Ammonia Project Features

(Thursday 1 December, 5 PM EET, online via Zoom Webinar)

Ammonia opportunities in Egypt

Alzbeta Klein
CEO & Director General, International Fertilizer Association

Tarek Hosny
Head of Investments and Projects, Fertiglobe

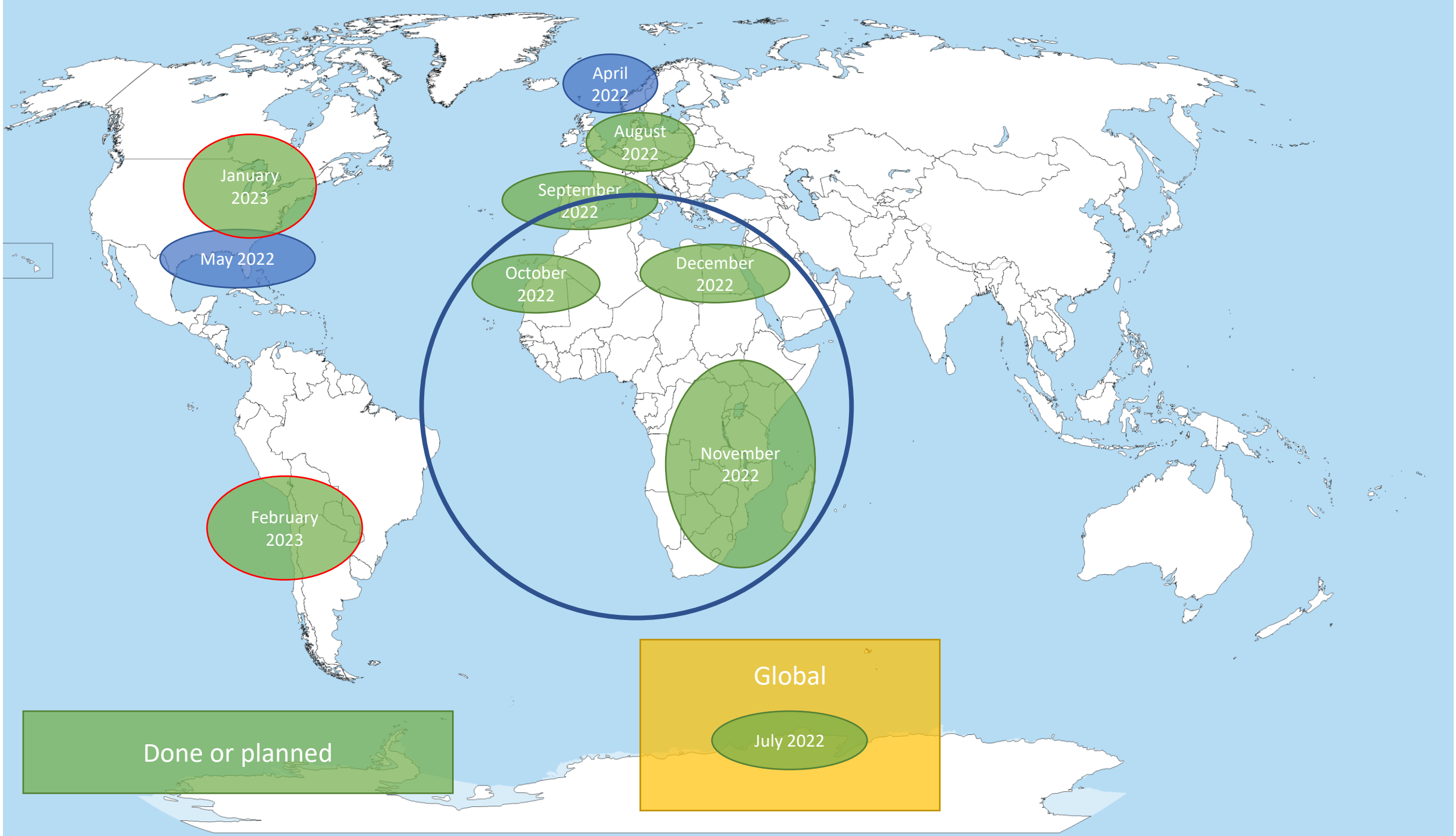
In conversation with:

Kevin Rouwenhorst (Technology Manager, AEA)

ifa INTERNATIONAL FERTILIZER ASSOCIATION

Fertiglobe

AMMONIA ENERGY ASSOCIATION


April 2022
August 2022
September 2022
January 2023
May 2022
October 2022
December 2022
November 2022
February 2023
Global
July 2022
Done or planned

