

# Methanol & Ammonia

*Decarbonisation pathways for  
the next generation marine fuels*



# Agenda



**Argus & green  
marine fuels**



**The regulatory  
landscape – as it  
stands now**



**The state of green  
marine fuels in  
Asia**



**Methanol: its  
emergence &  
challenges**



**Ammonia: the road  
ahead**



**Conclusion**

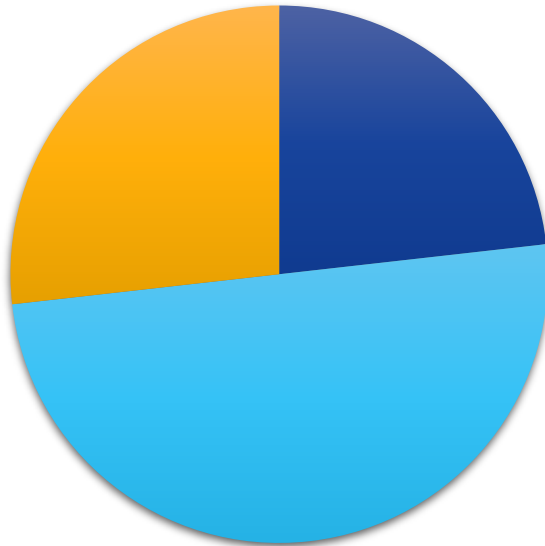
# Argus & green marine fuels

# Argus - trusted PRA on alternative marine fuels pricing solutions

Global Alt Marine Reporting Lines

Daily spot prices and news

Monthly 2-year forecast



■ Shipowners/Bunker Purchasers ■ Traders ■ Suppliers

- Over 50 companies on reporting lines globally
- Capturing liquidity across the alternative marine fuels space

**Argus Marine Fuels**  
Issue 23-140 | Tuesday 18 July 2023

**OVERVIEW**

- Market participants reported lacklustre demand and broadly slow activity across Europe.
- Delivered VLSPD prices continued to fall at Zhoushan port as suppliers reduced prices to attract demand.
- VLSPD prices fell in Tokyo, with a tight outlook of the fuel availability has eased.

**Global marine bunkers**

Low	High	Mid	4
70.20	179.20	70.00	-1.38

**0.5% FUEL OIL BUNKERS AND BULK 0.5% FUEL OIL**

**Argus Biofuels**  
Daily international market prices and commentary  
Issue 23-198 | Monday 6 October 2023

**HIGHLIGHTS**

- HVO ARA trade for classes I and II set tone in firmer complex
- Buying interest supports strong rise for HFA-SPK
- German waste-based ethanol firms to new high
- Prompt RSO lab Dutch mill softer, further along curve firms
- Southeast Asia bioethanol: UCO prices slip

**PRICES**

**Biofuels spot prices**

	Mid	Ask	5t
Reseved ONE	1,410	1,420	-12.00
Stav ONE	1,347	1,357	-4.00
FAME 10 C CFPF	1,332	1,342	-4.00
FAME 10 C CFPF	1,408	1,418	-11.00
UCO:ME	1,409.00	1,419.00	-4.84
Talco ONE	1,449.45	1,459.45	-4.84
POKE ONE	1,534.45	1,544.45	-4.84
Advanced FAME 10 C CFPF	1,564.45	1,574.45	-4.84

**MARKET COMMENTARY**

**European bioethanol**  
European bioethanol premiums and outright prices fell, with outright below the average September value for all grades. UCO:ME lab ARA range led trading activity on Argus Open Markets (AOM), with five deals initiated for 13 October-3 November loading, all in a close price range of \$209-\$101. Spot value edged down by \$3.84/t to around \$201/t and outright value eased by \$5.84/t to a near three week low at about \$1,471/t.

**ARA trade**  
A total of 106,000t traded in the paper market, mostly driven by ARA deals. These included trade at \$181/t for October totalling 10,000t and at \$825/t for November also totalling 10,000t, as well as a number of spreads with Future 0 at \$140-\$15/t for October and \$210-\$215/t for 1Q.

**Spot RME**  
Spot RME fell by the most following four deals initiated on AOM. Value dropped by \$11.31/t to \$755.51/t, after gains seen across last week. Outright value hovered near a three-week low after falling by \$12/t to \$1,421/t.

**RME paper trade**  
RME paper trade included October at \$755/t for 3,000t, October/November at \$161/t for 10,000t/month and the third quarter of next year at \$480/t for 1,000t/month.

**Prompt FAME 10**  
Prompt FAME 10 dealt twice, first at \$480/t and then at \$463/t. Spot value edged down by \$3.50/t to \$471.50/t and outright value slipped by \$4/t to \$1,337/t.

**In the paper market**  
FAME 10 dealt for \$615/t for the third quarter of next year, for 3,000t/month.

**Argus consulting services**  
Issue 23-9  
Thursday 20 July 2023

**Argus Marine Fuels Outlook**  
Global conventional and alternative marine fuels

**Overview**

HFO bunker prices in June strengthened as a result of tightening availability. Exports from the Middle East have fallen as a result of strong domestic demand and Opec's crude production cuts, while lower Mexican HFO exports are also a factor. This led to a reduction in VLSPD HFO spreads in northwest Europe and Singapore. HFO cracks should remain strong until at least the end of summer.

MGO prices in Europe rose in June, tracking rising diesel prices caused by reduced imports from east of Suez. MGO cracks will probably stay elevated until autumn.

VLSPD crack spreads in Singapore and Fujairah were up in June, but ample supply and muted demand began to weigh on values in July. VLSPD supplies could rise following the start of the third CDU at Kuwait's Zour refinery. This could further pressure VLSPD markets.

Marine bodied bunker premiums to conventional bunker fuels in Europe and Singapore widened in June, underpinned by a rise in biofuel blending component prices and are expected to widen further. But LNG bunker values remained on a downward trajectory. The fall in natural gas prices at the Dutch TTF has helped increase the competitiveness of LNG for bunkering, relative to alternative fuels.

Biomethanol in northwest Europe continued to command a hefty premium to conventional marine fuels in June, although the premium was 32pc down on the year.

**Key bunker prices, \$/t**

	May 23	Jun 23	Jul 23	Aug 23	Sep 23
<b>3.15% fuel oil (HFO) BBO:EU</b>	426	458	460	463	465
Rotterdam	441	458	459	461	468
Houston	397	418	442	435	424
Fujairah	410	408	438	440	440
<b>3.15% MGO:EU</b>	628	691	720	711	723
Rotterdam	681	719	719	719	726
Houston	726	743	782	807	787
Fujairah	647	705	753	751	761
<b>3.15% VLSFO</b>	510	526	538	542	549
Rotterdam	516	528	542	549	559
Singapore	544	561	571	575	572
Houston	514	513	522	528	523
Fujairah	540	562	559	562	559
<b>Marine bodied</b>					
ARA BBO	664	701	740	733	779
ARA BBO	1060	1105	1148	1138	1246
SG VLSFO based Singapore	713	778	781	794	805
<b>Key methanol</b>					
SG VLSFO based Singapore	639	558	500	512	589
Methanol northwest Asia	710	617	623	618	616
Methanol US Gulf coast	609	566	535	539	598
SG VLSFO based Singapore	505	521	487	495	492
<b>Key ammonia</b>					
Ammonia 48% east Asia	469	770	734	719	792
Ammonia 48% east Asia	707	723	729	741	763
Ammonia 48% Caribbean/US Gulf	740	508	508	502	586
Ammonia 48% Middle East	580	534	543	565	642

**Bespoke consulting projects:**

Services include bespoke long-term price forecasts out to 2050, supply-demand models and supporting business intelligence reports.





# The regulatory landscape – where it stands now

# IMO defers Net-Zero vote: Industry & National Responses

- The International Maritime Organization (IMO) postponed its vote on the Net-Zero Framework (NZF) by one year, a move proposed by Singapore's MPA to safeguard progress.
- The delay has sparked mixed reactions—some see it as a setback for green fuel development, while others expect minimal short-term impact given EU measures like FuelEU Maritime.
- National responses diverge: India has delayed e-methanol subsidies, China's green methanol sector remains steady, and several industry players view the pause as a chance to recalibrate investment strategies.

