Shaping the global **energy transition.**

H2Global's Pilot Auction Results

July 2024

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an H2Global Stiftung company

H2Global Pilot Auction

Pilot auction powered by the H2Global mechanism

- **Lot 1** | Renewable ammonia
- **Lot 2** | Renewable methanol (ongoing)
- **Lot 3** | E-SAF

EUR 900m

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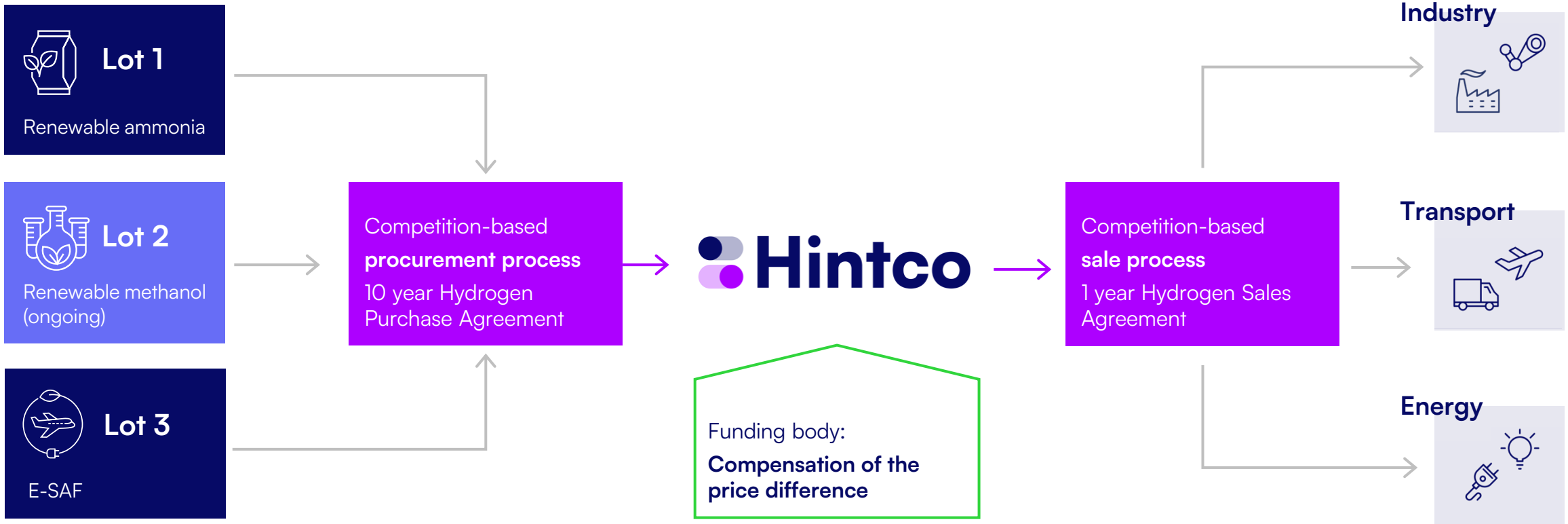
H2Global double-auction mechanism

Scope of current auction: HPA side only

HSA auctions expected from 2025/2026



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Hydrogen Purchase Agreements - Two-stage award process

STAGE 1 **Preliminary competition (qualification phase)**

Maximum of five bidders invited to submit indicative bids and enter into negotiation phase

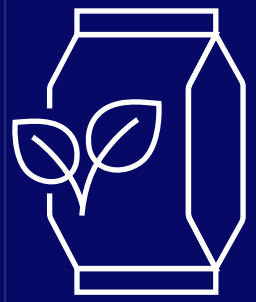
STAGE 2 **Negotiation and bidding phase**

Final bids, followed by one award

Final Investment Decision

Overview: global interest in H2Global pilot auction

Lot 1 | Renewable ammonia	1,393 downloads	65 countries
Lot 2 | Renewable methanol (ongoing)	584 downloads	52 countries
Lot 3 | E-SAF	354 downloads	43 countries



LOT 1 — Renewable Ammonia

Overview

Lot 1
Renewable ammonia

Renewable ammonia produced by mixing and processing **renewable hydrogen and nitrogen.**

2022 The auction was launched at the end of 2022

65 countries across five continents expressed interest in the auction

1,300+ downloads from private companies, regulatory authorities, and academic institutions.

