

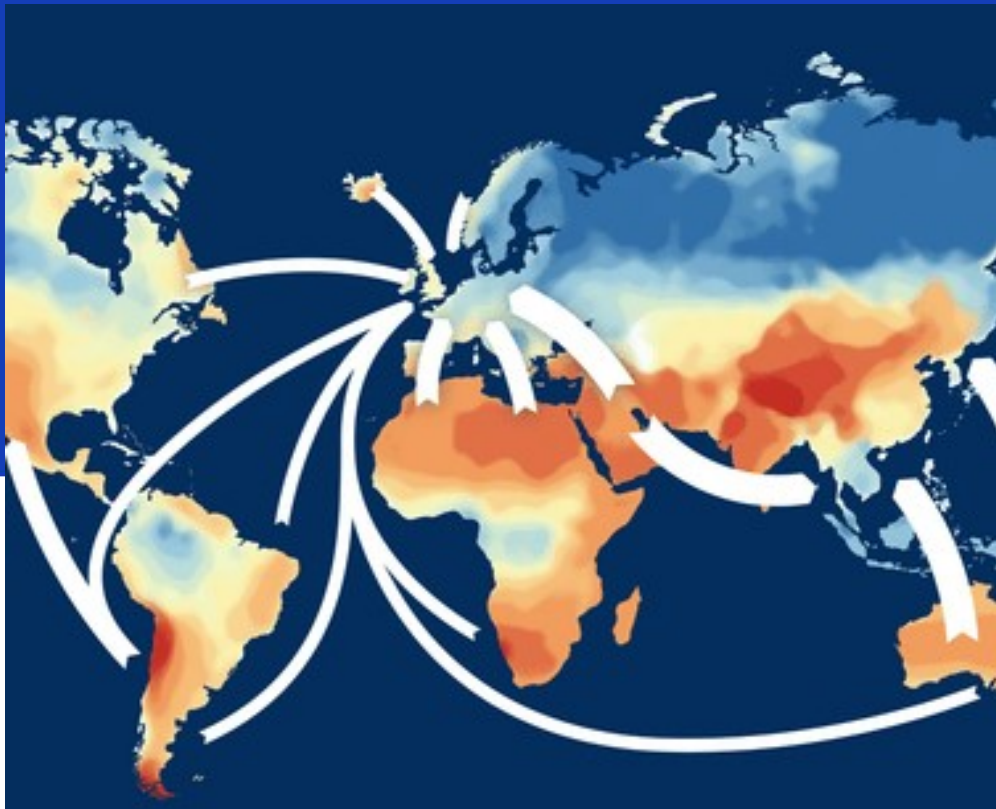


SHIP>NL sessie I 2024

Drs. M.C.M. Rijkers

[Start presentation](#)

Agenda SHIP>NL sessie I 17 januari 2024



1. Welkom
2. Deep dive: Updates Min. EZK |
 - Waterstofimport beleidsagenda 2024
 - Hydrogen International Trade Forum
3. Deep dive: Financiering van internationale waterstofprojecten |
Itske Lulof, InvestInternational
4. Afsluiting & Borrel

Huisregels

- Telefoon op 'stil'; laptop gesloten
- Vragen? Steek je hand op!
- De moderator zorgt ervoor dat je vraag beantwoord wordt (eventueel achteraf).
- Slides worden na de sessie gedeeld en zijn te vinden op [SHIPNL: Sustainable Hydrogen Import Program Netherlands | Nationaal Waterstof Programma](#)
- We bespreken uiteraard geen marktgevoelige zaken.
- Chatham house rules: De besproken informatie mag gedeeld worden, maar zonder de spreker te onthullen.

Meerjarig kennisprogramma met 5 lijnen

- In deze sessie:

| 1 Technisch economisch | 2 Beleid | 3 Markt | 4 Internationaal | 5 Omgeving |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> Inzicht in importketens productie-conversie-transport-opslag-reconversie-gebruik Vraagontwikkeling, scenario's Infrastructuur & systeemintegratie: corridors, benutten bestaande infra. Technology assessments, R&D | <ul style="list-style-type: none"> Impact van 'Fit for 55', REDII, Delegated acts, ETS/CBAM, etc. Impact van certificering en CO2 allocatie: emissiefactoren, LCA ketenanalyse, etc. Financiering en stimulering (EU & NL): IPCEI, PCI, TEN-E, JTF, EIB, Horizon Europe, MOOI, DEI, MIEK, SDE++, etc | <ul style="list-style-type: none"> Marktmodellen: bilaterale contracten, vrije handel, waterstofbeurs Internationale handelsstromen: verwachte vraag- en aanbodvolumes en transportstromen Importtarieven, trade agreements en handelsbeperkingen, WTO, etc. | <ul style="list-style-type: none"> Samenwerking met omringende EU/niet-EU importlanden om corridors te ontwikkelen Concurrentie met omringende EU/niet-EU importlanden Geopolitieke aspecten: strategische voorraden, afhankelijkheid, politieke stabiliteit van exportlanden | <ul style="list-style-type: none"> Ruimtegebruik van ketenelementen Veiligheid: brandbaarheid, zorgwekkende stoffen, risicocontouren, etc Milieu: stikstof, lekkage Maatschappelijke acceptatie MVO / samenhang met SDG's in exportlanden |

Actualiteiten | tour de table



Updates Min. EZK

- Han Feenstra
- Rodrigo Pinto Scholtbach
- Carla Robledo
- Justin Rosing





Waterstofimport beleidsagenda 2024

17-01-2024



Beleidsprioriteiten





Focusgebieden 2024

1

Intra-EU Samenwerking

- Import partners: Duitsland en België
- Maritieme corridors: Spanje en Portugal
- EU Backbone: Noorwegen en Denemarken