COP27

SHARM EL-SHEIKH

EGYPT 2022

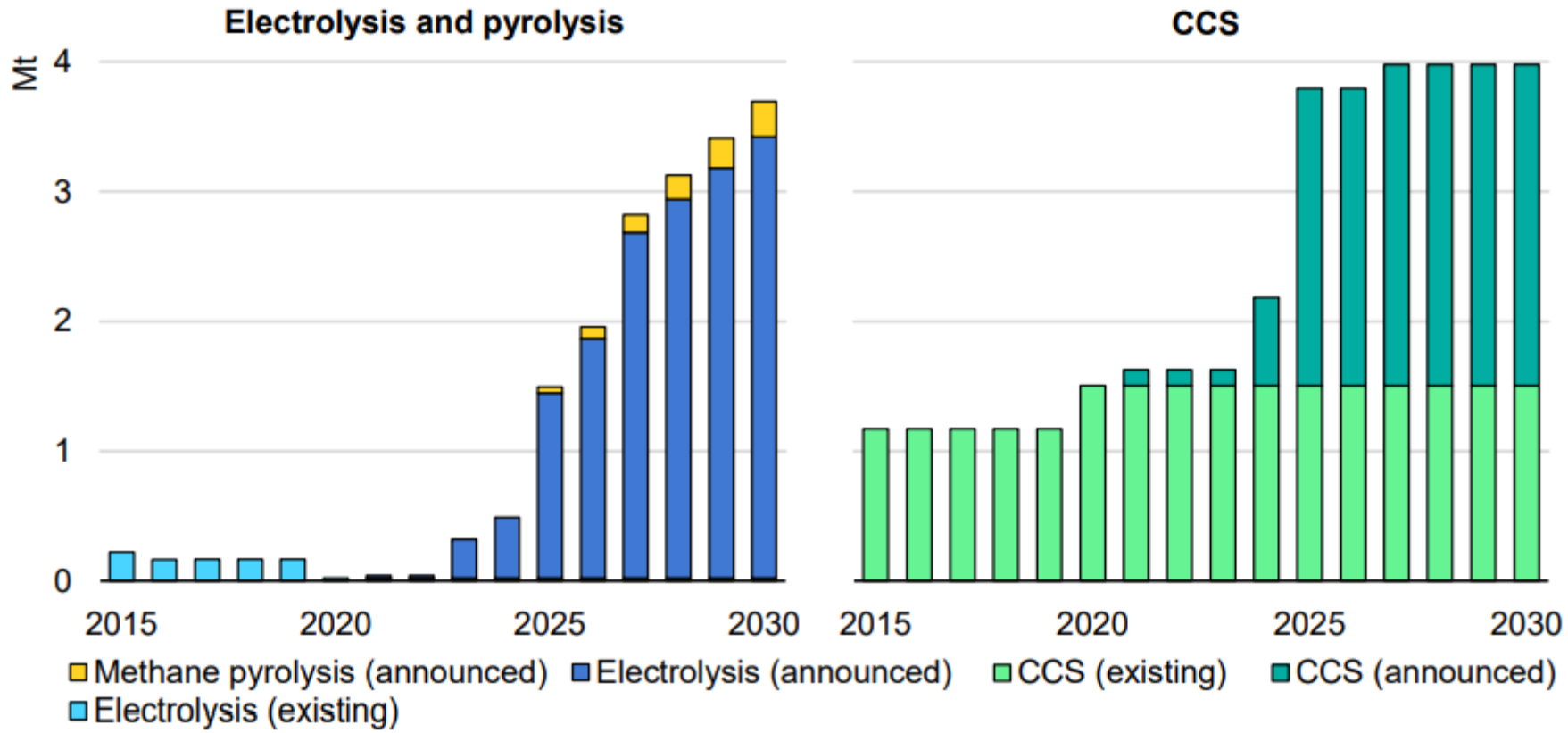
SC°ZONE'

الْمِنْطَقَةُ الاقْتِصَادِيَّةُ

لِقَنَاةِ السُّوَيْسِ

SUEZ CANAL ECONOMIC ZONE

Figure 1.5 Current and announced projects for near-zero-emission ammonia production



IEA, 2021.

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Ammonia Opportunities in Egypt

Alzbeta Klein

AEA Webinar – December 2022

Why Roadmaps?

BACKGROUND

- About 1.5% of the world's CO_2 emissions come from NH_3 production
- About 2% of the world's energy is needed for the synthesis of NH_3

OBJECTIVES

- Roadmap provides different pathways to reduce CO_2 emissions from NH_3-production for different regions and for different timelines.
- Roadmap outlines the roles and actions of stakeholders, quantify the investment and policies needed, and establish milestones for innovation and deployment