Resulting in one awarded bidder

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Results

Lot 1
Renewable ammonia

Participants

STAGE 1 **Preliminary competition (qualification phase)** — **22** — Maximum of five bidders invited to submit indicative bids and enter into negotiation phase

STAGE 2 **Negotiation and bidding phase** — **5** — Final bids, followed by one award — **1** — **Final Investment Decision**

Timeline

Lot 1
Renewable ammonia

• • • **Multiple extensions were requested at different stages by bidders**

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Aggregated bid insights

Lot 1
Renewable ammonia

Insights from aggregated binding and non-binding bids

All projects proposed the use of alkaline electrolysers, two of which proposed the use of pressurised alkaline electrolysers.

145MW Average electrolysis capacity of 145 MW, with the construction of an average of 295 MW of additional renewable energy.

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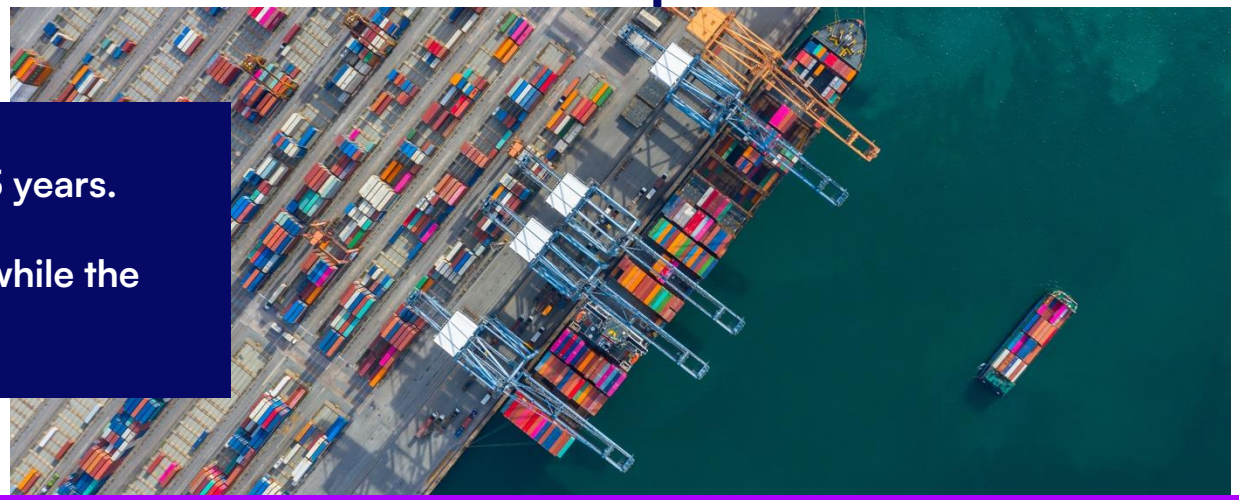
Aggregated bid insights

Lot 1
Renewable ammonia

Insights from aggregated binding and non-binding bids

The first deliveries were expected within a period of 2-3 years.

One project proposed delivery to the port of Antwerp, while the other four proposed delivery to the port of Rotterdam.



210,000-475,000 tons

Supply quantity range offered in the binding and non-binding offers (guaranteed plus additional quantities).