2

Multilaterale Samenwerking

- Clean Energy Ministerial (CEM)
- IPHE
- IEA

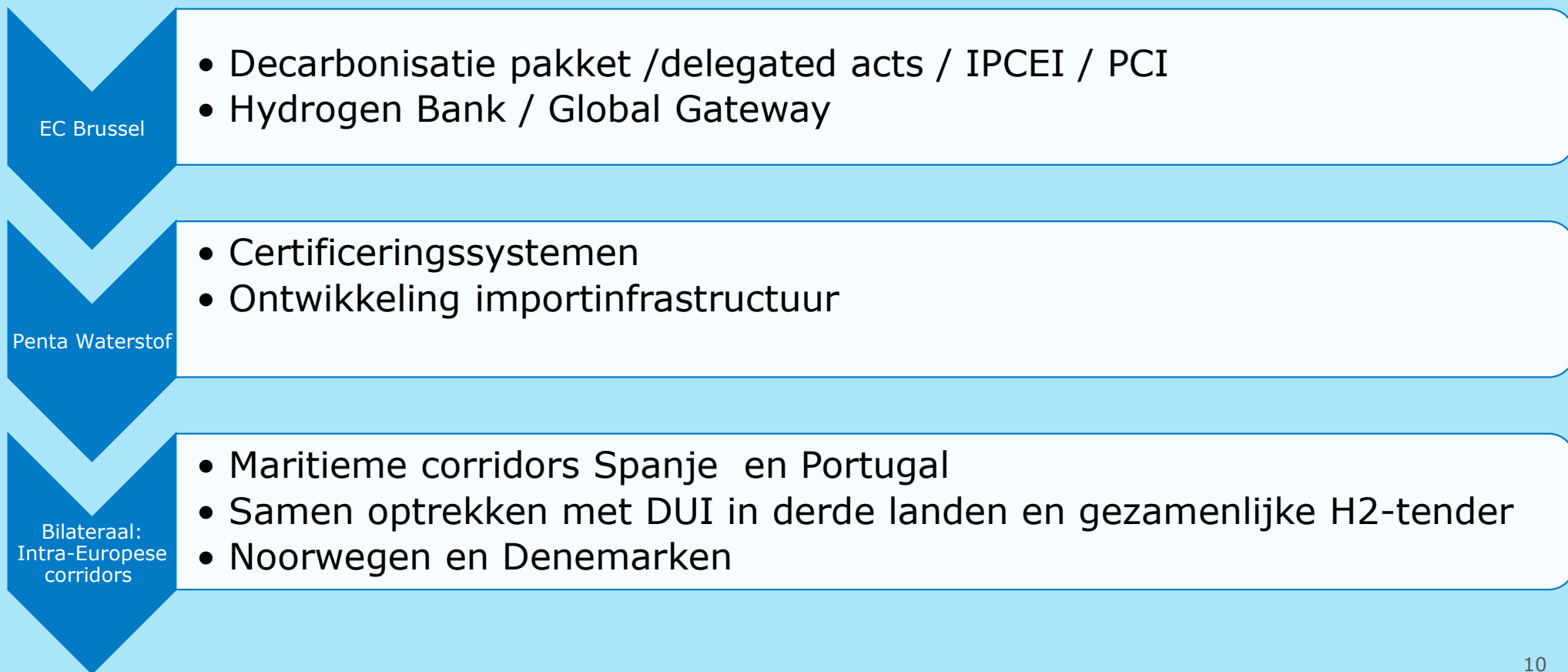
3

Partnerschappen met non-EU Landen

- Midden Oosten: Oman, VAE, Saudi Arabië
- Noord-Amerika: Canada, VS
- Afrika: Marokko, Egypte, Zuid-Afrika, Namibië
- Zuid-Amerika: Brazilië, Chili, Uruguay
- Azië: India, China, Japan en Zuid-Korea
- Australië



1 (Intra) Europese Importstrategie



23-1-2024



2 Multilaterale samenwerking



- Data verzameling: Global Hydrogen Review
- Global H2 Ports Coalition / H2 Twin Cities
- Coördinatie en monitoring NW EU H2 markt
- Dialoog importerende-exporterende landen (IHTF)



- Veiligheid normen en standaarden
- GHG emissie berekeningen / ISO standaard
- Handelspolitiek (i.s.m. WTO)



- Internationale onderzoek
- Ondergrondse waterstofopslag taak in opdracht van EZK
- Samenwerking op certificering met IPHE

Multilaterale organisaties



World Hydrogen Summit Rotterdam






Launch of the International Hydrogen Trade Forum

24 July 2023




2023 Co-Chairs*



**Co-chairs rotate on an annual basis*

Country members*



**Other countries in process of joining the IHTF leading up to COP28*



International Hydrogen Trade Forum value proposition

Unique Forum for



High-level Ministerial dialogue on cross-border trade in hydrogen and derivatives, bringing together key prospective exporting and importing countries



Advancing public-private cooperation and dialogue between **Ministers and CEOs** of leading companies to **align better priority actions** to tackle key barriers to and enablers for cross-border trade



Taking stock of key insights from the relevant analyses on the topic carried out by international organizations and initiatives



Roles and responsibilities

Co-Chairs



Members



Hydrogen
Council

- Lead Ministerial sessions
 - Lead the annual work plan
 - Guide UNIDO and Hydrogen Council in preparations
 - Review and guide priority action
 - Commit a small financial contribution to UNIDO as the coordinator during the chair year
- Participate in 2-3 preparatory meetings ahead of the annual ministerial and 1 annual in-person Ministerial meeting and Ministerial-CEO roundtable session
 - Exchange best practices and domestic priority actions
 - Contribute expertise on priority actions
- Lead coordination and country outreach to the Global South
 - Prepare annual ministerial meeting materials and annual Ministerial-CEO roundtable with support from HC
 - Share learning from UNIDO's technical assistance through its Global Programme for Hydrogen in Industry
- Lead CEO engagement and coordinate CEO participation
 - Offer insights on hydrogen trade flows modelling and project development/ implementation on the ground



1st IHTF Ministerial-CEO Roundtable | 05 Dec 2023



Ministerial officials of 20+ countries representing key importers and exporters

15 CEOs of leading hydrogen companies representing >50 USD billion

International organisations – IEA, IPHE, UNIDO, ISO

Global investors

23-1-2024



COP28 Hydrogen Outcomes launched on 05 Dec 2023

Lead Outcomes



- 1 Declaration of Intent on mutual recognition of certification schemes for hydrogen and its derivatives
- 2 ISO Methodology for GHG emissions assessment for Hydrogen on an LCA basis
- 3 Public-Private Action Statement on unlocking trade corridors

Assess

Evidence

Deploy

Platform Outcomes



- A SDG Compass for the Hydrogen Economy
- B Diversity, Equality and Inclusion Platform for Hydrogen

Steward

Empower



Public-Private Action Statement signed by IHTF & H2 Council

| Focus area | Actions on the public side | Actions on the private side |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Permitting | Identify relevant solutions for accelerating permit-granting processes | Identify good practices and ensure high quality of permitting requests |
| Deployment at scale | Develop robust demand-pull measures in key end use sectors and the enabling infrastructure | Ensure hydrogen and its derivatives ecosystem and supply chain readiness for deployment at scale to meet the growing demand |
| International standards | Collaborate on the development of international technical standards through Standard Development Organisations to facilitate global, cross-border trade of hydrogen and derivatives | Identify and actively facilitate the development of key technical standards for cross-border trade infrastructure for key carriers (including LH2, ammonia, e-fuels) |
| Mutual recognition of certification schemes | Agree to monitor progress with mutual recognition of certification schemes | Commit resources to and support at technical level mutual recognition of certification schemes |
| SDG benefits | Maximize socio-economic benefits and local value creation supporting economic and industrial development in particular in exporting countries | Strengthen and maintain engagement with local communities and actively integrate SDGs into business models |



IHTF plannen voor 2024

IHTF-HC Ministerial-CEO roundtable @ World Hydrogen Summit 2024 (UAE-NL co-chairs)

- Corridor studie met Hydrogen council
- Analyse van PPAS acties per corridor

Mogelijke activiteiten volgende co-chairs IHTF

- **IHTF Ministerial-CEO Roundtable @ G20/CEM 2024**
 - Voortgang PPAS implementatie
 - Focus op corridors uit Bra/Latijns-Amerika
- **Certificering workshop: mutual recognition solutions**
- **Unlocking SDGs with Hydrogen in the Global South**
 - Nieuwe industrieën, lokale ontwikkeling
 - Best practices met focus op SDGs