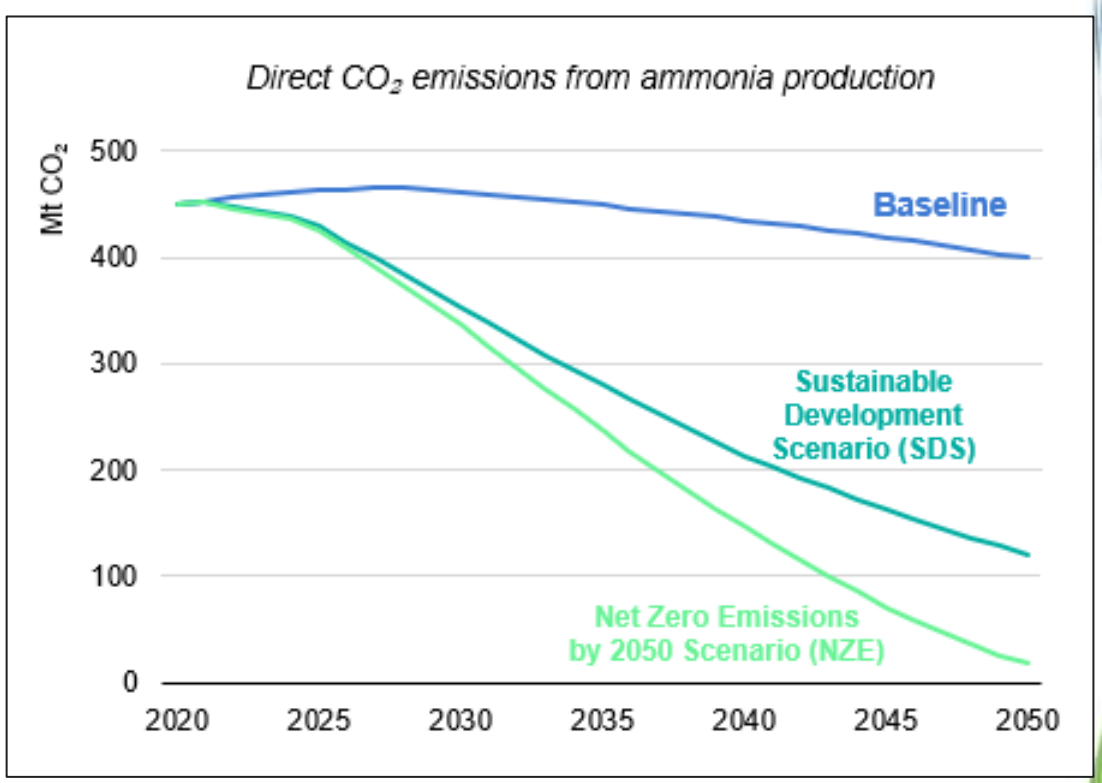
GLOBAL AMMONIA TECHNOLOGY ROADMAP PRESENTED AT COP26 IN GLASGOW, 2021

Global Ammonia Technology Roadmap

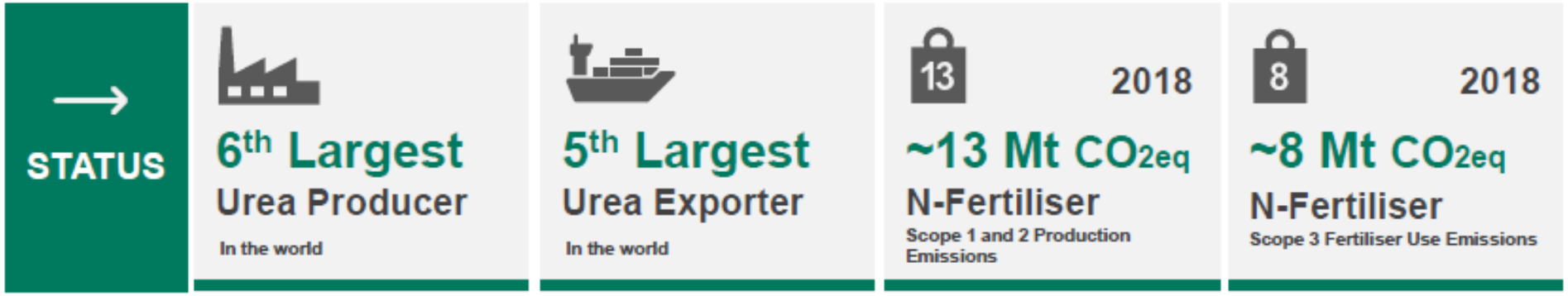
KEY OUTCOMES

- There is no one path that will fit everybody -> each country will have a different decarbonization journey
- The fertilizer industry can't do it on its own: stakeholder collaboration (industry, technology providers, governments, supply chains) and enabling conditions (policy, infrastructure, R&D, investments)

➢ An annual investment of $14 billion in new ammonia production facilities is required between now and 2050