29 Oct 25 [Singapore's MPA affirms net zero commitment: Correction](#)

29 Oct 25 [India delays e-methanol tender plans after IMO decision](#)

22 Oct 25 [IMO delay jolts Singapore's push for green marine fuels](#)

21 Oct 25 [H2 industry let down by IMO vote, pins hopes on EU](#)

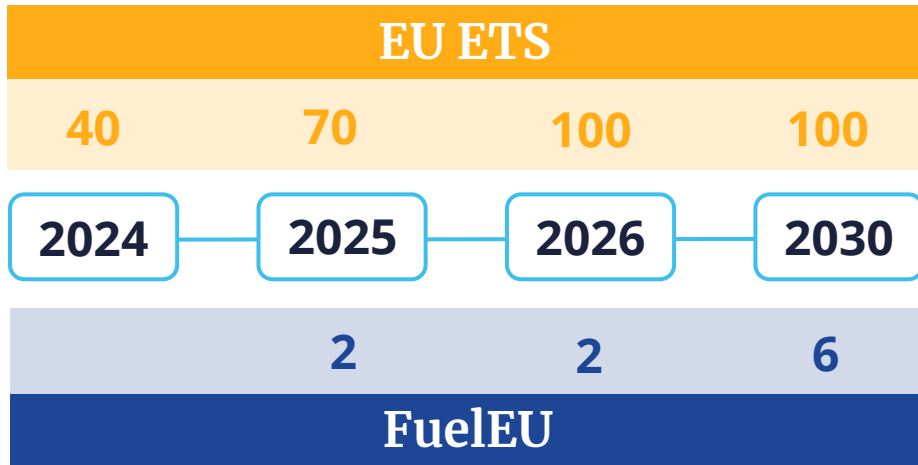
18 Oct 25 [NZF remains very much alive: IMO secretary general](#)

18 Oct 25 [IMO meeting fails to adopt GHG pricing](#)

14 Oct 25 [IMO discussions on global GHG rules remain mixed](#)

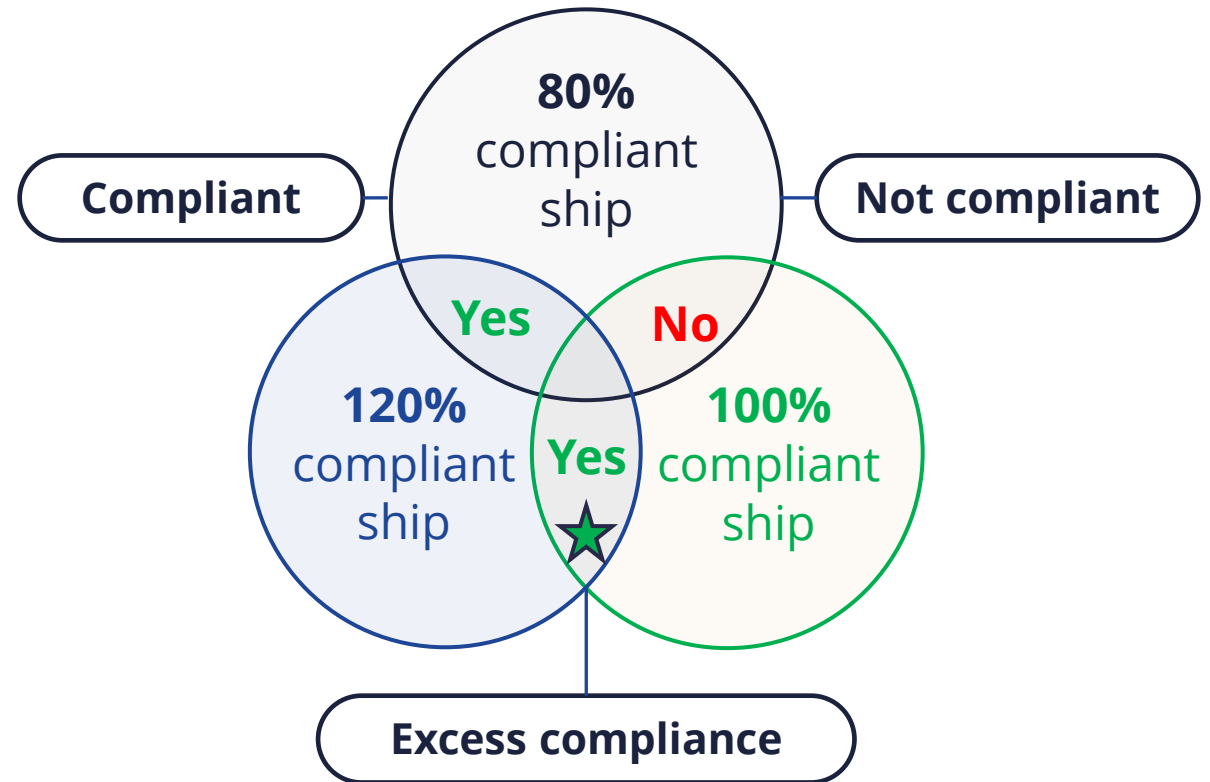
# Regulation forces change today: fuel switching and trading compliance

EU regulation targets rise out to 2030 (%)

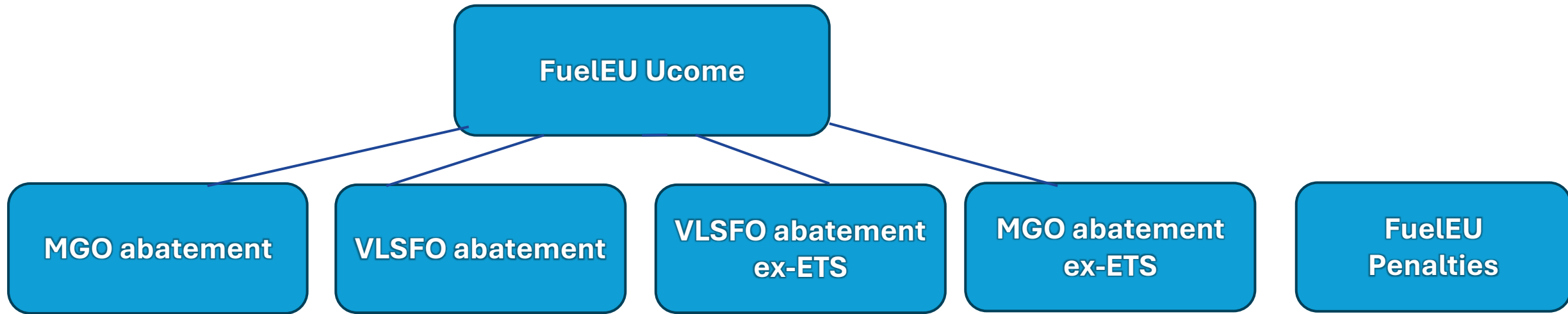


- Fuel EU Maritime is the gamechanger forcing lifecycle GHG reduction today
- Biodiesel is the only option unless you have access to LNG

Pooling: for flexibility and compliance trading



# Argus launched FuelEU cost assessments for compliance trading



- Daily calculated assessments, published in €/tCO<sub>2</sub>e & \$/tCO<sub>2</sub>e
- Includes Argus benchmark Ucome fob ARA, and VLSFO/MGO fob northwest Europe.
- Ex-ETS variant reflects the value of abatement, less 70% of the price of EU ETS spot allowances.

Penalty prices are daily calculated prices for failing to meet FuelEU requirements, published in €/tCO<sub>2</sub>e & \$/tCO<sub>2</sub>e.

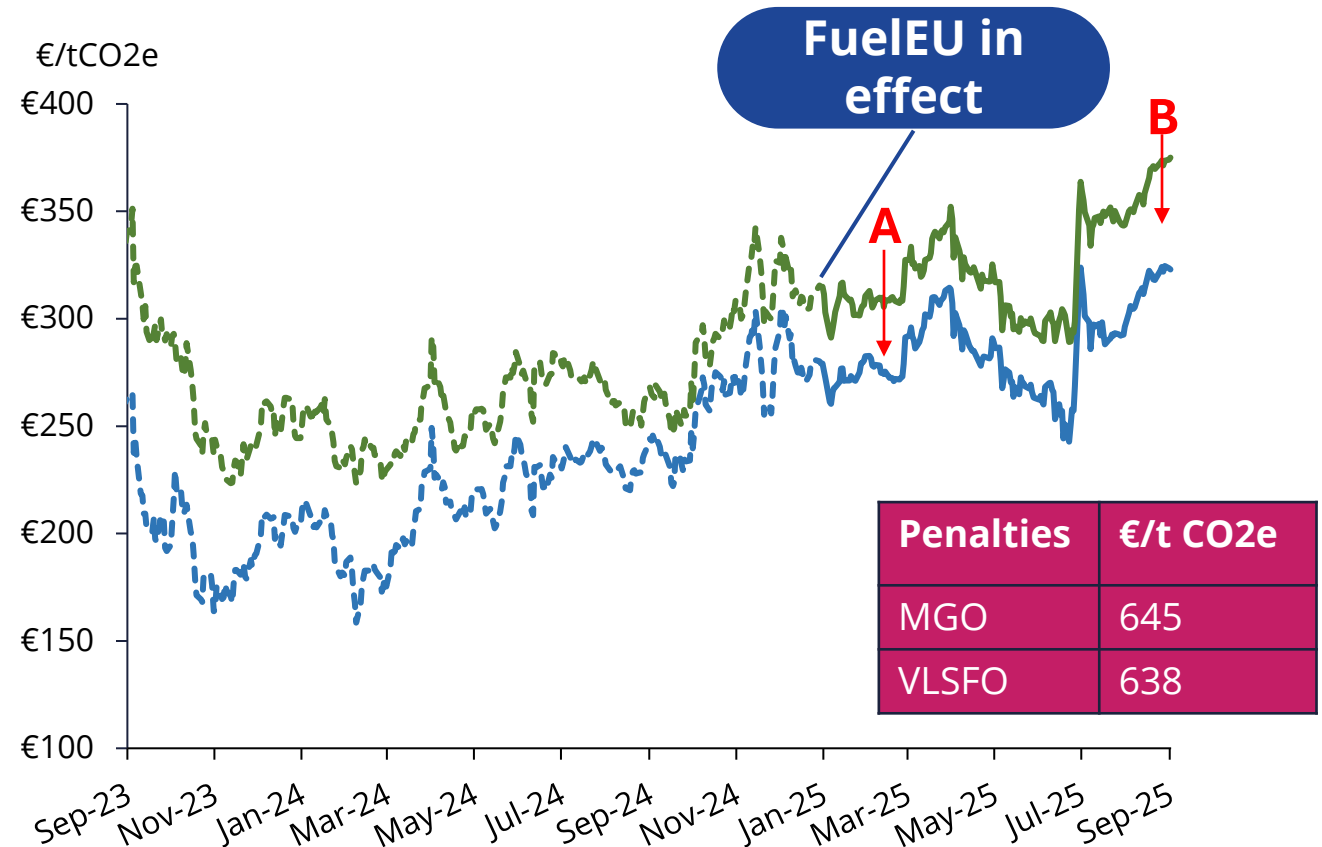
# FuelEU cost of compliance: €275/tCO<sub>2</sub>e vs. €645/tCO<sub>2</sub>e in penalty

Pricing compliance using Ucome to abate



- Abatement prices reflect the cost of reducing emissions by one tonne of CO<sub>2</sub>e under FuelEU through consuming Ucome replacing a conventional bunker fuel.