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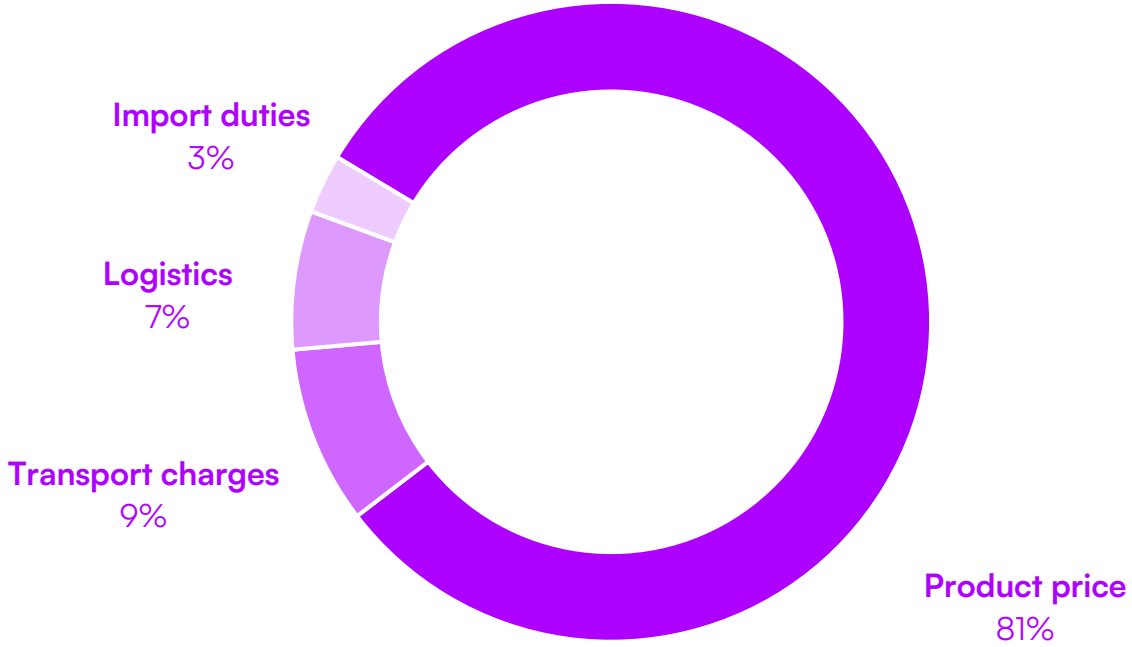
Aggregated bid insights

Lot 1
Renewable ammonia

The **net product prices of the bids, incl. initial and final bids submitted, averaged at 1,048 €/t.**

81% On **average** the net product price contributes 81% of the contract price



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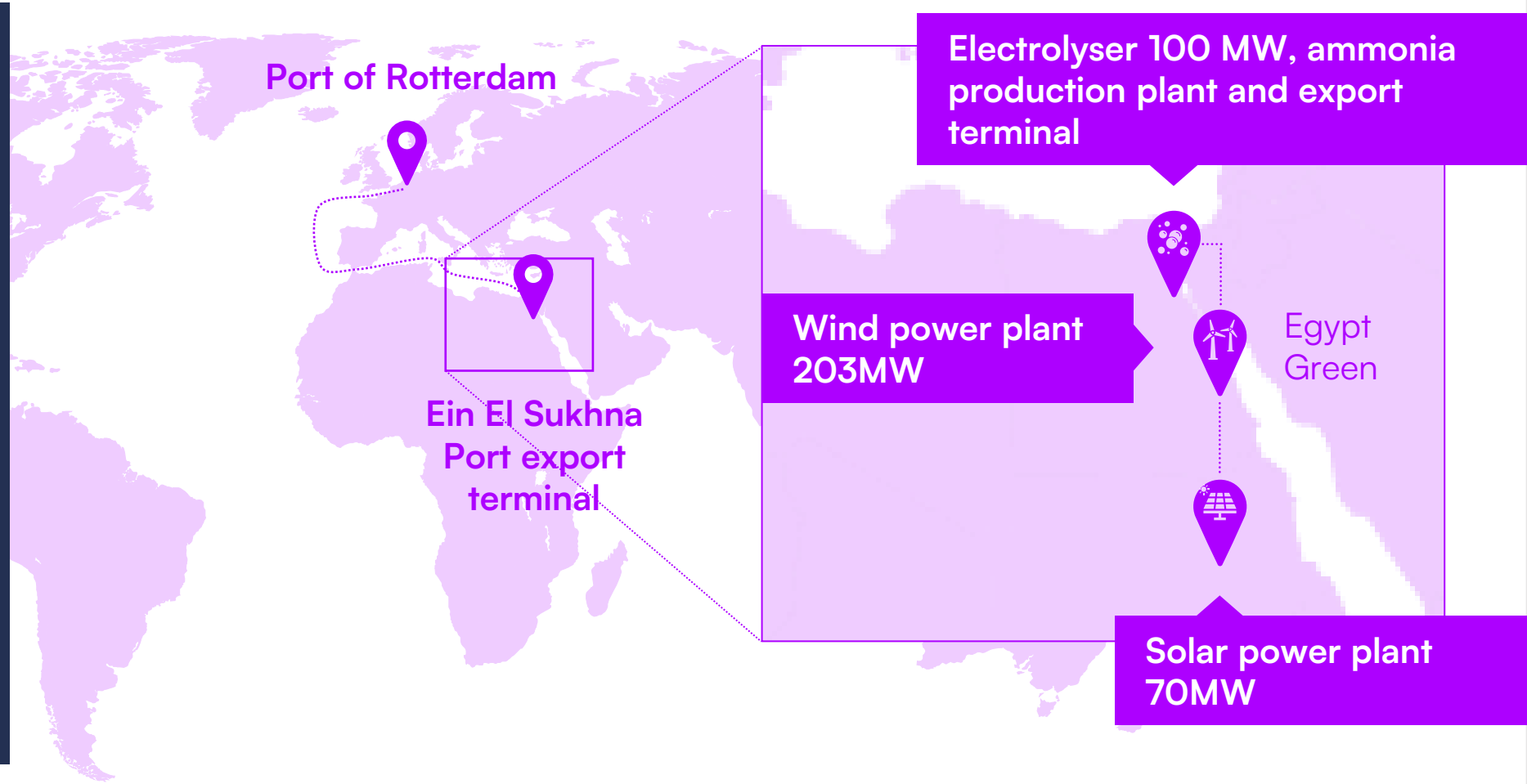
HPA — Winning Bidder — Fertiglobe — Egypt Green