Decarbonizing Local Ammonia Production: EGYPT

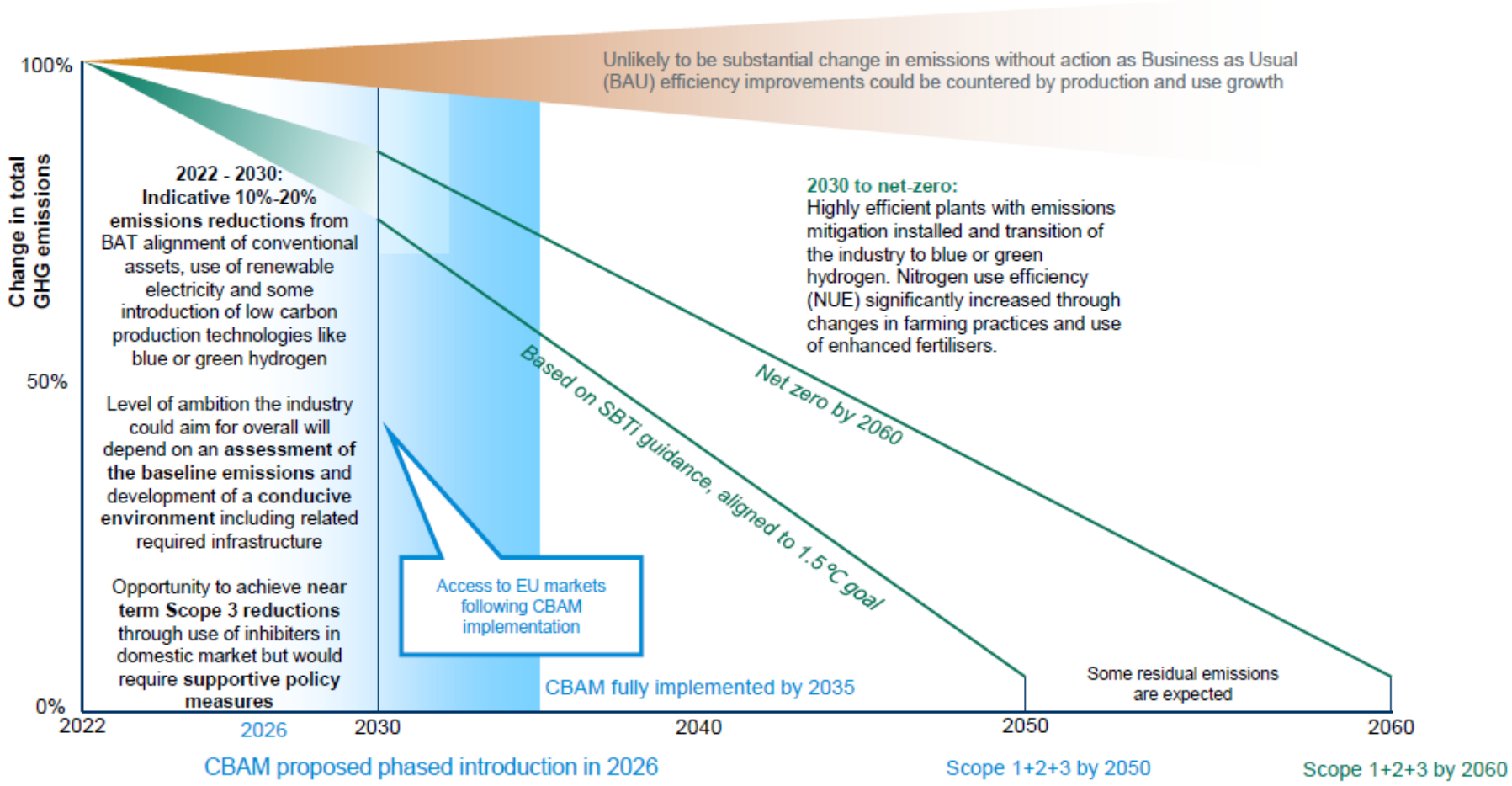


WHAT IS NEEDED

- Tailored local decarbonization roadmaps need to be drafted to assess each country's specific risks and opportunities to decarbonize their fertilizer industry.
- Strong collaboration of all stakeholders is the only way to put ammonia production on a pathway to achieving deep CO_2 emission reductions on time.

Vision for a Low Carbon and Climate Resilient Pathway for Egypt's Nitrogenous Fertilizer Industry - ERM