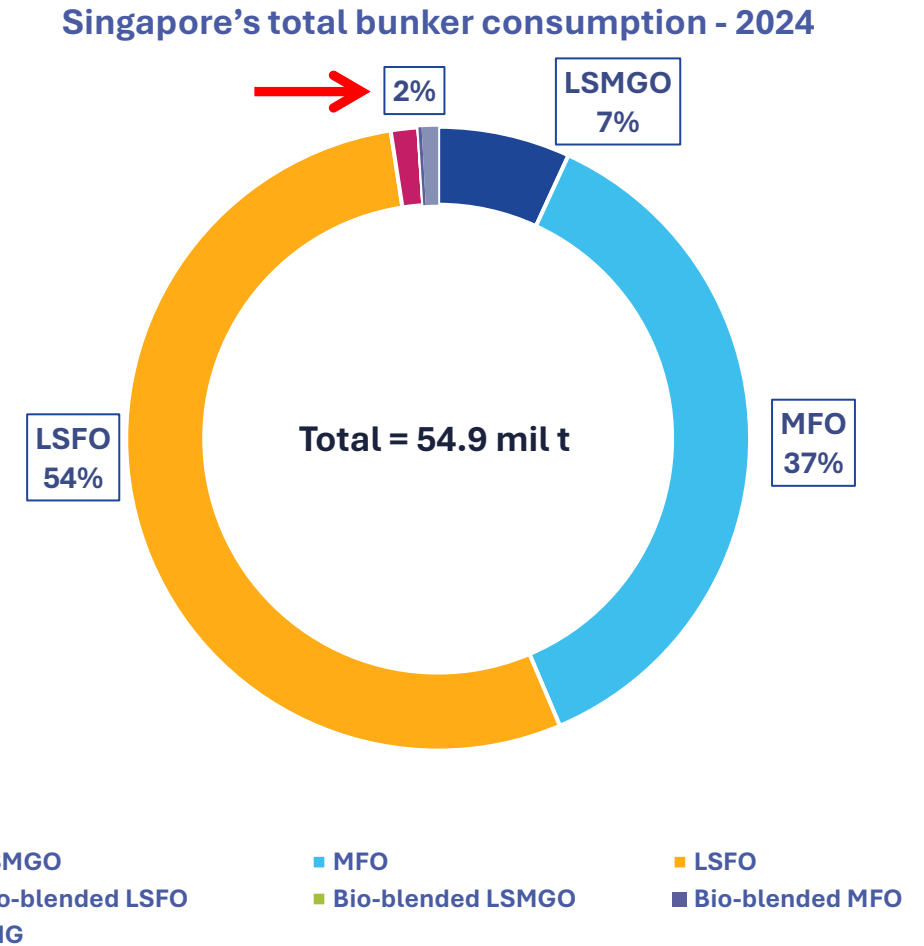
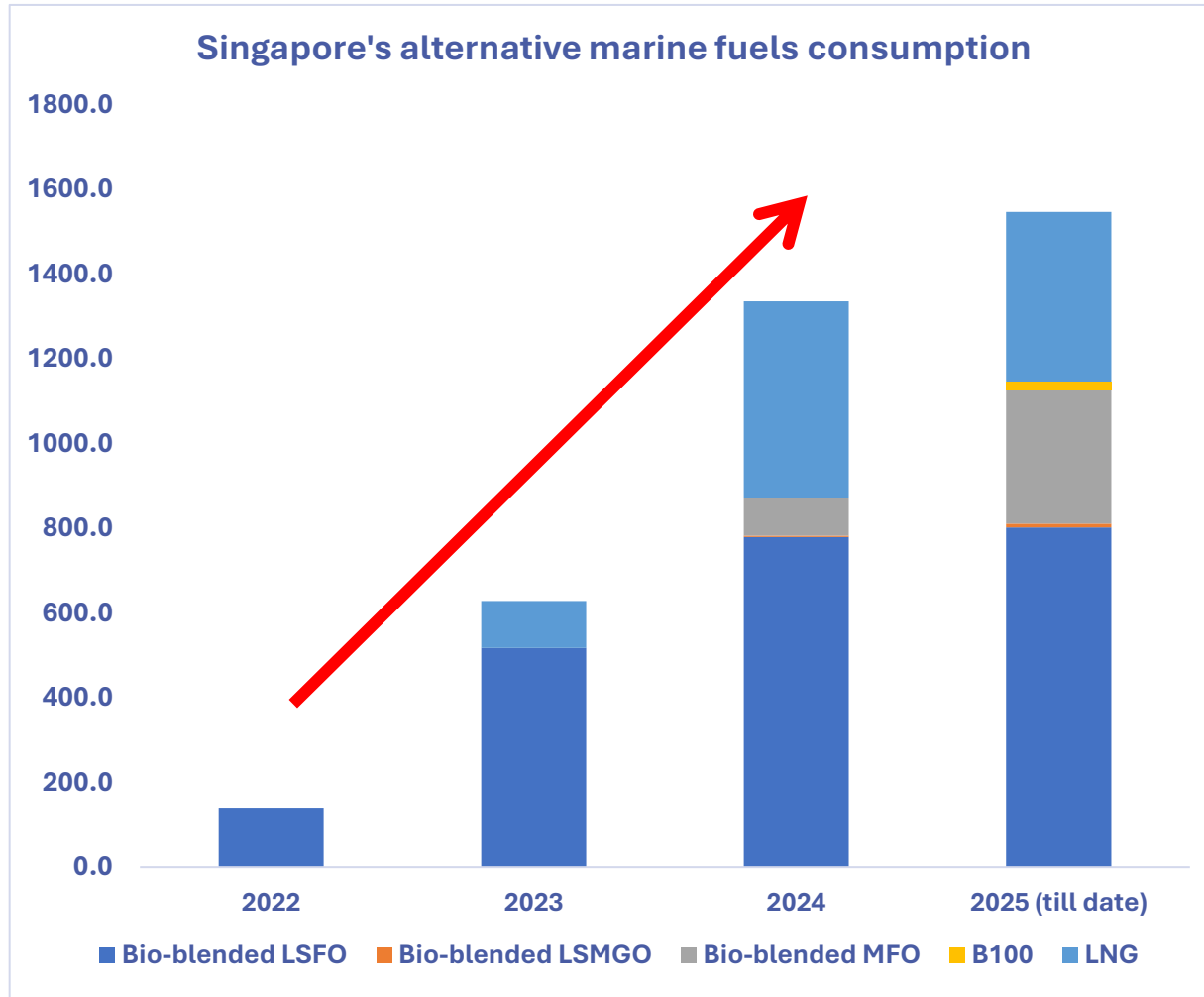
Changing cost of generating and selling compliance



- FuelEU Ucome-MGO abatement
- FuelEU Ucome-VLSFO abatement

# The state of green marine fuels in Asia

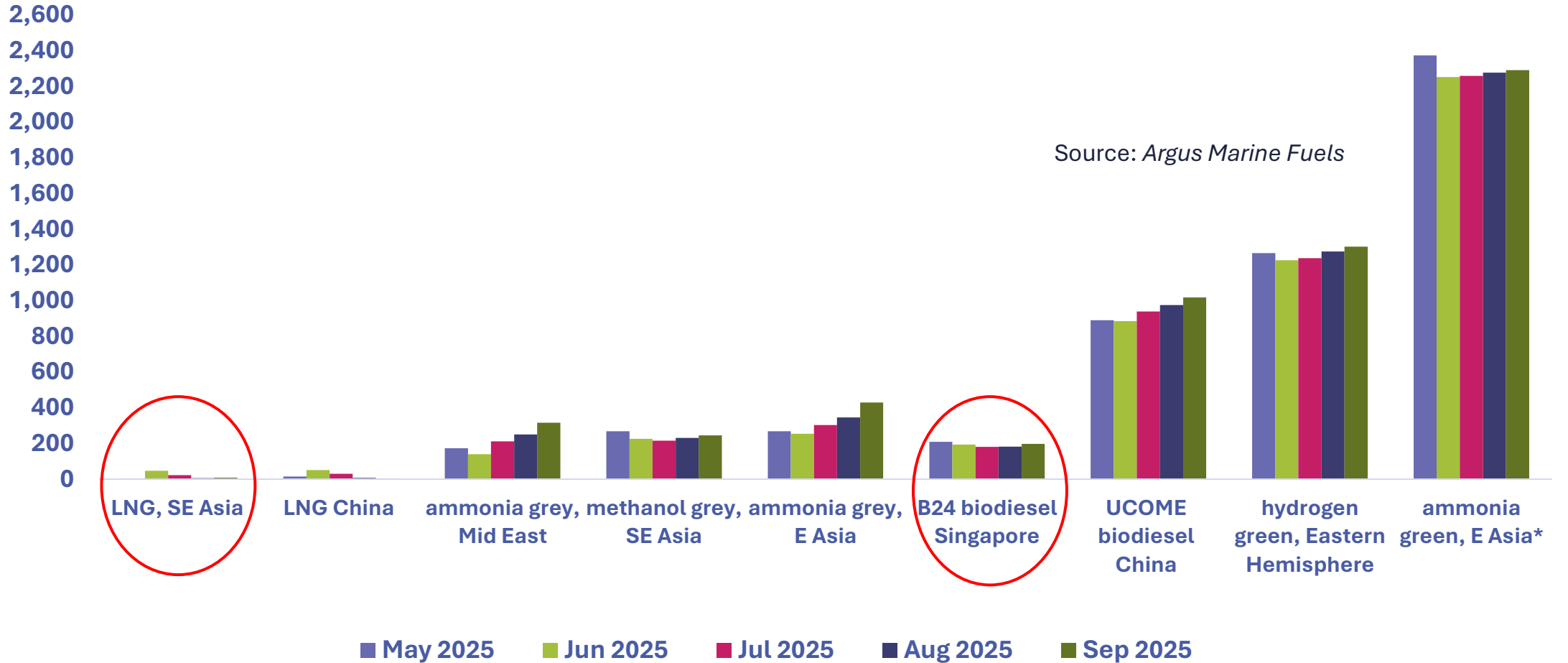
# SG bio-bunker market grows in 2025 - new blends emerge