3 Partnerschappen met non-EU landen

14 Bilaterale MoUs



Activiteiten

- Waterstofhandels- en innovatiemissies
- Workshop / Kenniswisselingsessies
- Werkbezoeken BZ/EZK bewindspersonen/hoogambtelijk
- Werkbezoeken koning (Spanje en Duitsland in 2023)



- Studies lopend met Australië, Chili en Uruguay
- Investerings in het buitenland via Invest International (Zuid-Afrika, Marokko en Namibië)
- Partners in Business: Golf regio, Australië, Japan, China

23-1-2024

Financiering van internationale waterstofprojecten

- Itske Lulof | InvestInternational



SHIP>NL

Sessie I 17 januari

Invest International

SHIP>NL

Sessie I 17 januari

Moving the molecule. Filling the GH2 financing gap

**What is needed to create import corridors
from projects in emerging countries to
offtakers in NW-Europe?**

17 January 2024

**Invest
International**



Make an impact with GH2

- Green hydrogen (GH2) is needed for **decarbonization of industry** and plays a **systemic role in energy transition**
- **GH2 import is needed** to meet EU and Dutch climate goals.
- **Developing and emerging countries** (especially Africa) have excellent resources to produce GH2.
- GH2 production in these markets creates new **green growth opportunities**.
- GH2 import creates **business opportunities for Dutch business** and **strengthens NL position as energy hub of NW-Europe**.
- Strong position to make **high impact on SDG 7, 8, 13**.
- **Invest International is well positioned** to help catching opportunities and facing challenges.

E-diplomacy, diversification

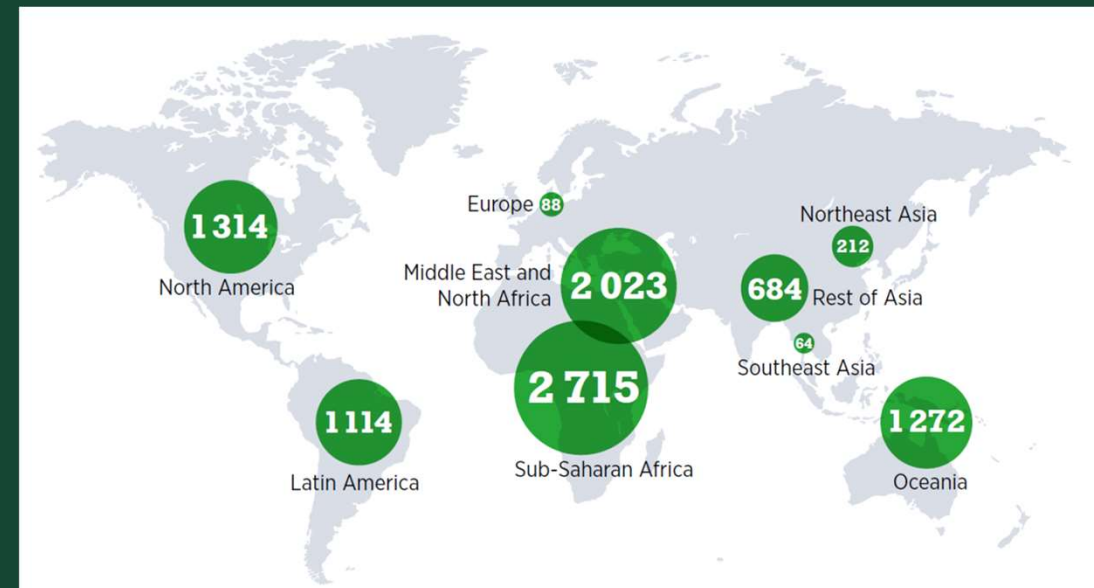
- **Letter from the Minister of Energy & Climate Jetten:**
Involve state-owned enterprises Port of Rotterdam, Gasunie and Invest International to contribute to **kick-starting import corridors**.

Om de gunstige Nederlandse uitgangspositie te verzilveren moeten we deze positie internationaal uitdragen. Mede omdat we in deze fase regelmatig aan tafel zitten met overheden en staatsbedrijven in de landen waar we een samenwerkingsrelatie mee opbouwen, is het gepast om aan Nederlandse zijde de staatsdeelnemingen hierbij te betrekken, in ieder geval Havenbedrijf Rotterdam, Gasunie en Invest International. Deze deelnemingen spelen ieder vanuit de door hen te borgen publieke belangen een rol in het op gang brengen van importketens. De andere Nederlandse havens zijn eveneens actief in het buitenland en worden uiteraard ook betrokken bij de inzet op energiediplomatie.

Citaat uit de brief aan de Tweede Kamer d.d. 2 juni 2023

Emerging markets with excellent conditions

- **Mismatch** between the best locations for GH₂ production and demand centers.
- Several **emerging markets offer excellent conditions for renewable energy and GH₂ production**, creating opportunities for:
 - Local (green) electrification, industrialization and private sector development
 - Local skills development and employment growth
 - Export of GH₂ and derivatives, amongst others to EU/the Netherlands

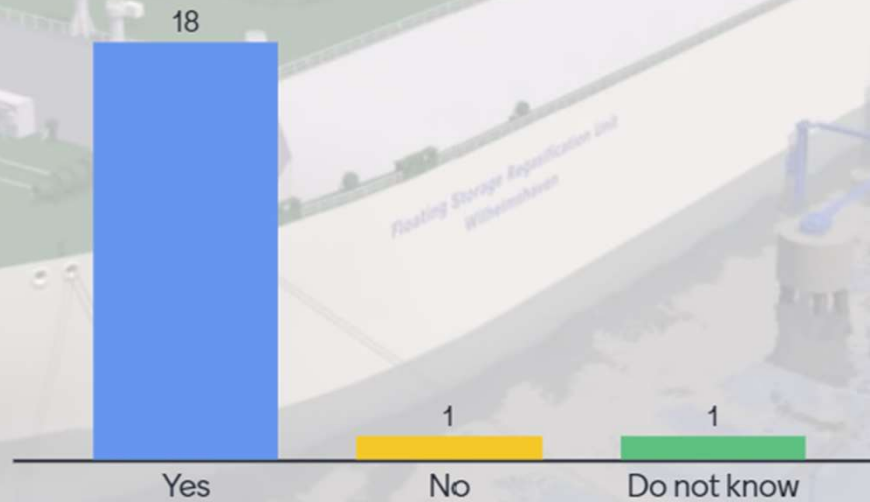


Technical potential for producing green hydrogen under USD 1.5/kg by 2050, in EJ (Source: IRENA)