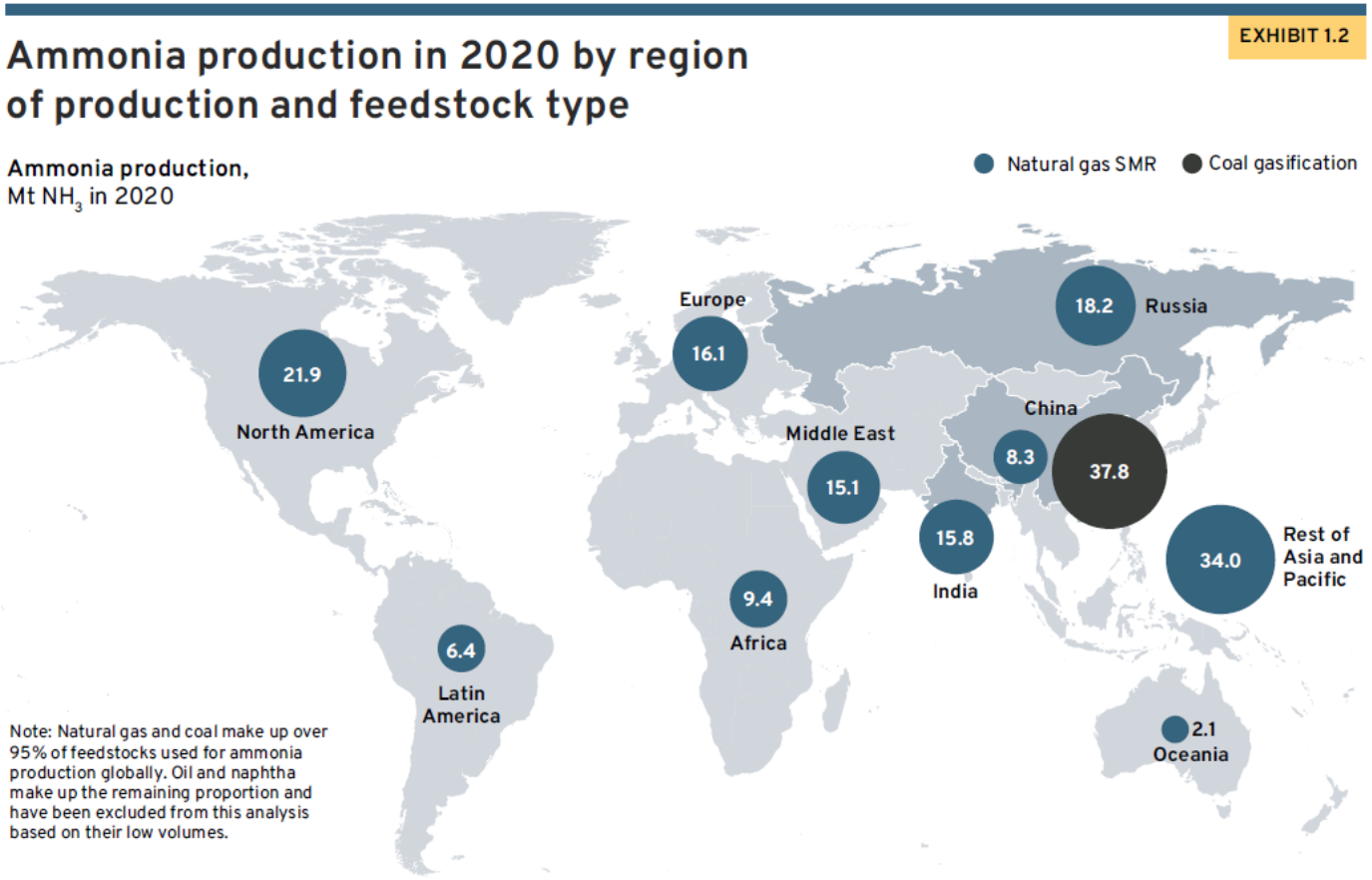
The Egyptian fertiliser supply chain could achieve significant emissions savings by 2030 and aim for Net Zero in the longer term