Source: Maritime & Port Authority of Singapore (MPA)

# Bio-blends & LNG stay as the most competitive fuels

Eastern Hemisphere low-carbon marine fuels less VLSFO, \$/t VLSFO-equivalent



# Fossil demand stays firm despite energy spikes

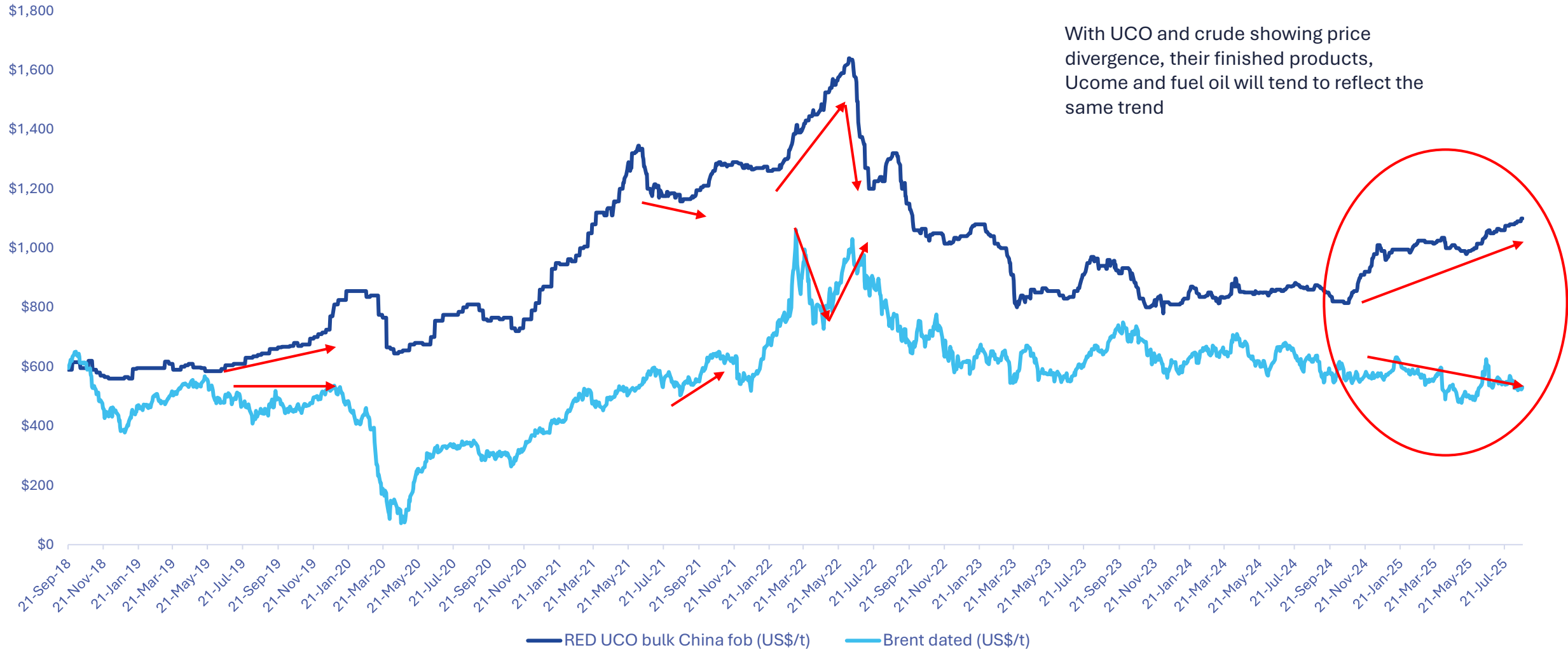
- In 2025, increased vessel arrivals in April-July supported demand for conventional bunker fuels in Singapore.
- HSFO prices have been supported by robust demand, particularly from increased adoption of exhaust scrubbers
- VLSFO and LSMGO prices have trended down in line with Brent movements.

Average Singapore bunker prices (USD/t)			
	2023	2024	2025 (YTD)
HSFO	464.60	478.15	439.82
VLSFO	615.98	600.29	514.22
MGO	795.968	715.387	651,42



- (L) VLSFO bunker dob Singapore
- (L) HSFO bunker dob Singapore
- (L) MGO bunker dob Singapore
- (R) Ice Brent month 1

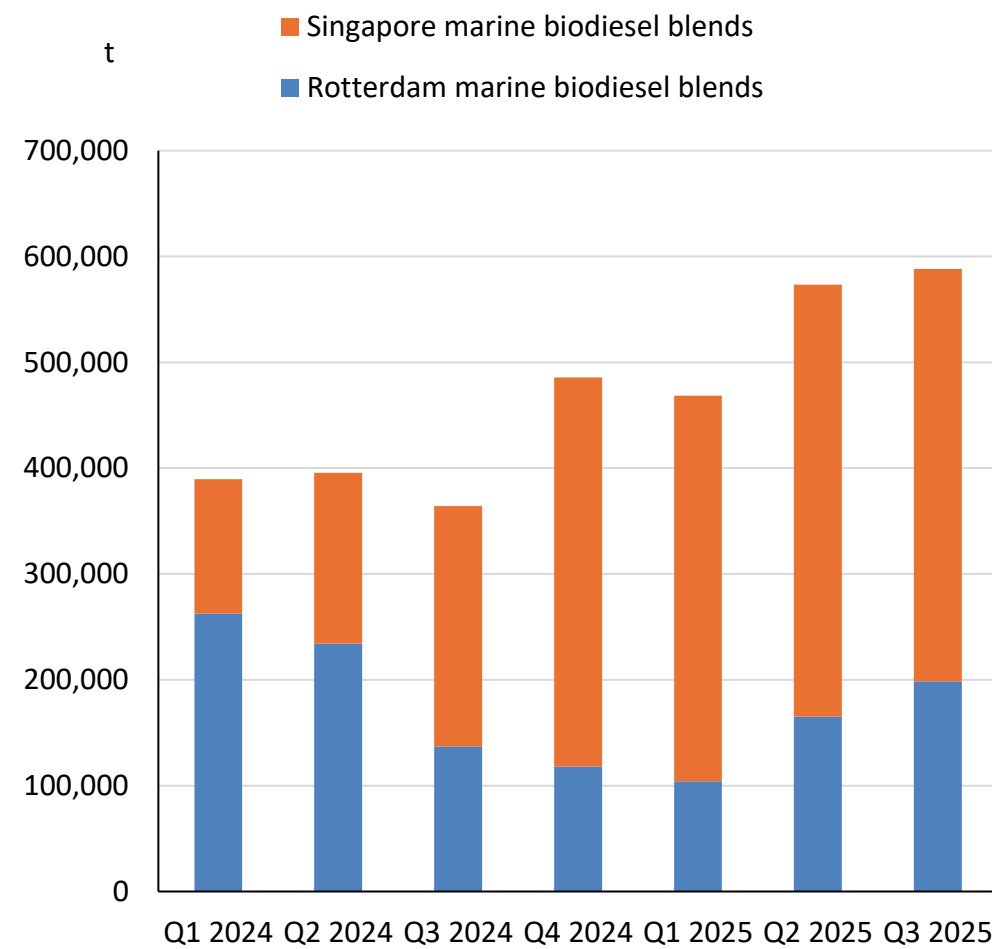
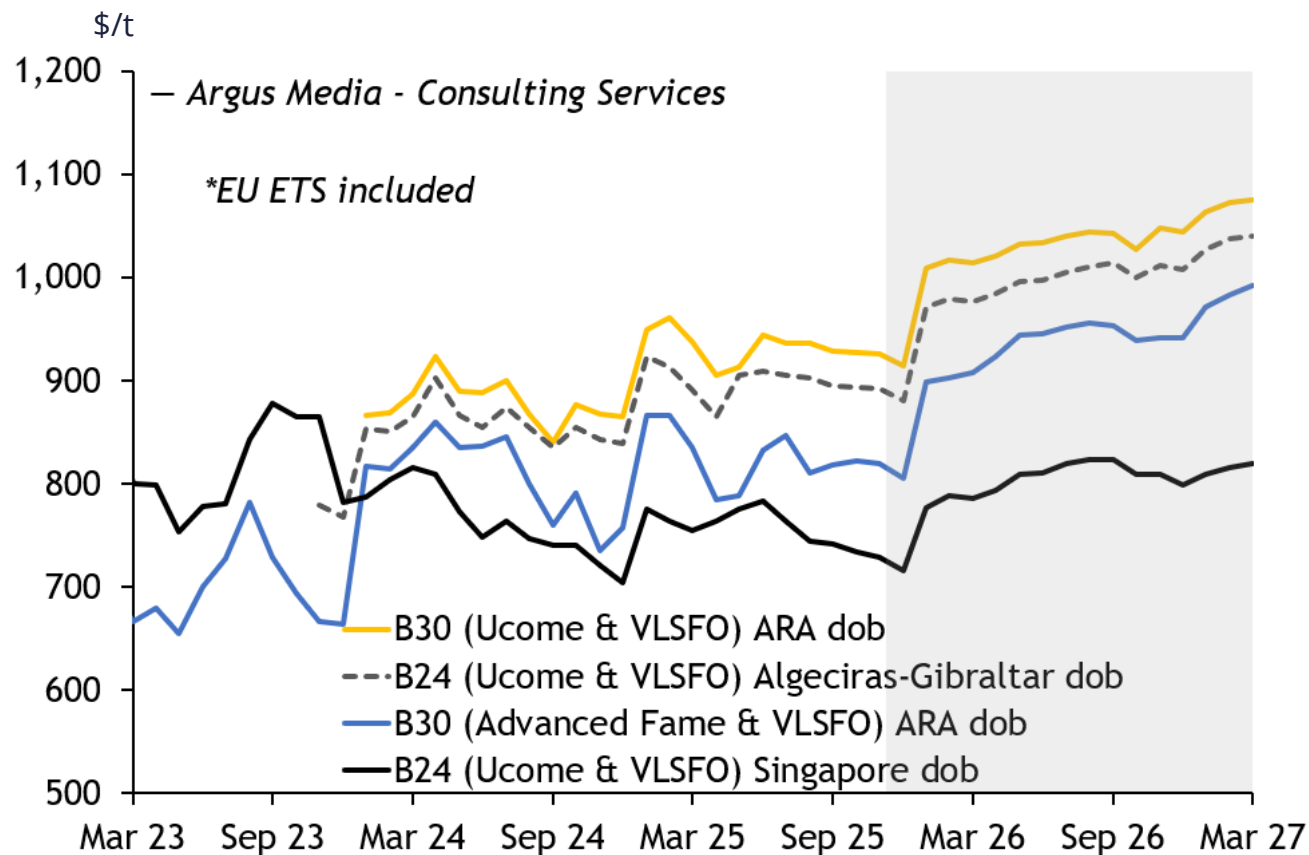
# UCO and the crude oil markets show obvious divergence