Lot 1
Renewable ammonia

"This award marks a significant milestone for Fertiglobe in advancing sustainable ammonia production and a further critical step towards FID of Egypt Green Hydrogen, expected in H1 2025. Our selection as the winning bidder in H2Global's pilot auction underscores our leadership in supplying low-carbon products and our commitment to shaping a more sustainable future, and I appreciate the work of our incredible team to make this award possible. We are leveraging this vital program which makes our investment in sustainable ammonia economically viable, supporting critical decarbonization technology, while maintaining our disciplined growth strategy.

Ahmed El-Hoshy, Chief Executive Officer

Fertiglobe
An ADNOC and OCI Company



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Fertiglobe

Fertiglobe, a strategic partnership between ADNOC and OCI Global, is incorporated in Abu Dhabi and listed at the Abu Dhabi Securities Exchange (ADX).

Fertiglobe's supply of renewable hydrogen will come from Egypt Green Hydrogen, a consortium between Fertiglobe, Scatec ASA, Orascom Construction, the Sovereign Fund of Egypt, and the Egyptian Electricity Transmission Company. The project is in the Suez Canal Economic Zone.

Fertiglobe
An ADNOC and OCI Company

Fertiglobe is the largest producer of nitrogen fertilizers in the MENA region, and a pioneer in sustainable ammonia. It is also the world's largest seaborne exporter of urea and ammonia combined.

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Egypt Green Hydrogen Project: Overview