Join at menti.com | use code 6464 8155

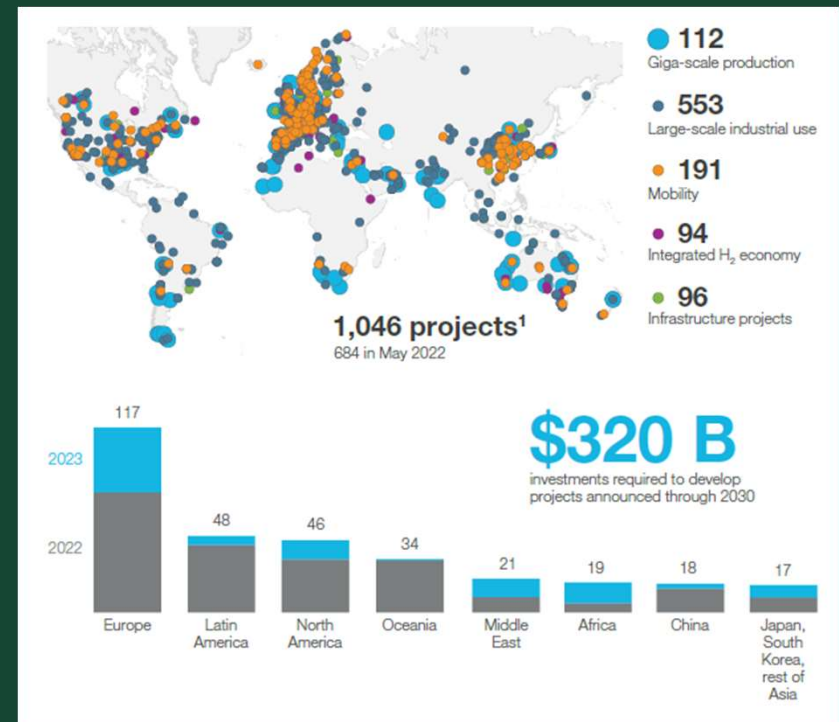
NEXT TO SEEKING IMPORTS FROM EUROPEAN COUNTRIES (SPAIN, NORWAY)

The NL Government should also seek imports from selected developing and emerging countries with excellent conditions to produce



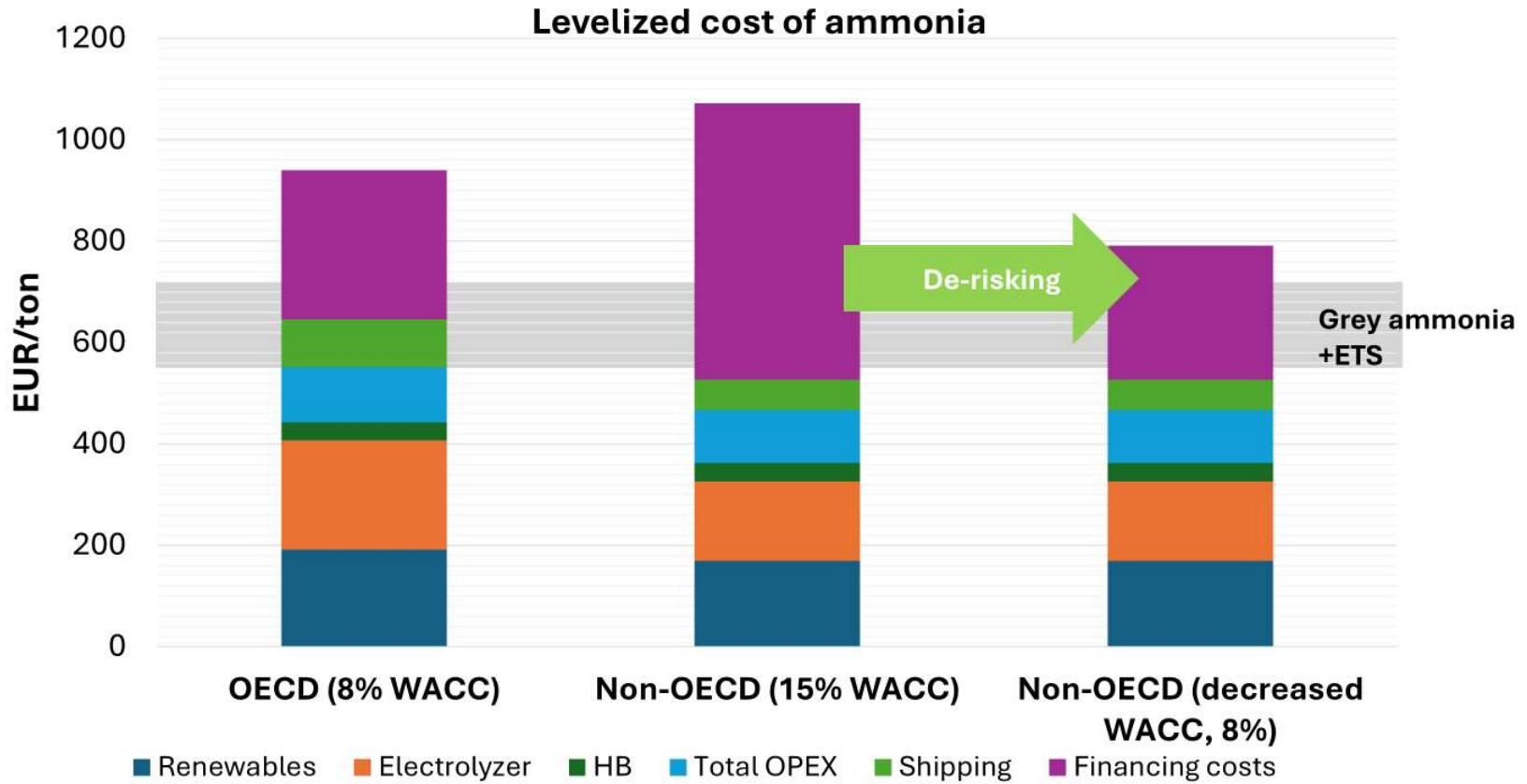
Biggest Challenge: Financing to bring GH2 projects to market

- **795 large-scale projects worth USD 320bln by 2030** have been announced. Of these:
 - 50% have **not entered planning stage** nor have **taken FID**.
 - Most production projects so far are located in **developed countries**.
- For developers to take FID, **securing offtake and potentially government support & funding is key**.
- For developers in developing and emerging countries, **decreasing the costs of financing (WACC) is key** to seize the benefit of low production costs.