Source: Argus

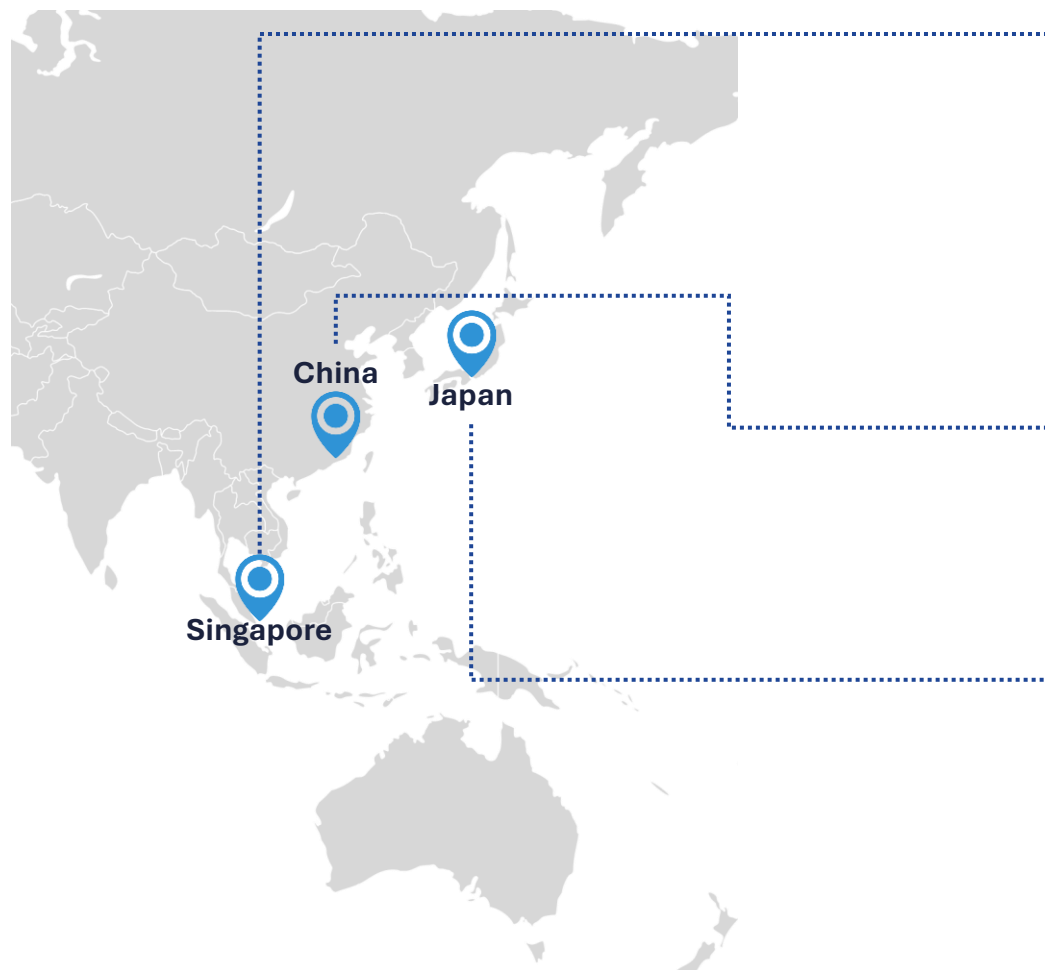
# EU compliance being met with Chinese biodiesel via Singapore

## B24 Singapore: most competitive to 2027



Source: Sales data from Rotterdam port data, MPA

# The rise of LNG bunkering in Asia



## 1. Singapore

Port	Estimated Volume (1H2025)	Vessels
Singapore	~240,000 tonnes	<ul style="list-style-type: none"> <li>- FueLNG Bellina</li> <li>- FueLNG Venosa</li> <li>- Brassavola</li> </ul>

## 2. China

Port	Estimated Volume (1H2025)	Vessels
Yangshan (Shanghai)	~170,000 tonnes	<ul style="list-style-type: none"> <li>- Huaihe Nengyuan Qihang</li> <li>- Hai Gang Wei Lai</li> </ul>
Yantian	~139,000 tonnes	<ul style="list-style-type: none"> <li>- Xin Ao Pu Tuo Hao</li> </ul>
Zhoushan	~45,000 tonnes	<ul style="list-style-type: none"> <li>- Hai Yang Shi You 302</li> <li>- Hai Yang Shi You 301</li> </ul>

## 3. Japan

Port	Estimated Volume (1H2025)	Vessels
Tokyo Bay	~45,000 tonnes	<ul style="list-style-type: none"> <li>- Ecobunker Tokyo Bay</li> <li>- Kaguya</li> </ul>
Yokohama	~30,000 tonnes	<ul style="list-style-type: none"> <li>- Ecobunker Tokyo Bay</li> <li>- Kaguya</li> </ul>

# South Korea could enable NEA's LNG bunkering



## South Korea's Posco launches LNG bunkering project



01 Oct 25, 11:44 - [Natural gas](#) [LNG](#) [Marine fuels](#) [Alternative marine fuels](#) [Transportation](#) [Sea](#)

Singapore, 1 October (Argus) – South Korean conglomerate Posco Group's trading arm Posco International and logistics unit Posco Flow have partnered with the Yeosu Gwangyang Port Authority to develop LNG bunkering facilities, Posco announced on 30 September.



## Busan Port completes first simultaneous LNG bunkering



12 Aug 24, 13:04 - [Natural gas](#) [LNG](#) [Oil products](#) [Marine fuels](#) [Alternative marine fuels](#)

Singapore, 12 August (Argus) – South Korea's Busan Port executed its first LNG bunkering with simultaneous operations (Simops) on 8 August.