Next Steps

MORE INVESTMENT OPPORTUNITIES INTO CLIMATE ACTION

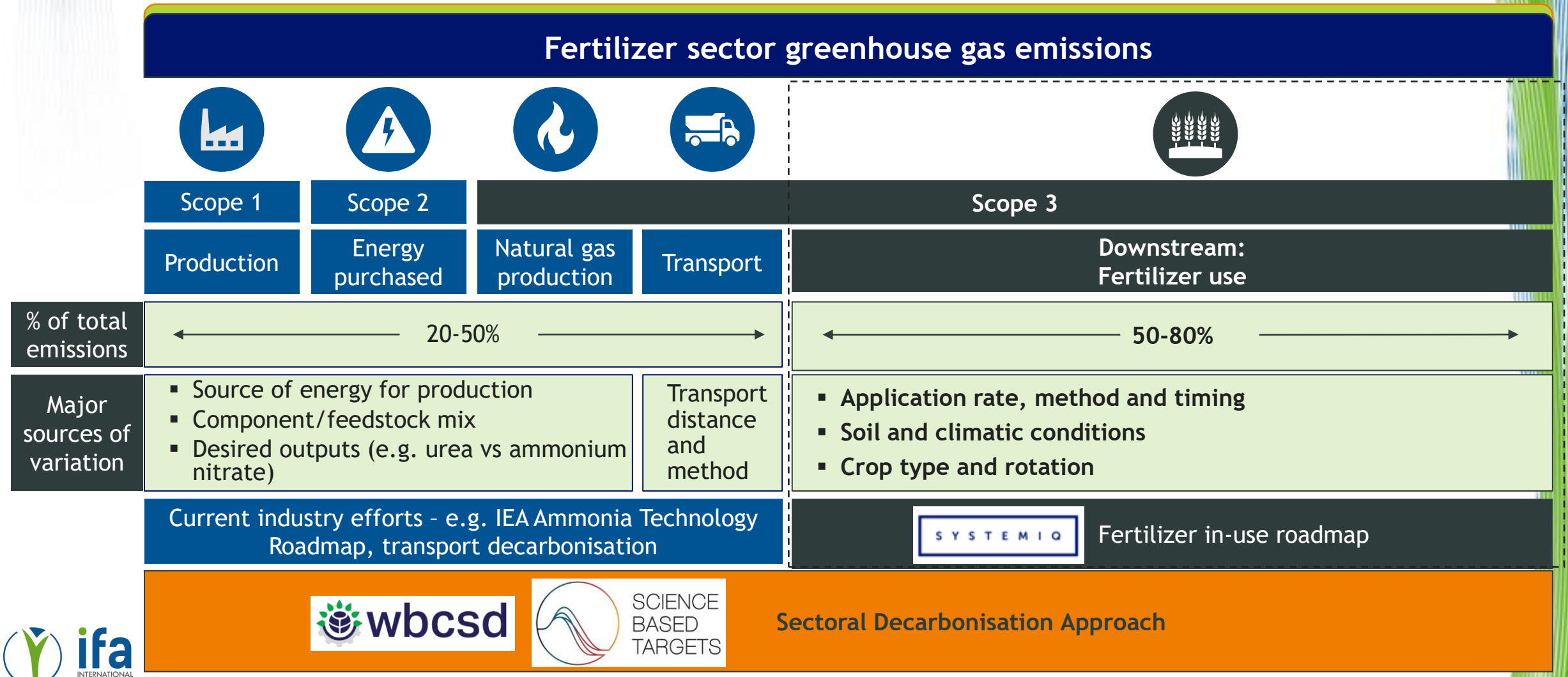
- More developing countries will need their own tailored decarbonization roadmaps to transition to a low-carbon fertilizer production, as soon as possible.



Source: International Fertilizer Association; Industrial Efficiency Technology Database; US Geological Survey[5]

Beyond Production

IFA, WBCSD AND SYSTEMIQ PARTNERSHIP + SCOPES



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Thank You!

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INTERNATIONAL FERTILIZER ASSOCIATION

Fertiglobe

An ADNOC and OCI Company

Fertiglobe

November 2022

Fertiglobe at a Glance

Leading Nitrogen Fertilizer Exporter Globally and Unique Ammonia Platform(2)

OCI 50.0%

ADX 13.8%

ADNOC 36.2%

Fertiglobe
An ADNOC and OCI Company

Headquartered in Abu Dhabi

4 World-class Strategically Located Production Facilities

Global In-House Distribution Capabilities, including ~1,000kt Storage Capacity

Logistics allowing for Excellent **Freight Advantaged, Duty-free Delivery** to East and West

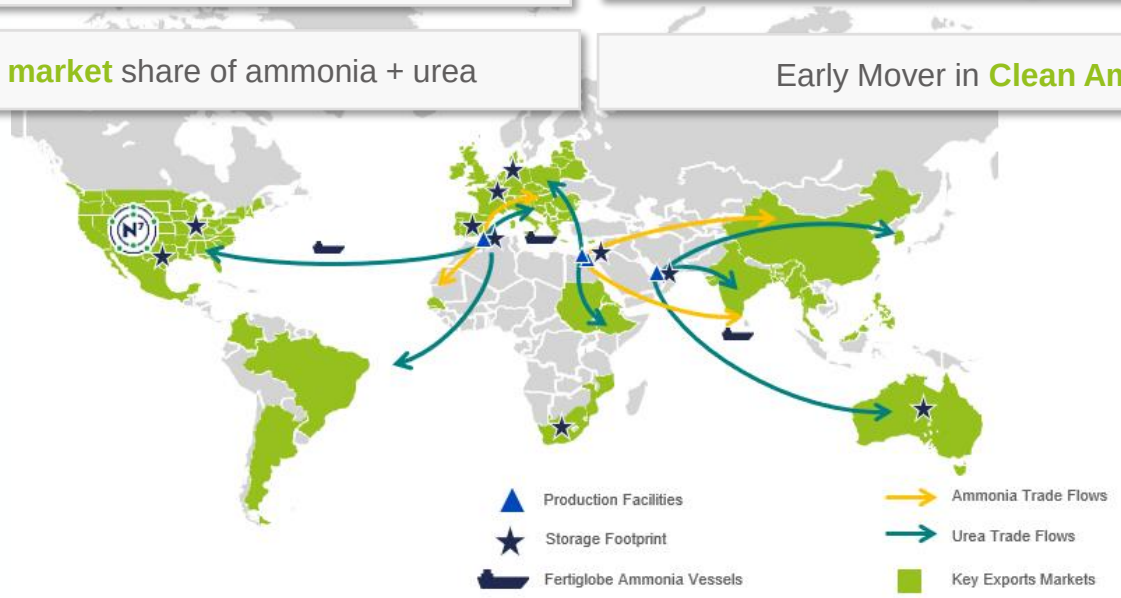
~10% global market share of ammonia + urea