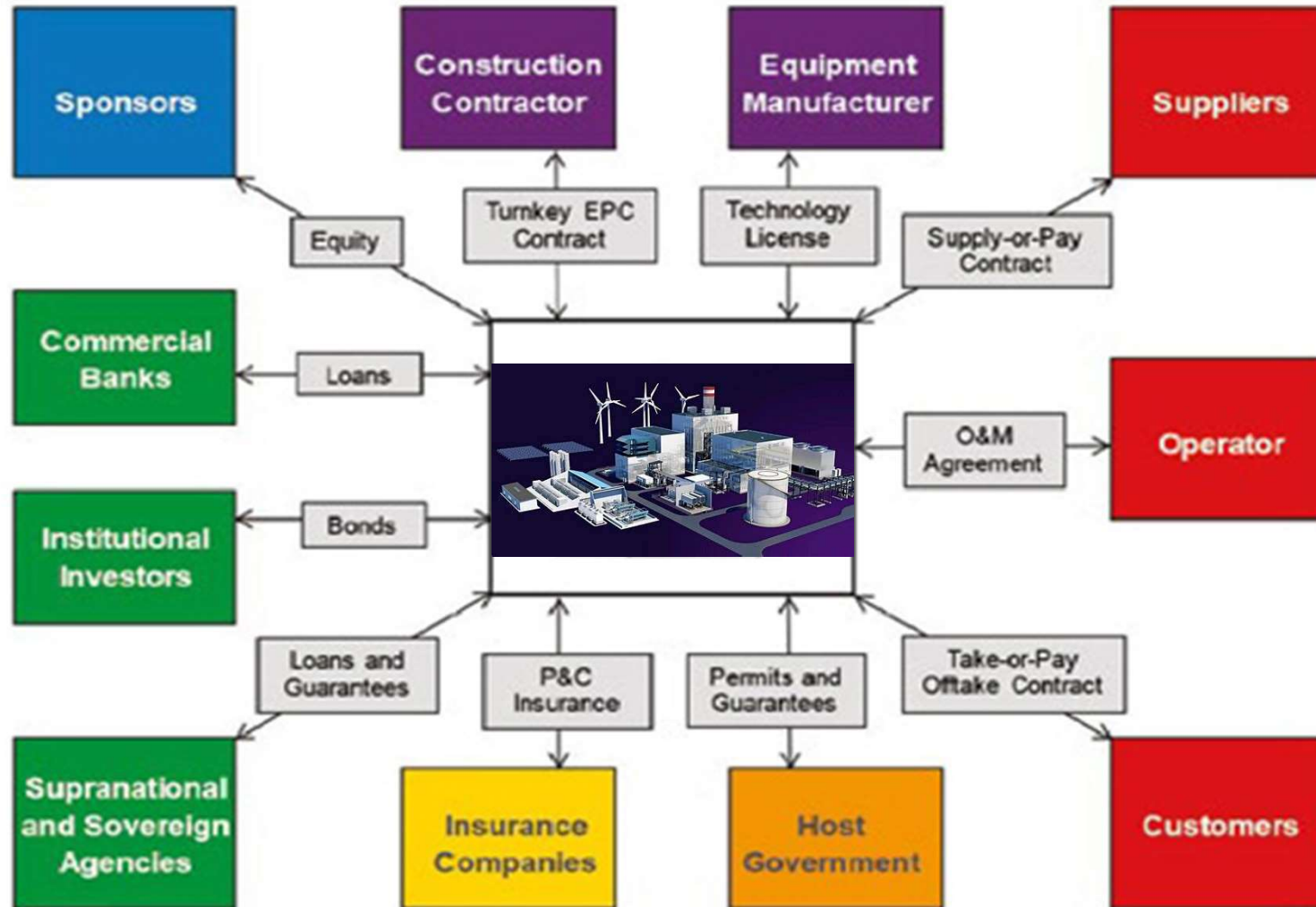


GH2 projects announced until 2030
(Source: Hydrogen Insights - Hydrogen Council, McKinsey & Co., May 2023)

High WACC nullifies competitiveness of production costs in non-OECD countries

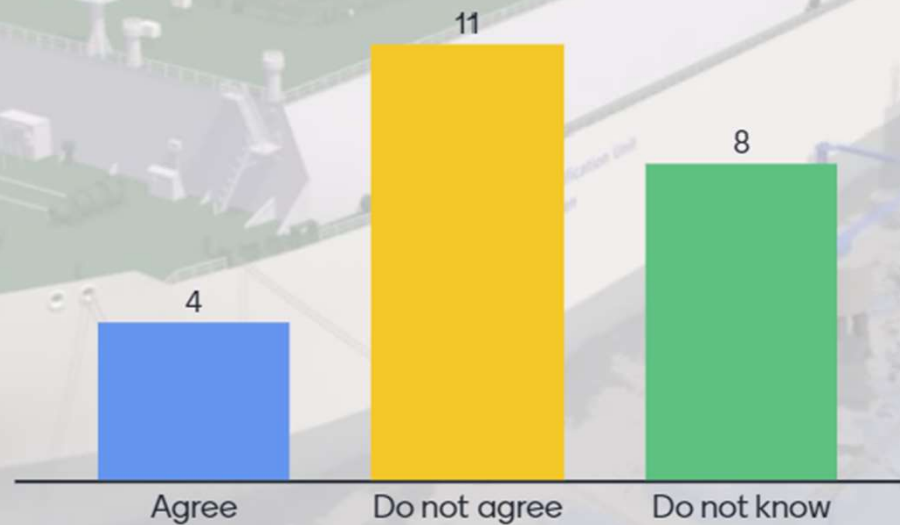


Decreasing the WACC makes LCOA of non-OECD competitive and decreases the difference between green and grey +CO₂ price



Join at menti.com | use code 6464 8155

GH2 [stand-alone/non-recourse] projects in developing and emerging countries are too high risk and will never reach financial close



Tackling the GH2 financing challenge

Global Energy Transition Fund

Together with Climate Fund Managers (CFM), we launched Climate Investor Three (CI3) investing equity in GH2 projects in corridors between emerging markets and North-Western Europe, in **development and construction phase.**



Matchmaking between GH2 producers and offtakers / end-users

Together with Dutch partners Port of Rotterdam and Gasunie we are **building bridges between future GH2 users in North-Western Europe and developers of GH2 projects in emerging markets**, to bring these projects faster to market and accelerate decarbonization of industries.

We stimulate the use of existing and, if needed, new (governmental) instruments to kick-start corridors.

Other financing instruments

We provide funding for **feasibility studies and export contracts** of Dutch companies active in the GH2 value chain worldwide.