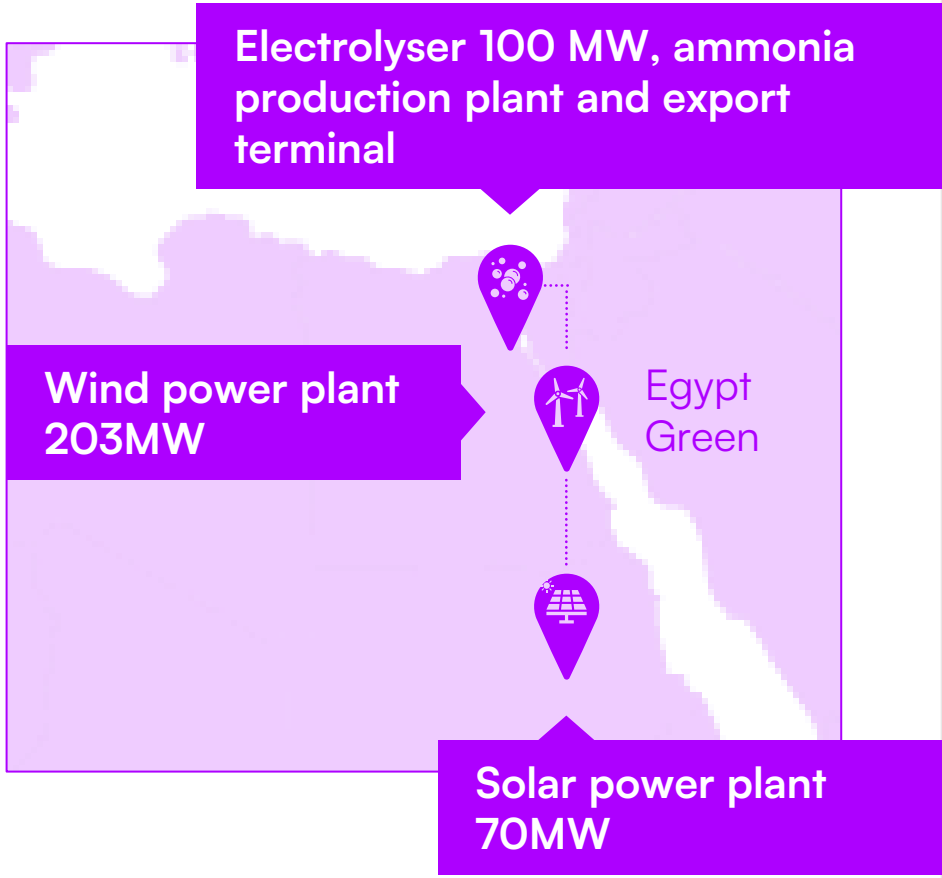
Lot 1
Renewable ammonia

Technical upgrading of an existing Haber-Bosch plant to process renewable hydrogen into ammonia.

Electricity used in the production process will be generated in newbuild onshore wind park and a newbuild solar PV plant.

Egypt's national power grid will be utilized for the transmission of the electricity to the production site.

1,330 Up to 1,330 jobs are expected to be created in the project's construction and O&M phases.



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Renewable Ammonia Output / Offtake

Lot 1
Renewable ammonia

The HPA guarantees the successful bidder an annual minimum offtake of approximately 40,000 tons, based on Hintco's available purchase budget of €40 million per year.

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Prices

Lot 1
Renewable ammonia

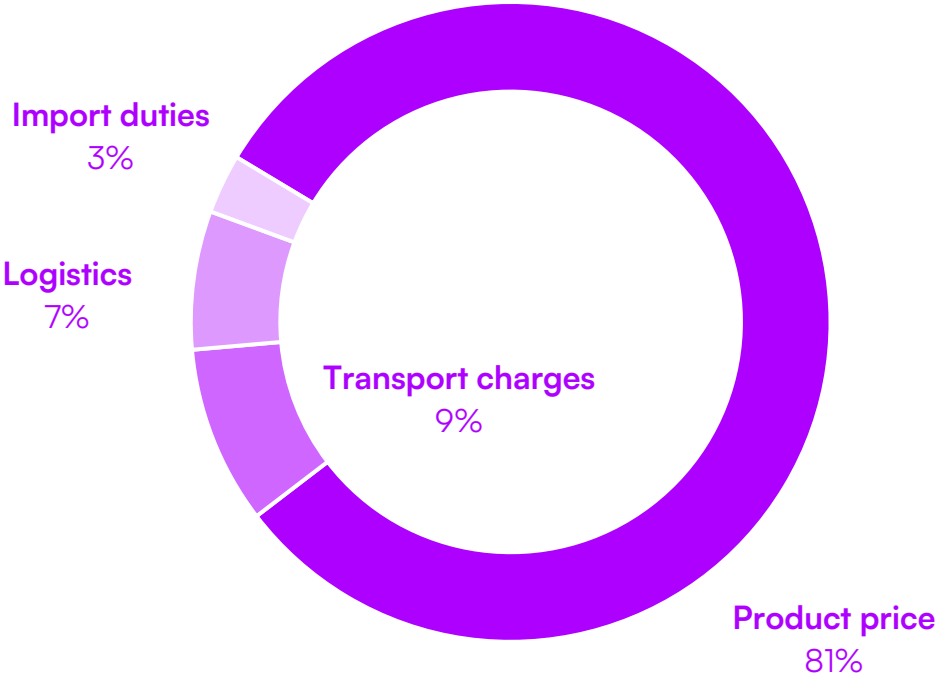
The **maximum net product price was set** at 1,280 €/t.

Fertiglobe
An ADNOC and OCI Company

811 €/t
(ex-factory) net product price

37%
lower than the bid cap

TOTAL **1,000 €/t**
incl. net product price, transport and logistic charges, import and export duties



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Transport to Europe and sales

Lot 1
Renewable ammonia

Renewable ammonia will be transported to ammonia storage tanks at Ein El Sukhna Port via an existing 7 km ammonia pipeline.

