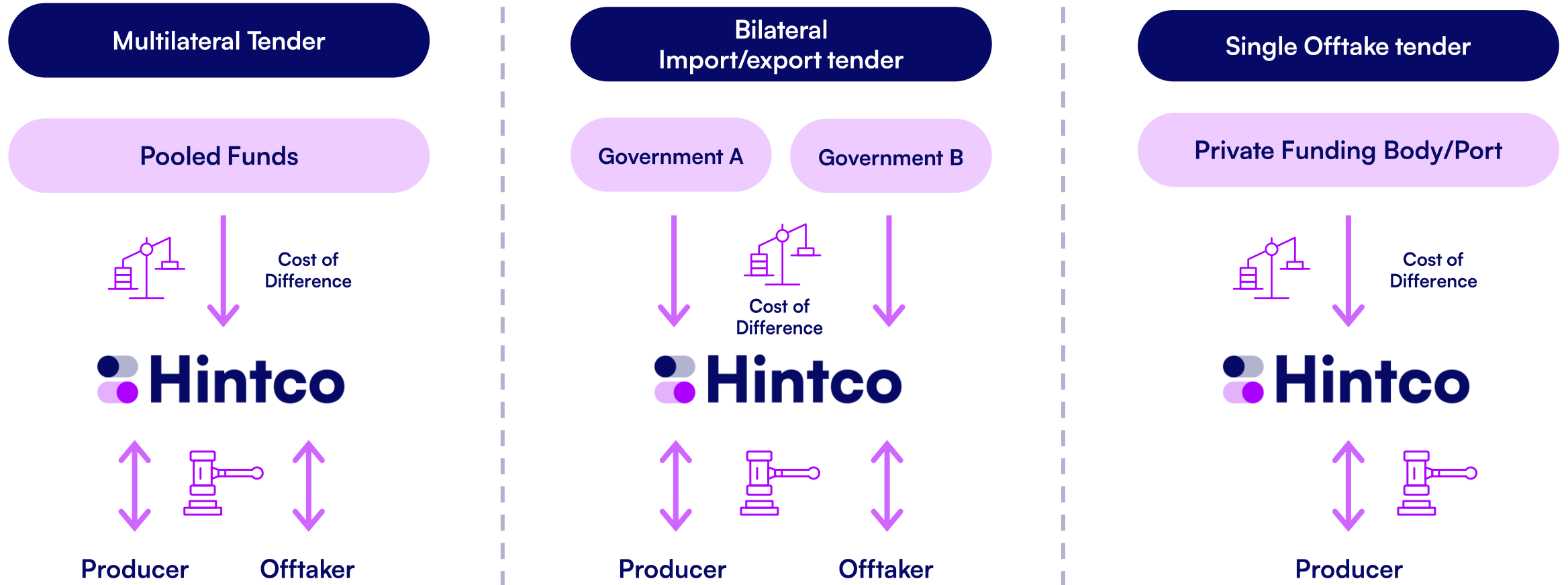
Options in the shipping sector target clean shipping fuels, including **clean ammonia, clean methanol or e-methane**. Funders may choose to focus on one clean fuel type per lot.

### Sustainability Criteria

For the tenders, countries need to specify emission thresholds and/or eligible production technologies, in line with relevant regulations.

Additionally, **funders may want to include other environmental and social sustainability criteria** in their tender.

# Possible tender designs for clean shipping fuels





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