Feasibility

pre-FEED

FEED

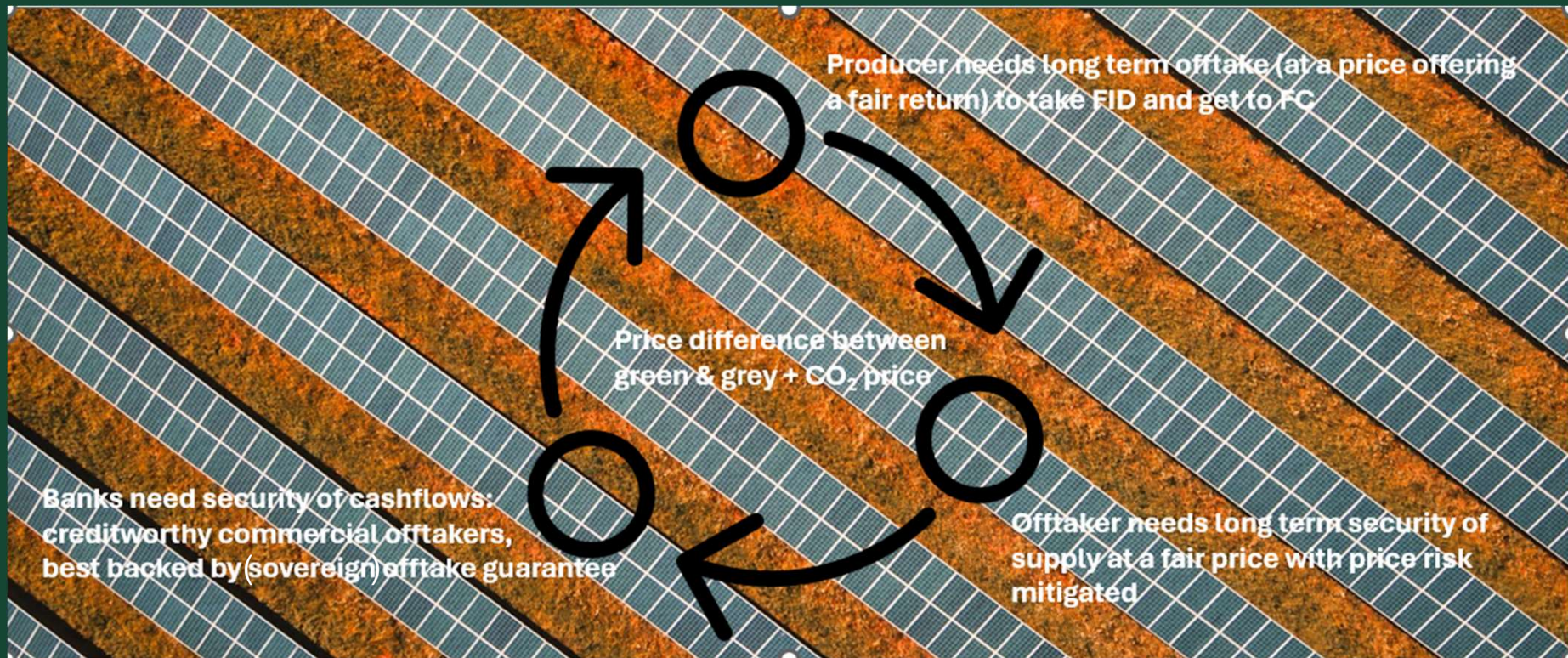
FID

Construction

COD

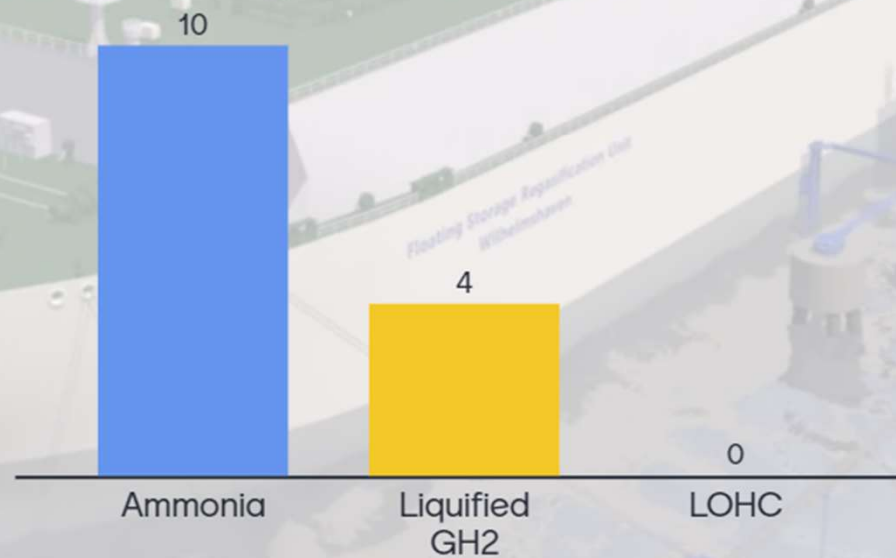
Kick-starting import corridors

Matching supply and demand



Join at menti.com | use code 6464 8155

For finding sufficient offtakers/end-users in the Netherlands in/as of 2030, GH2 should enter Dutch port(s) in the form of:



Invest International

- Launch of CI3 Global Fund focusing on GH2 projects globally (Nov-23)
- Active engagement with ministries, PoR, GU and other stakeholders to develop Dutch proposition



- Working capital loan to Proton Ventures for 2 GH2 EPC contracts
- Active engagement with PoR on support for La Cigogne Project

Funding of Proton Ventures for feasibility study of Iracema Project in Pecém, Ceará State

- Launch of SDG Namibia One as CI3 Regional Fund + commitment of EUR 40mln from BHOS budget
- Commitment of EUR 3mln from BHOS budget for GH2 Implementation Authority Office
- Funding of PoR for masterplan Lüderitz Port
- Active pipeline development

- Launch of SA-H2 Fund as CI3 Regional Fund
- Active pipeline development

Funding of PoR for feasibility study of Oakajee Port

Role of Invest International as enabler of GH2 economy:

1. Finance international project development/investments/contracts of Dutch businesses.
2. Support developing countries in infrastructure development.
3. Catalyse projects in GH2 value chain with CI3 blended finance solution.
4. Partner with ministries, PoR and GU to develop Dutch proposition to enhance chances for success of projects with GH2 export potential to NW Europe.

Together, we can build the sustainable markets of tomorrow.



Bart de Smet
Lead Green Hydrogen
Developments
Invest International



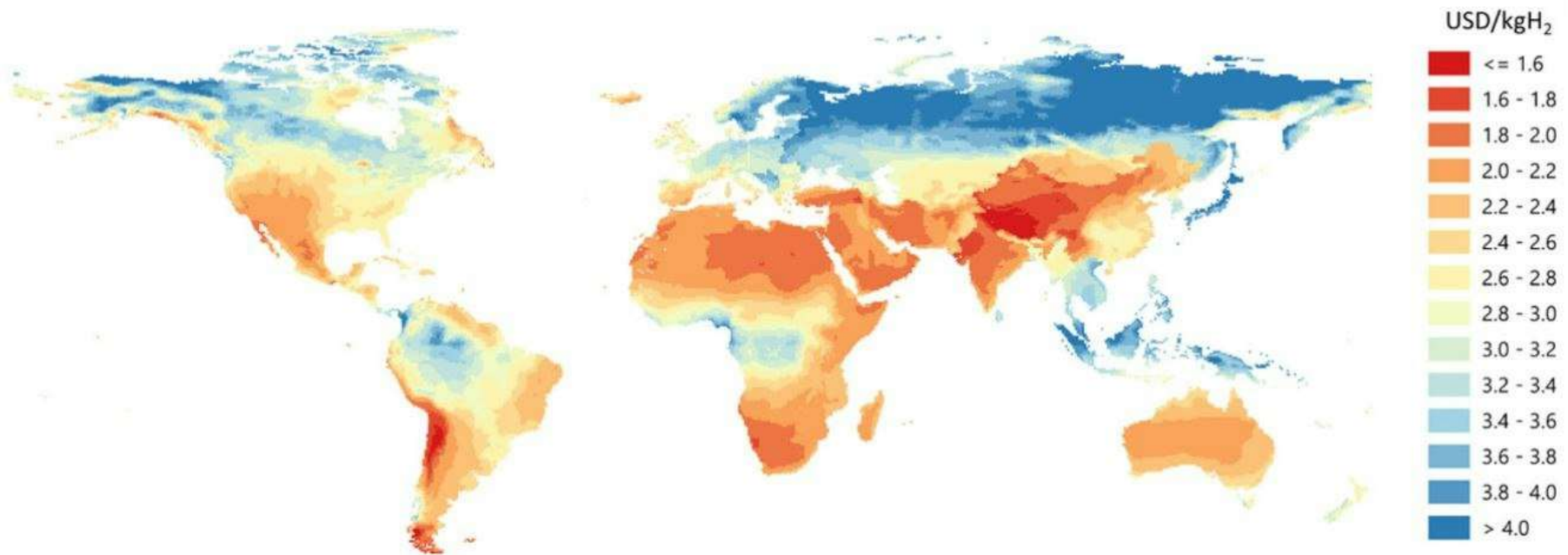
Itske Lulof
Sector Head Energy
and Climate
Invest International