6.7mt Sellable Volume Capacity (1)

- **5.1mt Urea** Production Capacity
- **4.4mt Gross Ammonia** Production Capacity
- **0.5mt DEF** Production Capacity (3)

50% of Assets Younger than 10 years

Early Mover in **Clean Ammonia**

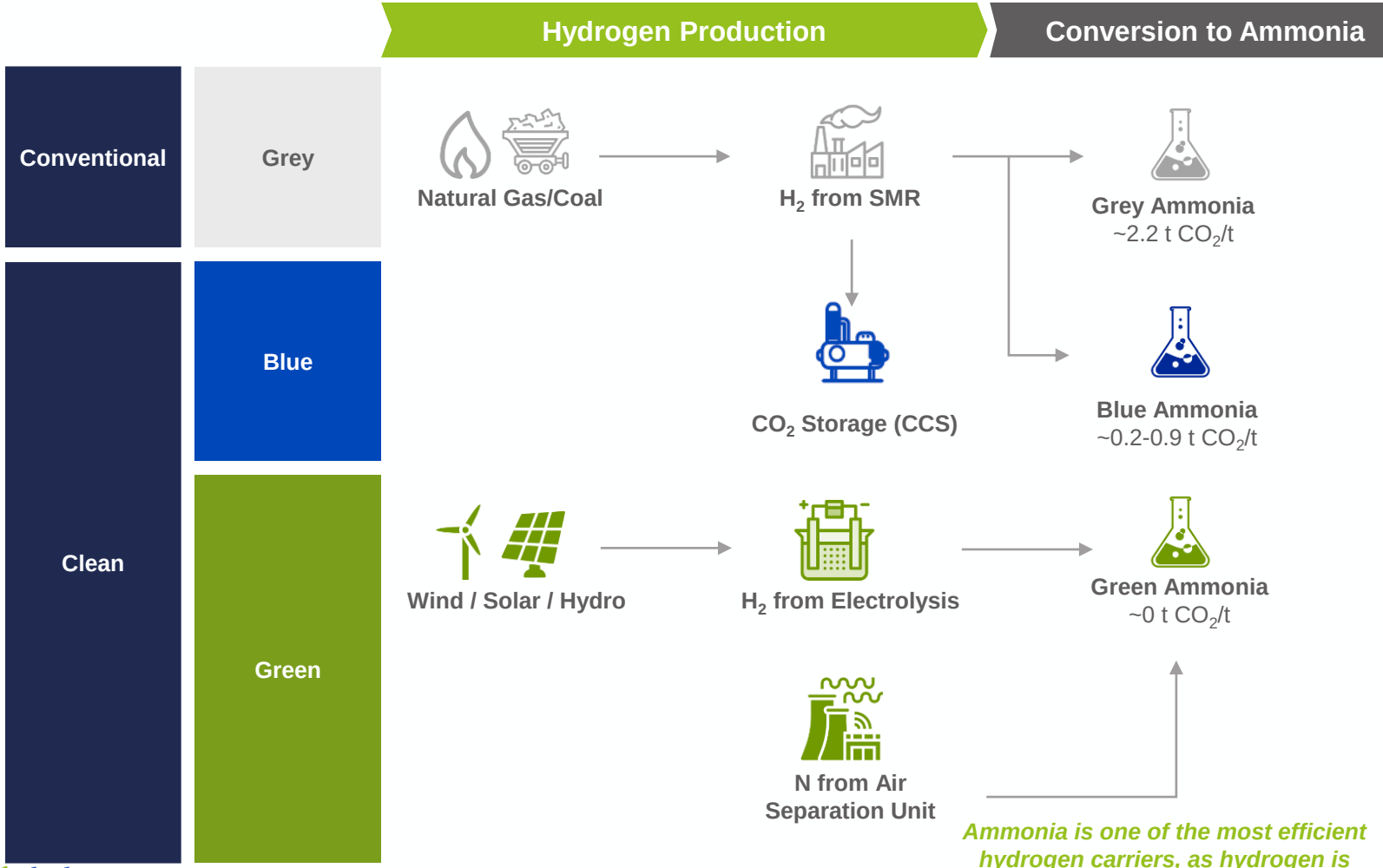


Source: Company Information, CRU
Notes: (1) Capacity data as of year end 2021
(2) Based on 2021 ammonia and urea combined export production capacity in mtpa
(3) Maximum downstream capacities cannot be achieved at the same time. DEF production capacity not included in the 6.7mt sellable volume capacity