The seaborne delivery to Europe will be overseen by Fertiglobe International Trading, a wholly owned subsidiary of Fertiglobe PLC.

The renewable ammonia will be delivered to the Port of Rotterdam and is going to be sold by Hintco in batches of 500tons as standardised quantities in annual auctions.

Hydrogen Sales Agreements (HSAs) auctions will provide frequent and uncorrelated price data regarding the markets willingness and ability to pay for renewable ammonia in Europe, contributing to the development of a functioning market.

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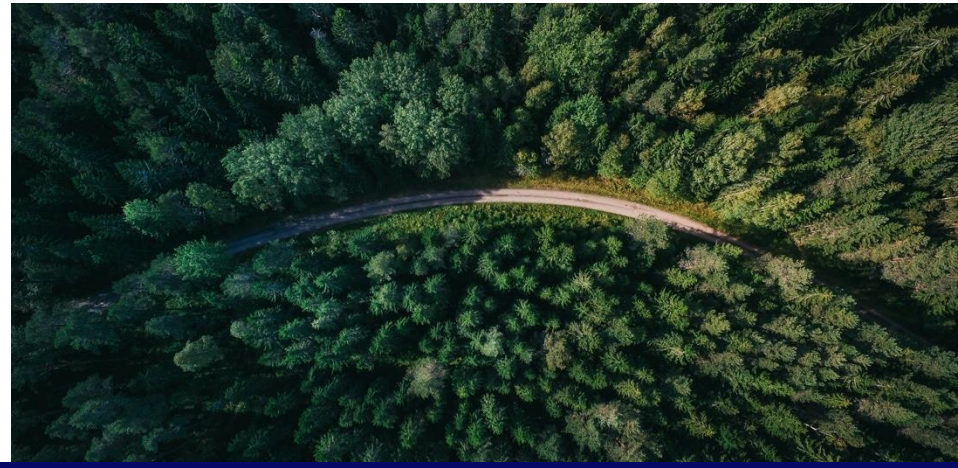
Sustainability Requirements

Lot 1
Renewable ammonia

Per auction design, the producer must:

- Meet EU standards for renewable hydrogen (RED II and Delegated Acts (DAs))
- Meet the sustainability criteria (defined by BMWK)
- Conduct Environmental and Social Impact Assessment (EIA and SIA) in accordance with IFC/World Bank standards
- Document how the project will contribute to meeting Paris Climate Agreement goals and the Sustainable Development Goals (SDGs).

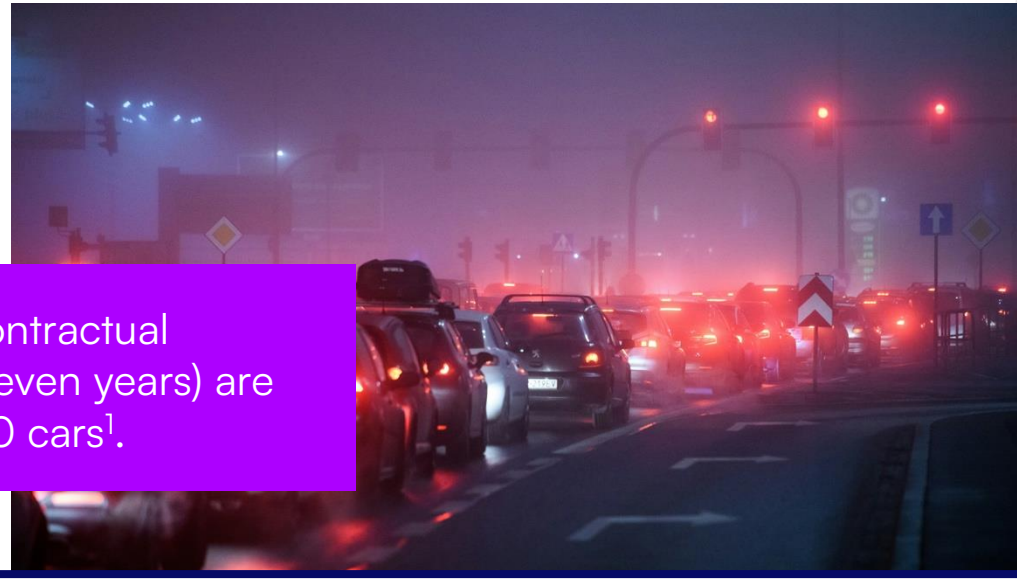


Sustainability criteria include protection of arid regions, sustainable land use, protection from forced resettlement, conservation of biodiversity, implementation of an environmental management system, local value creation, equal opportunities and gender, adherence to International Labour standards (ILO).