Sorin Bunea
Investment Analyst
Green Hydrogen / Energy and Climate
Invest International

**Invest
International**

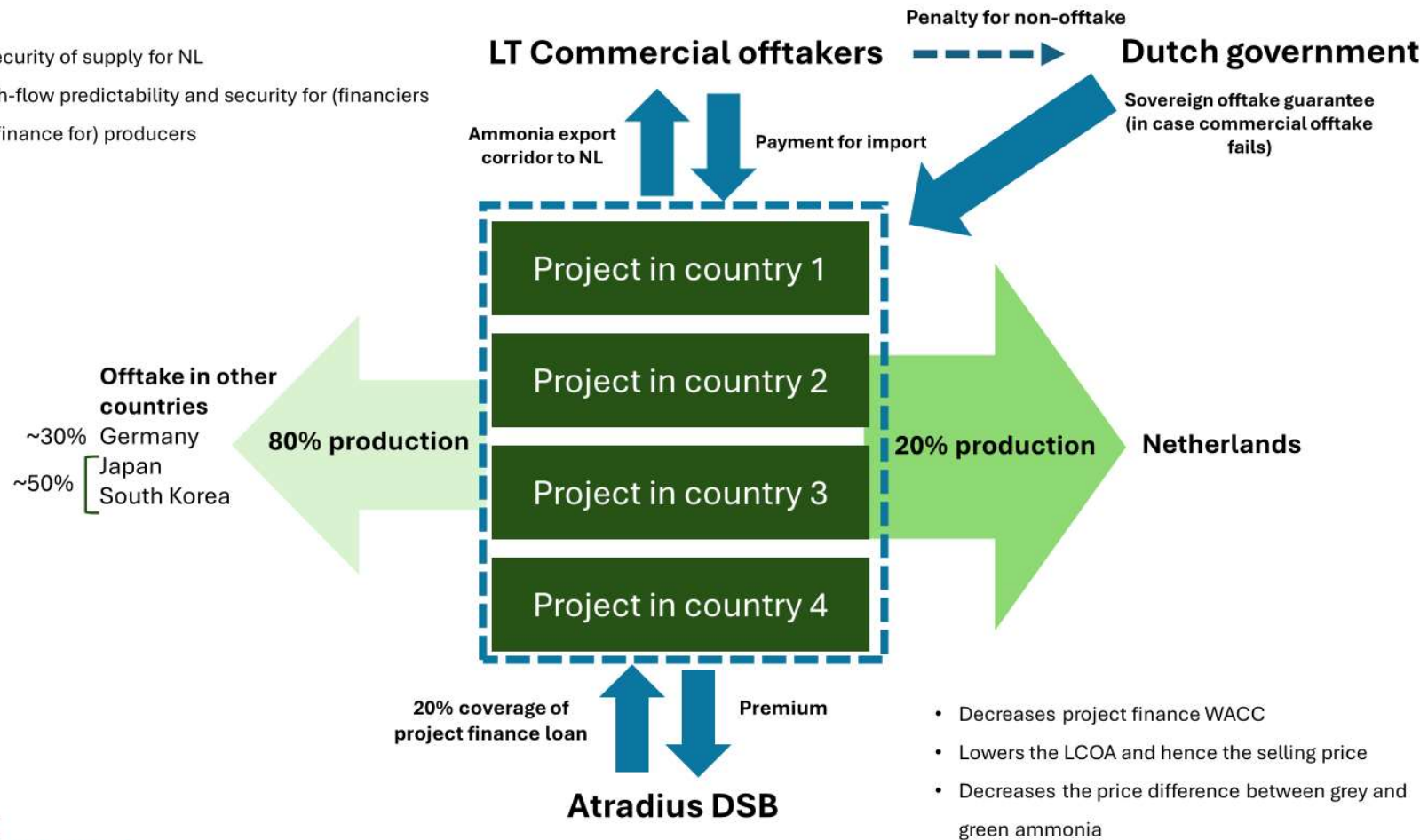
Hydrogen costs from hybrid solar PV and onshore wind systems in the long term



(Source: IEA, 2019)

Schematic overview

- Ensures security of supply for NL
- Offers cash-flow predictability and security for (financiers of project finance for) producers



- Decreases project finance WACC
- Lowers the LCOA and hence the selling price
- Decreases the price difference between grey and green ammonia

Volgende online kennissessie woensdag 21 februari

Agenda 2024

| Datum | |
|------------------|--------|
| Woe 21 februari | Online |
| Woe 20 maart | F2F |
| Woe 17 April | Online |
| Woe 15 mei | F2F |
| Woe 19 juni | Online |
| Woe 10 juli | F2F |
| Woe 18 september | F2F |
| Woe 16 oktober | Online |
| Woe 20 November | F2F |
| Woe 18 december | Online |

Hartelijk dank voor uw aandacht

Vragen? Neem gerust contact met mij op:

Monique Rijkers
Monique.Rijkers@tno.nl
+31 6 23 34 65 16

De slides van alle sessies zijn te vinden op:
[SHIPNL: Sustainable Hydrogen Import Program Netherlands |
Nationaal Waterstof Programma](#)



Bijlage: Introductie InvestInternational

SHIP>NL

Sessie I 17 januari

We invest in Dutch solutions for global challenges



What we do

Financing



We offer Dutch-linked companies and partner country governments tailor-made financing arrangements and combined finance solutions (and resolve market failure).

Project development



We provide funds designed for infrastructure projects and offer project development expertise, to partner governments and businesses.

Connecting



We pull the levers between public and private finance to create unique collaborations.