## South Korea launches first LNG bunkering vessel

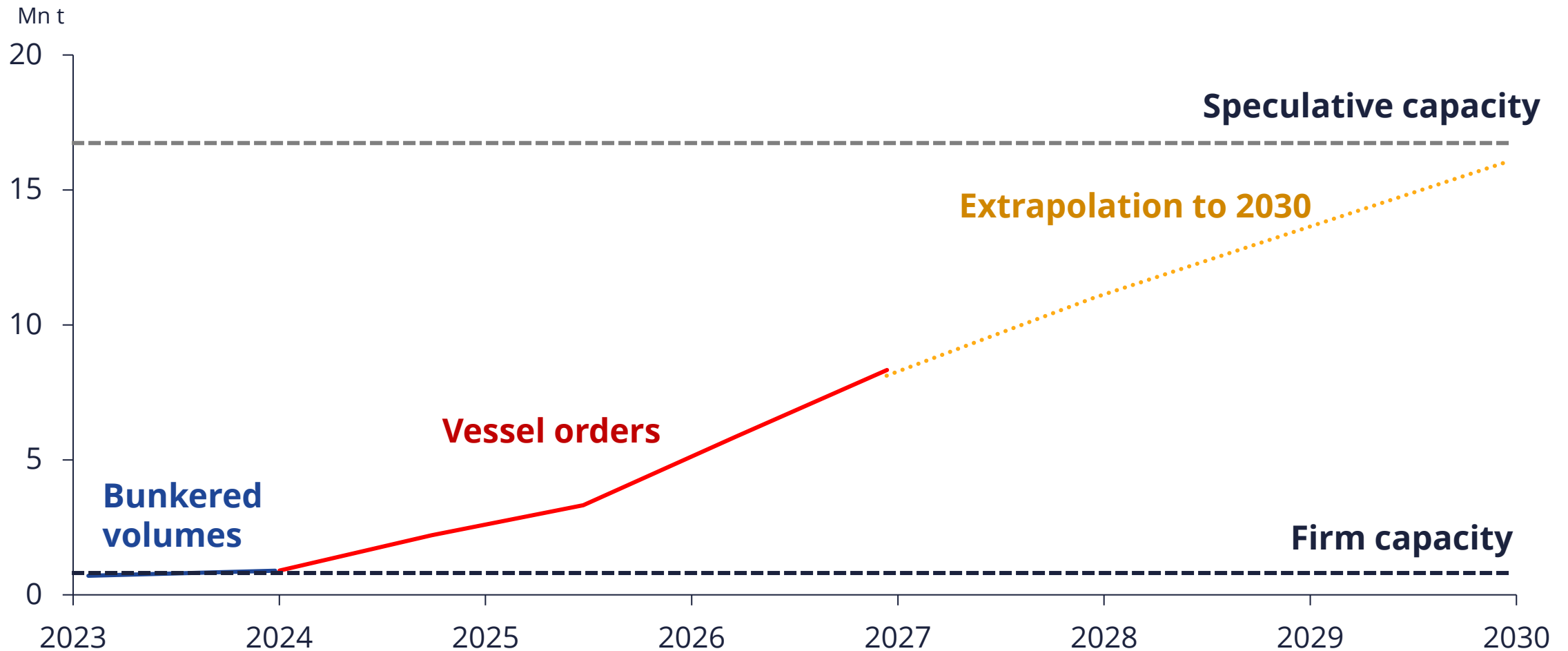


11 May 23, 17:03 - [Natural gas](#) [LNG](#) [Fundamentals](#) [Demand](#) [Supply](#)

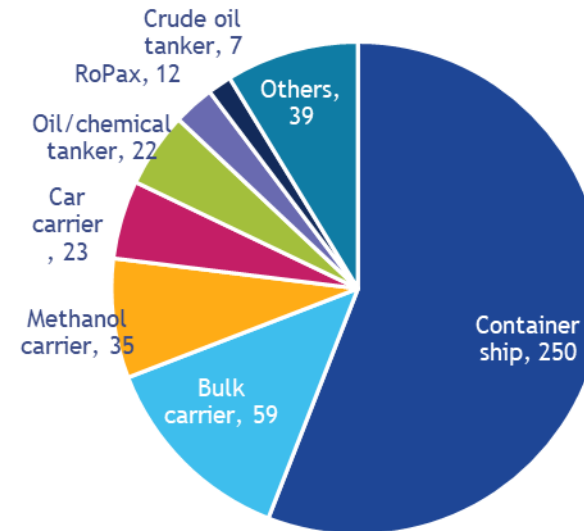
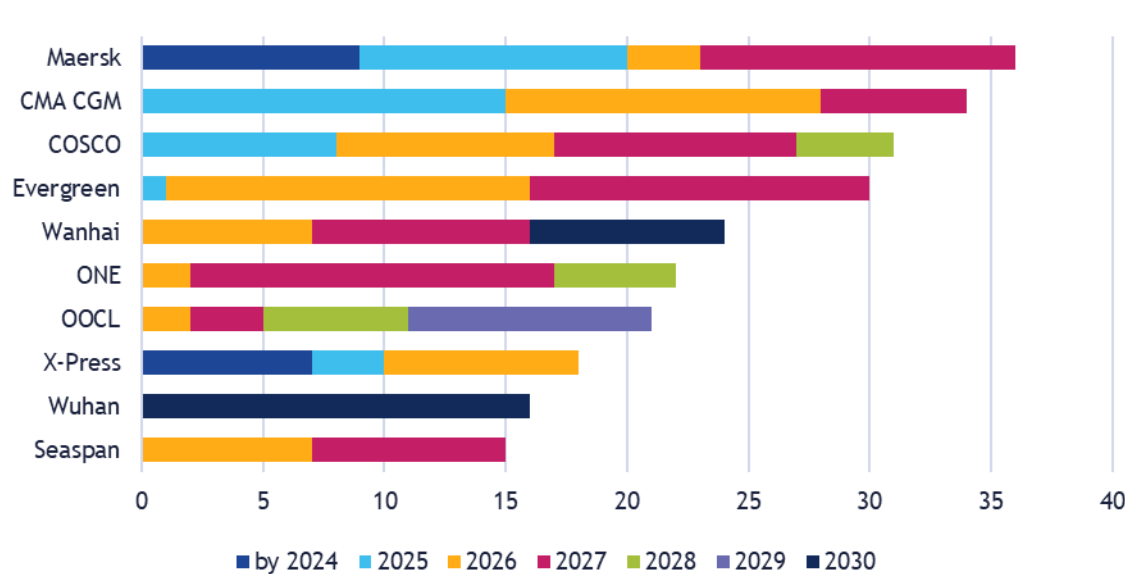
London, 11 May (Argus) – South Korean shipbuilding firm Hyundai Heavy Industries has completed the construction of the country's first LNG bunkering vessel, South Korea's ministry of trade, industry and energy (Motie) said.

# Methanol: its emergence & challenges

# Methanol has potential but capacity buildup issues persist



# Green methanol demand outlook: fleets to grow in 2026-27



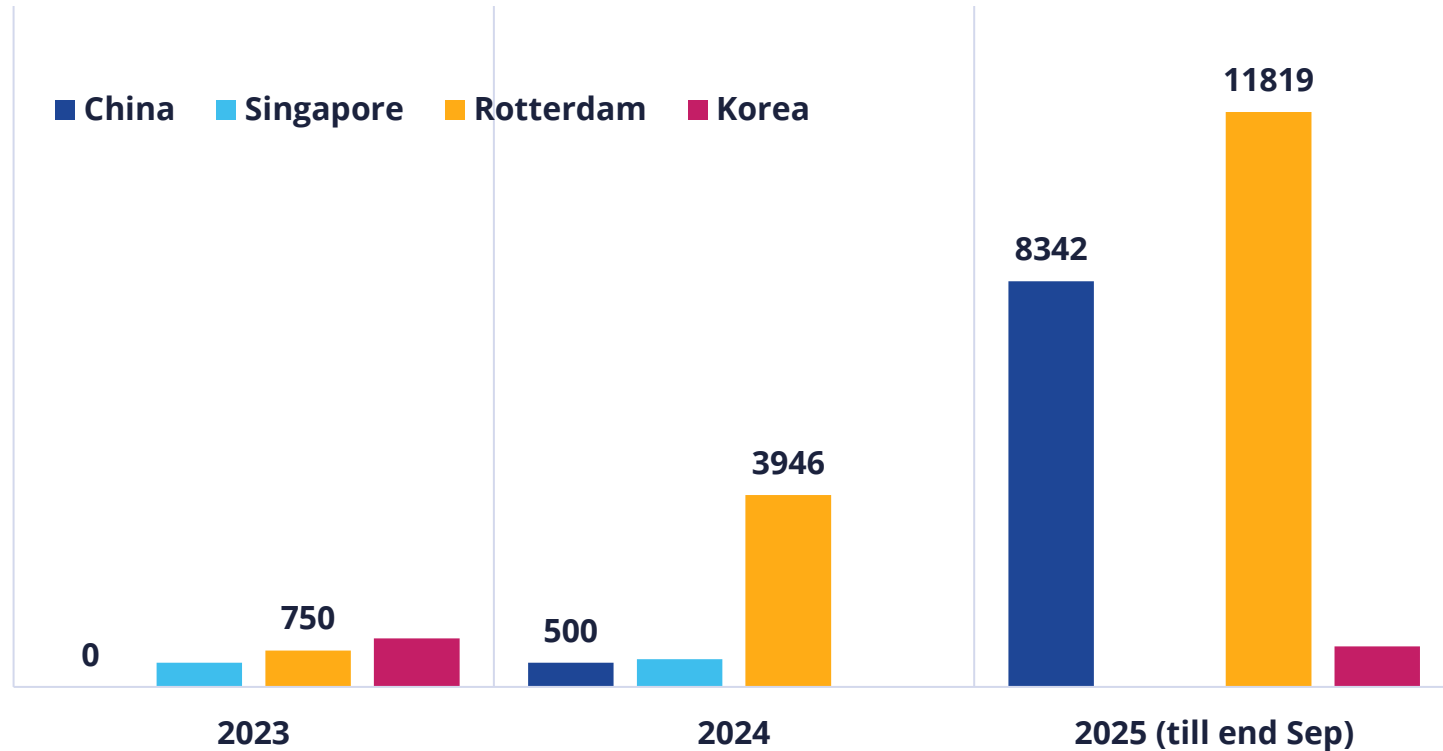
Data source: DNV

- Nearly 70 methanol fleets are operational globally. By end-2025, this number will increase to 116, up further to 236 by end-2026, and 352 by end-2027.
- Container ships account for 56%, followed by bulk carriers 13% and methanol carriers 8%. Top ship owners who ordered the most methanol fleets are Maersk, CMA CGM, COSCO, Evergreen, Wan Hai, ONE, and OOCL.
- Initial demand may be constrained by cost and easy compliance. The majority of the demand is on trials and spot basis for Europe voyage. Only a few leading shipping companies could commit to stable regular demand.