Greenhouse gas savings

Lot 1
Renewable ammonia

The produced renewable ammonia will achieve an emissions intensity reduction of approx. **75.5 %** relative to ammonia produced based on unabated fossil fuels.



62,000

The emissions savings associated with the contractual maximum supply commitment (397 kt over seven years) are equivalent to the annual emissions of 62,000 cars[1].

Validated by

AGUTcert AFNOR Group

Reviewed and validated Fertiglobe's proposal's adherence to sustainability criteria.

TÜV SÜD

Reviewed and validated Fertiglobe's proposal's compliance with regulatory requirements (RED II and (DAs).

1 Assuming an ammonia output of 70,000 t per year from the facility with the ammonia produced directly displacing existing grey ammonia. With: 108.1 gCO2/km emissions per km and 11,298 km/a km driven per car and year.

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LOT 3 — E-SAF

Overview

Lot 3
E-SAF

Sustainable, synthetic aviation fuel produced using renewable electricity and hydrogen as an intermediate product (e-SAF) market is in a **very early development stage.**

2022 The auction was launched at the end of 2022

34 countries across five continents expressed interest in the auction

300+ downloads from private companies, regulatory authorities, and academic institutions.

Private sector participation in the e-SAF auction ended up being less intense than in the concurrent auction for renewable ammonia.

Results

Lot 3
E-SAF

Participants

STAGE 1	**Preliminary competition (qualification phase)**	3	Maximum of five bidders invited to submit indicative bids and enter into negotiation phase
STAGE 2	**Negotiation and bidding phase**	1	No final bids were submitted

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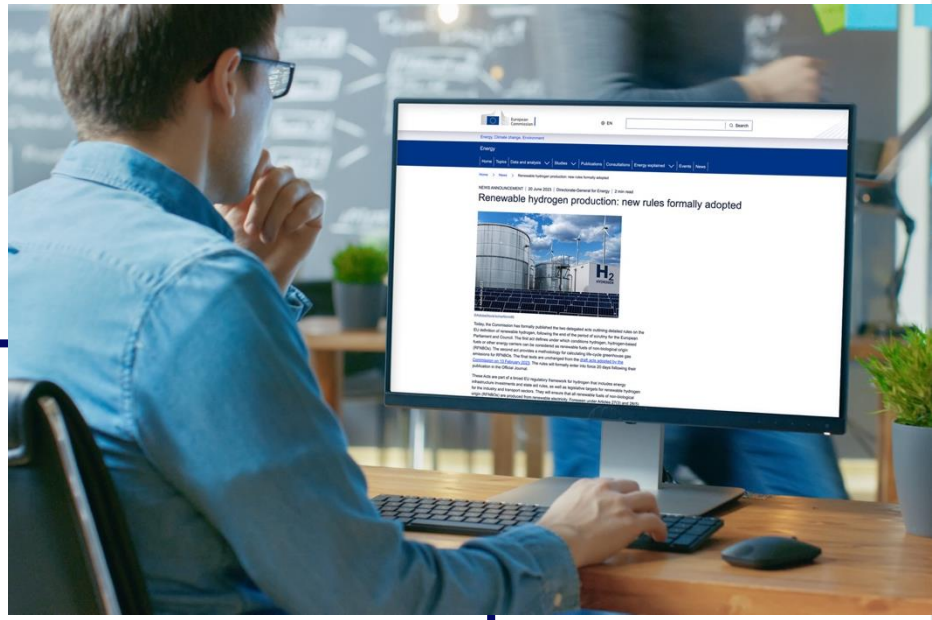
Bid insights

Lot 3
E-SAF

Two bidders refrained from submitting an indicative bid for two main reasons:

- The implementation of the regulatory framework surrounding the GHG accounting of the carbon intended to produce e-SAF is subject to uncertainties in countries outside of the EU. In order for e-SAF to be marketable, it must meet the requirements set out in the Delegated Acts of the Renewable Energy Directive (DR 2018/2001, "RED II" together with the "DAs").
- The relatively small contract value and duration being offered, which was incompatible with the practicalities of setting up a new e-SAF plant, given the investment volume and project development time required to build such a plant.