Our goal for impact is threefold

Support sustainable transitions (SDG 13)

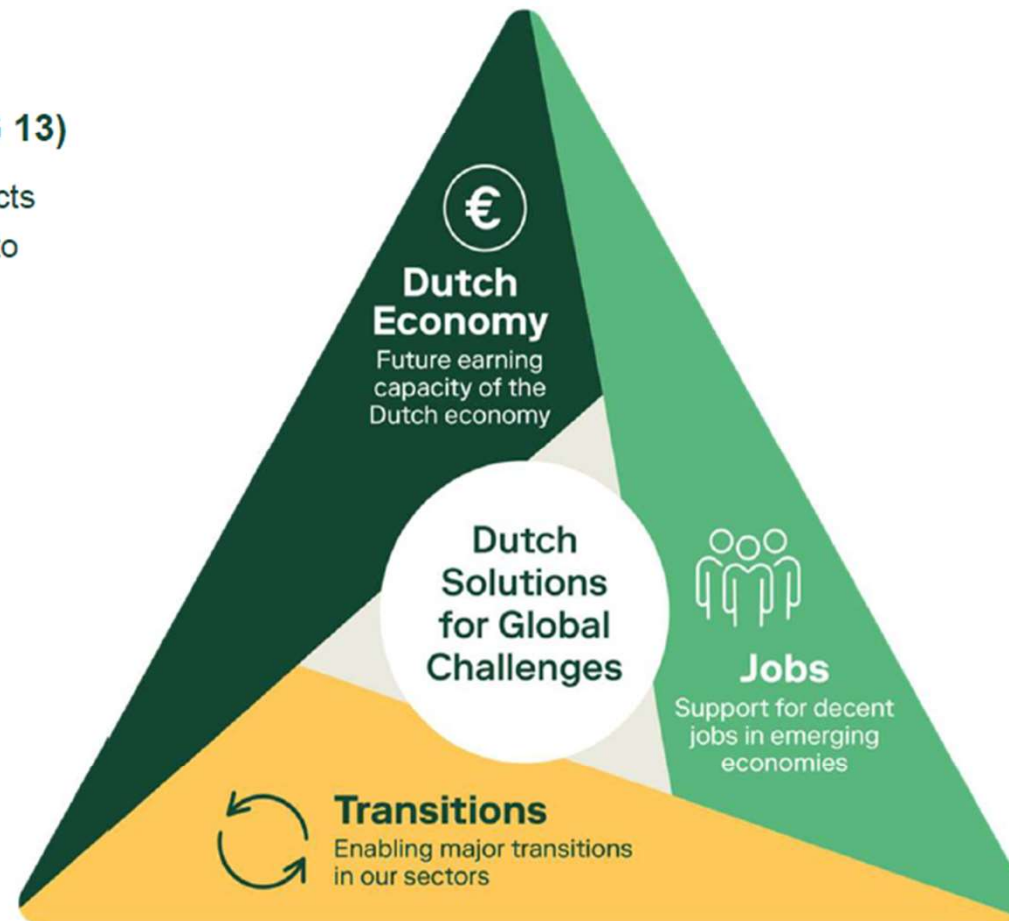
Support solid, impactful businesses and projects that help industries and economies transition to more sustainable processes.

Job creation (SDG 8)

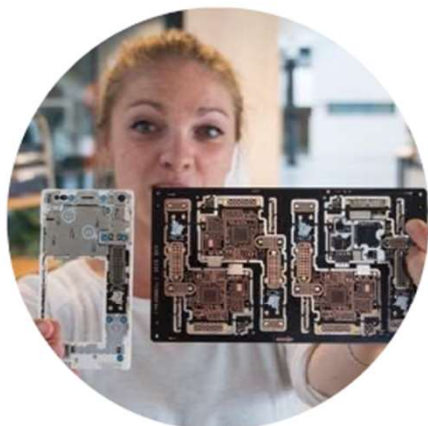
Create jobs, both at home and abroad.

Earning capacity Dutch economy

Securing the future earning capacity of the Dutch economy.



We work with



**Start-up
and SMEs**



**Mid and Large
Corporates**



**Partner
Governments**



Investors

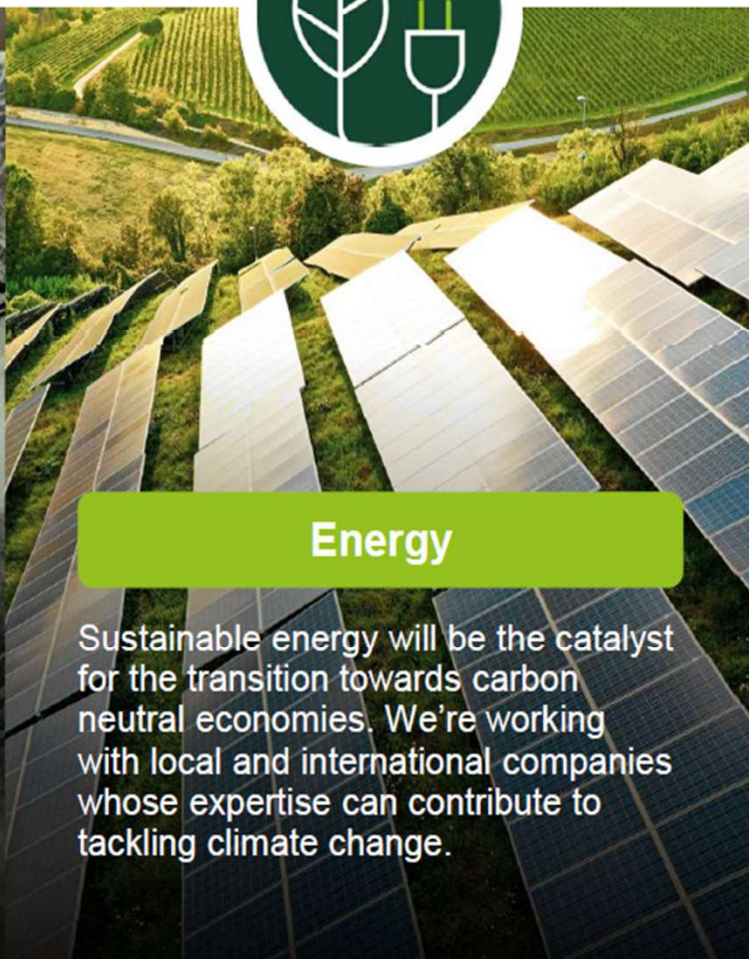
We look for synergies between public infrastructure needs and private businesses to create even greater impact

Focus on five sectors



Agri-food

We support the development of more climate resilient and nature-inclusive agricultural systems that meet the needs of today and those of future generations.



Energy

Sustainable energy will be the catalyst for the transition towards carbon neutral economies. We're working with local and international companies whose expertise can contribute to tackling climate change.



Healthcare

We want to lead the drive towards accessible, affordable and quality healthcare for everyone. Dutch specialist healthcare companies can make a difference in everything from primary healthcare to prevention and access to medicines.

Focus on five sectors



Manufacturing

Innovative expertise can help develop circular economies to replace linear manufacturing that heavily impacts climate and the availability of resources.



Water & Infrastructure

As leaders in the field, the Netherlands can help contribute to development goals in other countries by delivering innovation through nature-based solutions and green infrastructure.

Our expertise



**Tailor-made
financing**



**Country, market
and institution
expertise**



**Expertise in
5 selected sectors**



**Sustainability
& ESG**