# Green methanol bunkering pick up through 2025

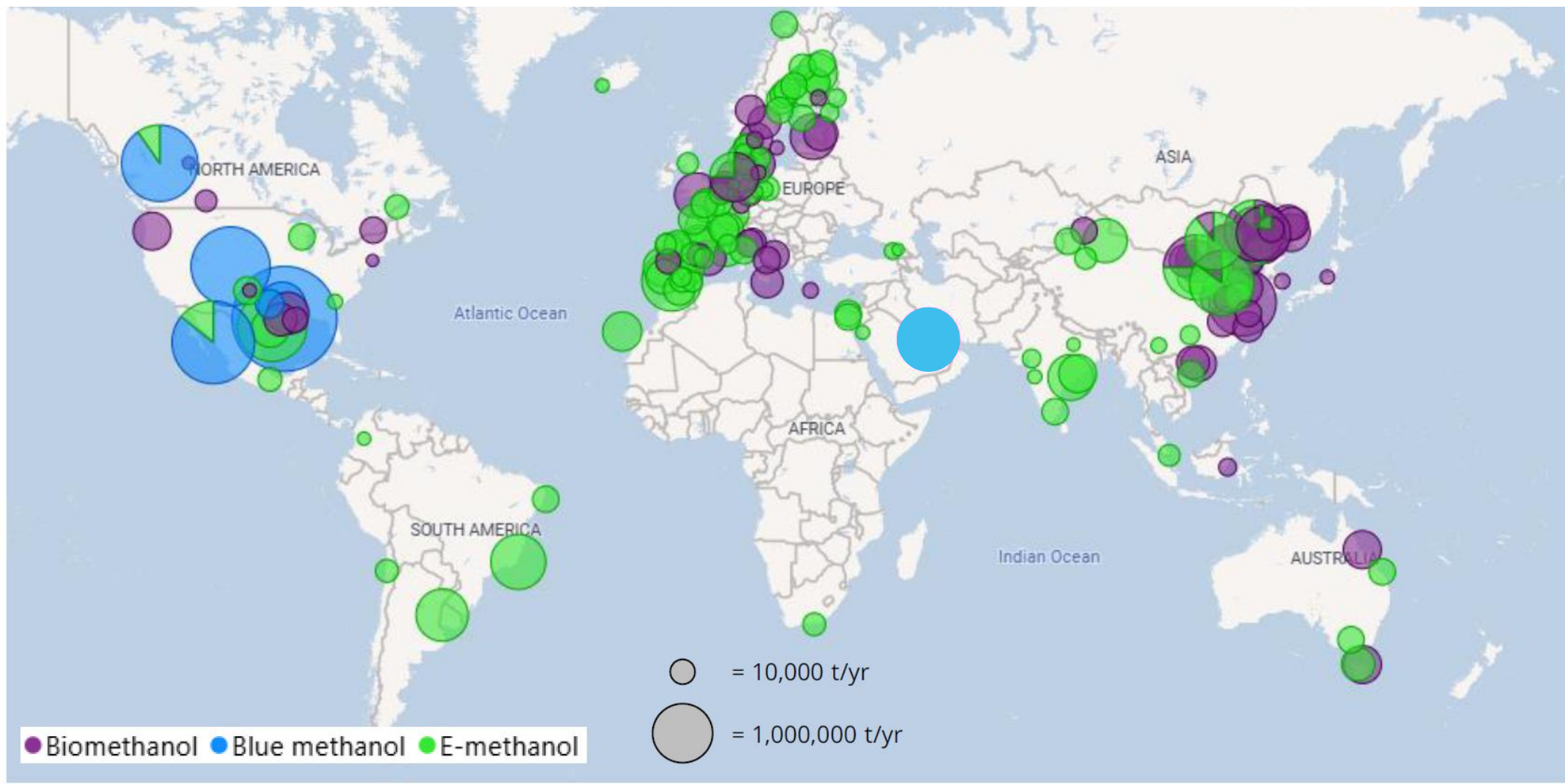
Green methanol bunkering volume by major ports, 2023-25

Unit: metric tonne



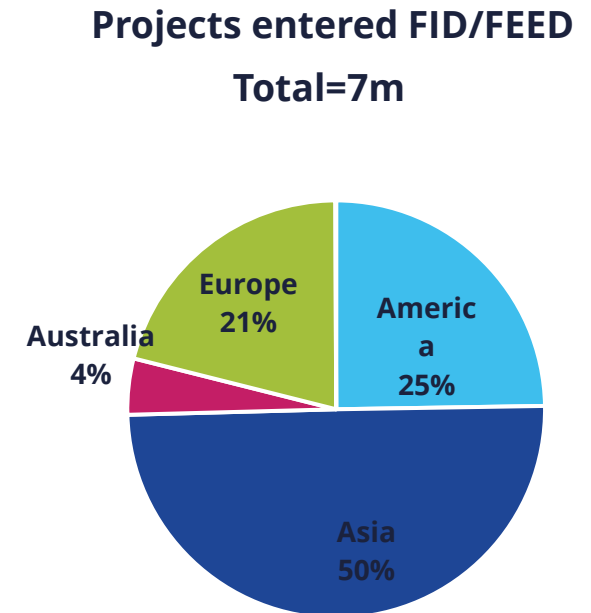
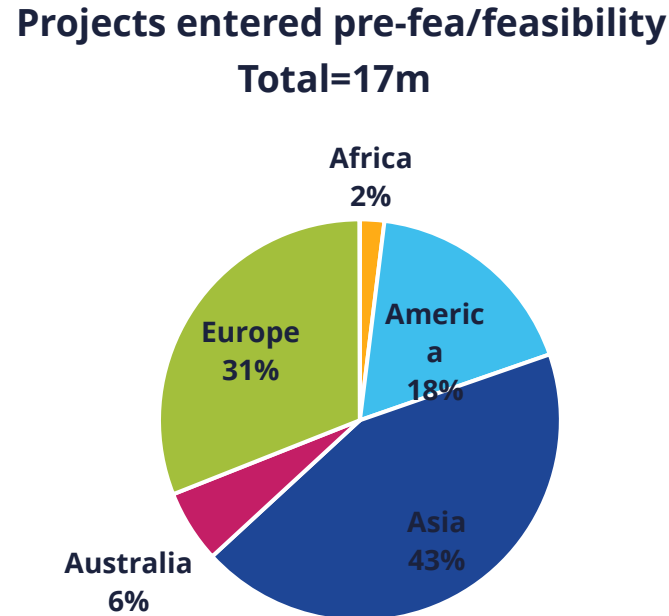
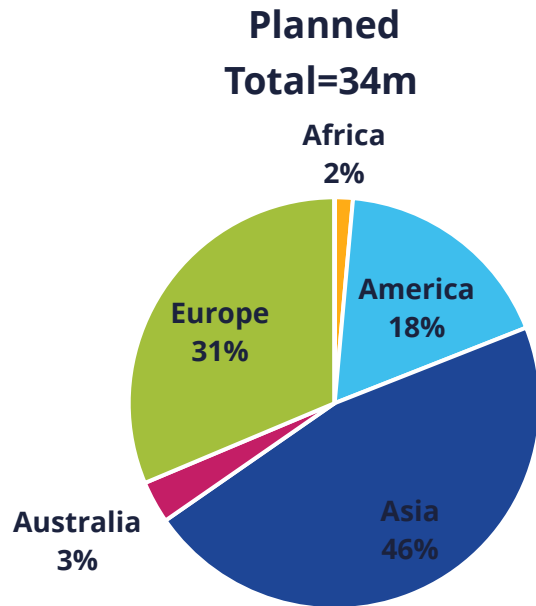
- Green methanol bunkering at Rotterdam port surged from 750t in 2023 to nearly 12,000t in Jan-Sep 2025
- China main ports' green methanol bunkering volume rose sharply from 500t in 2024 to 8,300t by end-Sep and likely to reach 15,000t in 2025
- Singapore has not started commercial bunkering, because of factors such as bunkering license, policy, supply, demand and prices