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Bid insights

Lot 3
E-SAF

The third bidder eventually decided against submitting a final offer because:

- The EU Commission's current interpretation of RED II DA 28(5) requires a 'proportional allocation' of GHG savings to all end products of the Fischer-Tropsch process.
- For an economically viable e-SAF production in an upgraded existing Fischer-Tropsch plant a flexible allocation solely to e-SAF rather than a proportional allocation of GHG savings across the various products, for which no subsidy nor green market premium currently exist, would have been required.

Early finding

Reduced regulatory uncertainty + larger lots will be needed to ensure success of future auctions

Upcoming auctions

Upcoming auctions

Lot 2 (renewable methanol)		Ongoing
Lot 1 (renewable ammonia) - HSA auctions		Expected in 2025/26
€3.5 billion round of auctions		In preparation -> currently conducting market consultations
€0.3bn + €0.3bn* Netherlands — Germany joint auction		In preparation

*German contribution included in the budget of the €3.5 bn tender

Lessons learned

Lessons learned

Lot Sizes and contract duration

The selected lot sizes (procurement volume) and contract term are "at the lower end" in the current market environment. Bidders are focused on realizing economies of scale and offering marketable prices. The substantially larger lot sizes announced in the upcoming funding window address this obstacle.

Regulatory Uncertainties

Current regulatory uncertainties, especially the lack of practice in the interpretation of the new EU DAs and the import of derivatives from outside Europe, are difficult for bidders to calculate and thus hinder investment. Specific examples include uncertainties over possible sources of electricity and CO2.

Bidders' Commitment

Hintco found all bidders involved in the process to be extremely committed and constructive. Many suggestions have already been integrated into the ongoing process, with others under consideration for upcoming tenders. Based on the experience gained to date, Hintco will be able to provide future bidders with more targeted advice and assistance.

Port Infrastructure Access

Access to necessary port infrastructure is a challenge for many bidders. Hintco aims to overcome any bottlenecks through contractual arrangements.

ANNEX

Fertiglobe - Key Facts Overview

Project title	Egypt Green
Renewable ammonia producer and supplier	Fertiglobe PLC (“Fertiglobe”)
Project partners (renewable energy and hydrogen)	Scatec ASA, Orascom Construction, The Sovereign Fund of Egypt, The Egyptian Electricity Transmission Company
Contractual partner (offtaker)	HINT.CO GmbH, Germany (hereafter “Hintco”)
Project location	Suez Canal Economic Zone (SCZONE), 120 km southeast of Cairo, Egypt
Average product price (FOB)	811.30 €/t (net price without value added tax)[1]
Total contract price delivered to Europe	1,000.00 €/t (contract price without value added tax; including transportation, logistics, customs)
Contractual maximum supply commitment (including ramp-up and optional quantities)	19,500 t in 2027, from 2028 up to 73,000 t per year; in total 397,500 t until 2033
Contractual offtake commitment	19,500 t in 2027, from 2028 40,000 t per year; in total 259,500 t until 2033
Electrolyser technology	Pressurized alkaline; 100 MW; 13,000 t renewable H2 per year. Final decision on manufacturer not yet taken
Renewable ammonia production capacity	Up to 74,000 t (NH3) per year
Electricity sourcing	Newly build renewable energy capacity; 203 MW onshore wind + 70 MWp PV
Emissions intensity	Approx. 75.5 % reduction compared to grey ammonia. The emissions savings associated with the contractual maximum supply commitment (397 kt over seven years) are equivalent to the annual emissions of 62,000 cars. [5]

1. Volume-weighted average price of firm quantities, including ramp-up quantity
2. Cradle to receiving port emissions
3. The GHG emissions savings are calculated in accordance with the methodology for assessing GHG emissions savings from renewable liquid and gaseous transport fuels of non-biological origin and from recycled carbon fuels as set out in Article 28(5) RED II in conjunction with DR 2023/1185 which define the fossil fuel comparator of the product at 94 g CO2eq/MJ.
4. With: Emissions per km: 108.1 gCO2/km; CO2 emissions performance of new passenger cars in Europe (europa.eu), Km per car and year:11298 km/a (ODYSSEE-MURE), emissions per car and year: 1.22 tCO2/a calculated, and bidder’s emissions savings calculations, validated by TÜV Süd.