(4) Realized weighted average gas price in LTM (June 2022) based on respective gas price arrangements in Abu Dhabi, Algeria and Egypt. Gas price arrangements include cost escalation factors and in Egypt increments above certain product price levels
(5) EBITDA excluding foreign exchange and income from equity accounted investees, adjusted to exclude additional items and costs that management considers not reflective of core operations

Ammonia is Well Positioned to Capture the Hydrogen Opportunity

With >40% of Grey Hydrogen Use Today, Ammonia is a Building Block in the Emerging H_2 Economy Acting As Its Best Carrier



Conventional Uses

Fertilizer
Urea, Nitrates, other fertilizers

Industrial
Chemical feedstock, NOx abatement, industrial heat

Emerging Uses

Power Generation
Emissions Reductions, Co-firing in thermal plants, e.g. in OECD Asia

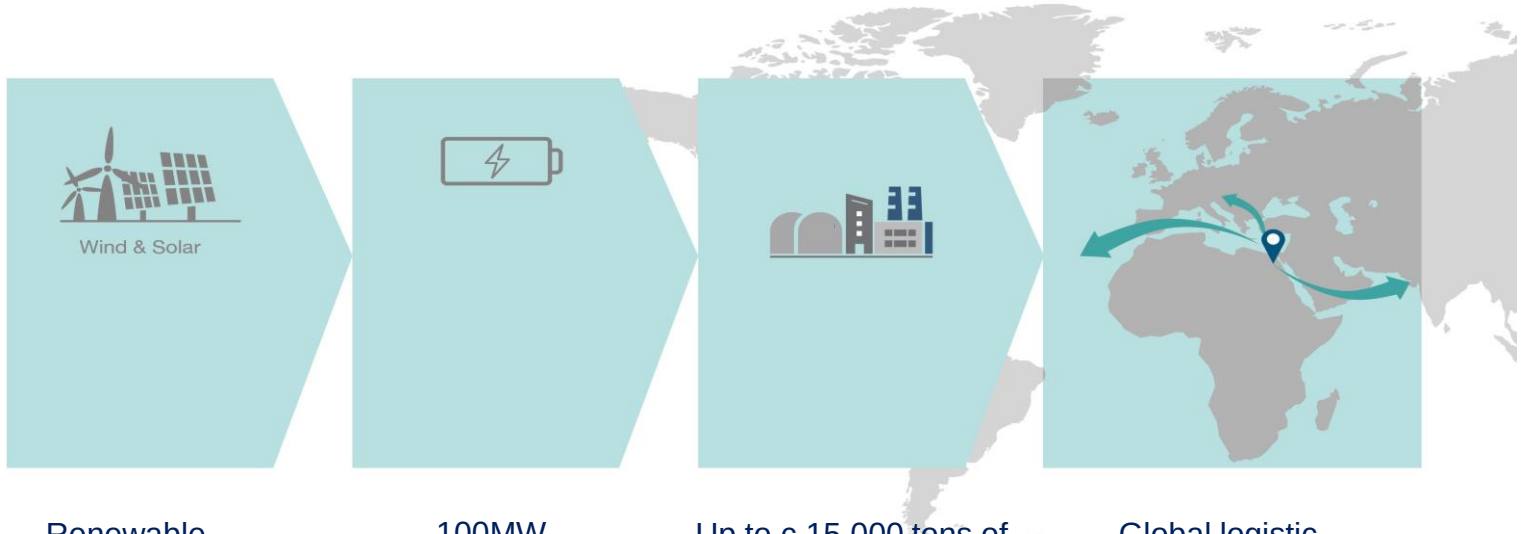
Marine
Ammonia engine or fuel cell

H_2 Energy Carrier

Source: Fertecon Ammonia Outlook, Argus Green Ammonia Conference 2021
Note: (1) Carbon Capture and Storage

Egypt Green Hydrogen

Africa's first integrated green hydrogen PEM plant has started commissioning



Renewable energy from Solar, Wind

100MW electrolyser capacity when fully developed

Up to c.15,000 tons of green hydrogen as feedstock for production of up to 90 ktpa of green ammonia at Fertiglobe's existing ammonia plants

Global logistic capability

Project partners

ORASCOM CONSTRUCTION

THE SOVEREIGN FUND OF EGYPT

Scatec

Fertiglobe
An ADNOC and OCI Company

EGYPT GREEN HYDROGEN

- Fertiglobe's Egyptian facility is the first Green Ammonia production site to receive **ISCC Plus Certification which is a significant milestone for the group.**
- During COP27, **the project started commissioning** the first phase of the green hydrogen plant
- The consortium is in the process of finalizing engineering and technology choices for the 100 MW full-scale plant, aim to reach FID in 2023.
- **Ain Sokhna is strategically located,** being close to the Suez Canal Economic Zone
- **Fertiglobe has a strong global network** through its shareholders OCI N.V. and ADNOC and is an early mover in Hydrogen and Clean Ammonia

Thank you