# LCM supply: China, Europe and Americas lead investments



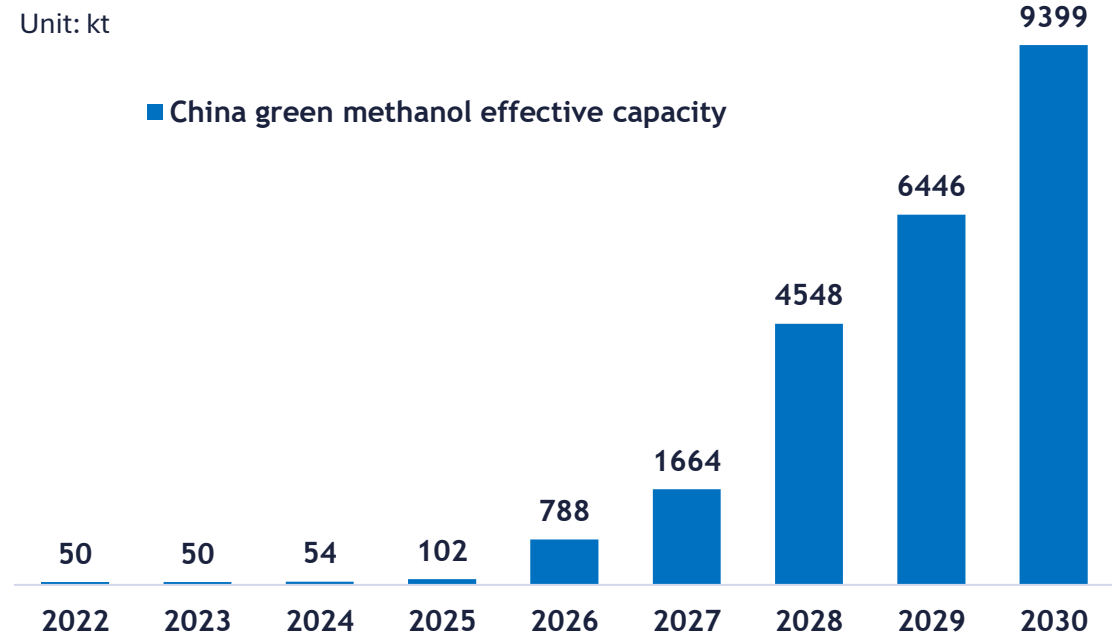
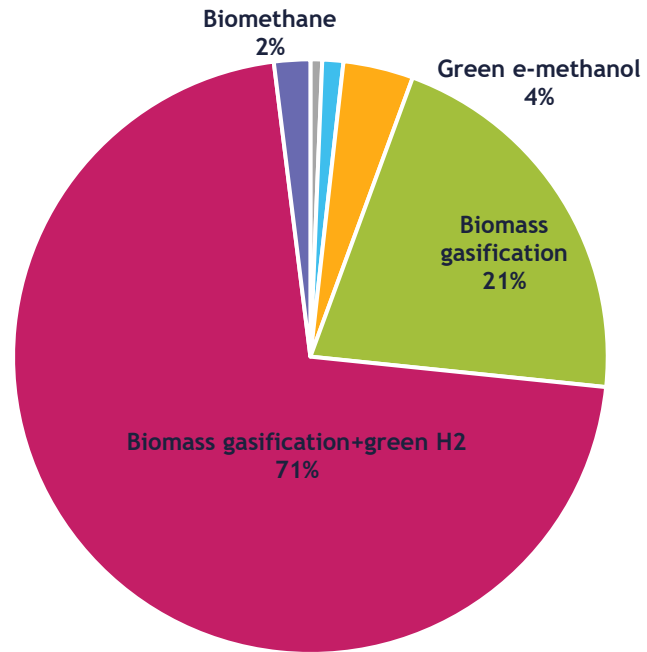
# Global green methanol supply (less blue): Nearly half in China

## Global green methanol capacities by region, up to 2030



- Argus tracks total 210 global green methanol projects (incl. e-, bio-, hybrid, excl. 12mn t blue), and totaling 34mn t. About 11mn t was suspended or cancelled in the past year.
- Nearly half of the projects are in Asia (mainly China); 52% entered feasibility/pre-feasibility stage, only 21% entered FID/FEED stage

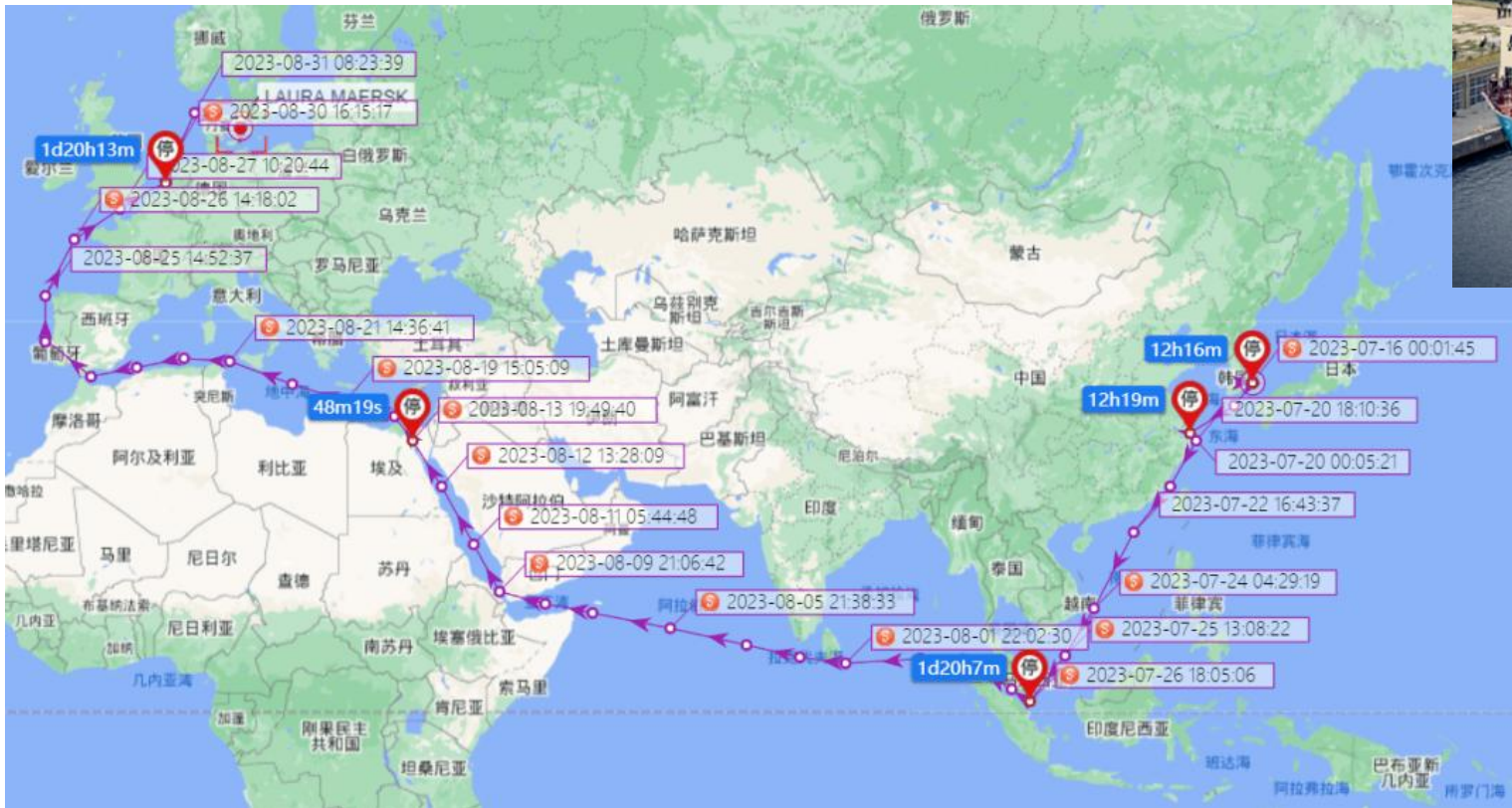
# China projects by production pathway: hybrid is leading



- Among the 15.5mn t Chinese projects that Argus tracks,
  - Hybrid totaled 11mn t (71pc of total), and pure biomass gasification totaled 3.3mn t (21pc of total);
  - Biogas-based projects, limited by feedstocks, only account for 2pc; E-methanol, also because of feedstock restrictions, total planned capacity is only 600kta or 4pc of total

# 2023: Asia bunkered a total of 1,300t biomethanol

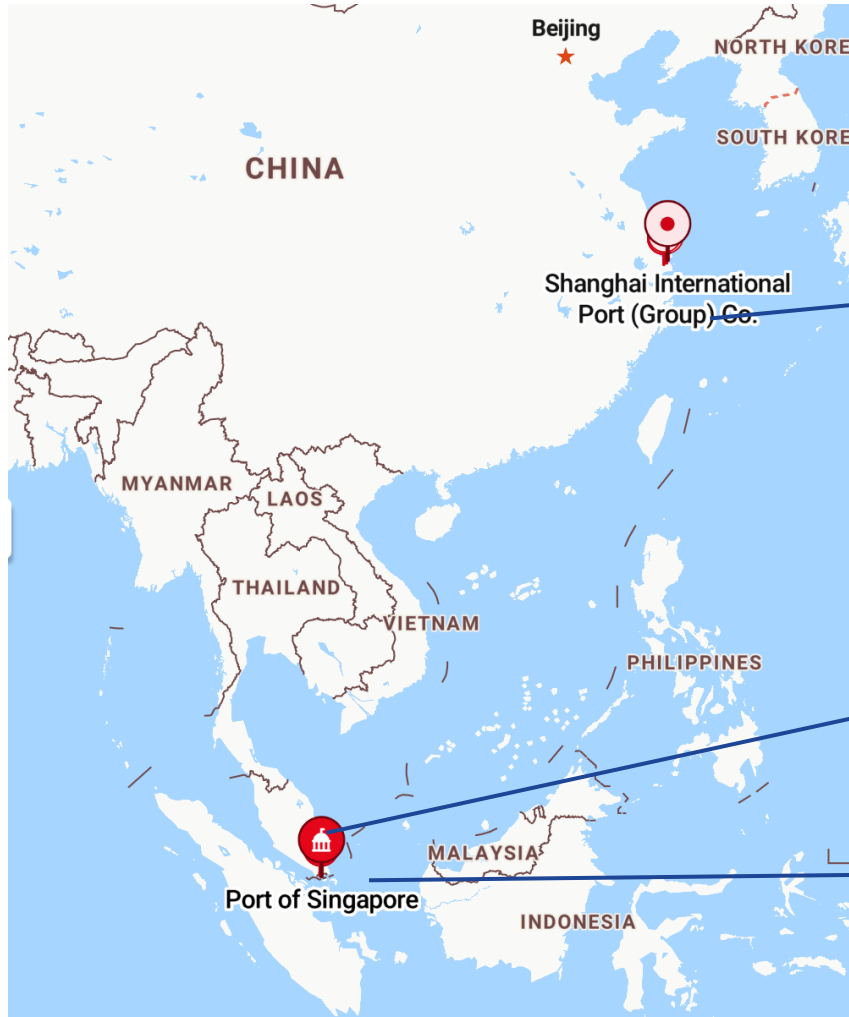
Laura Maersk used green methanol as fuel during her 21,500km Asia-Europe voyages.



**Bunkered 4 times, total 2,050t**  
Supplier: US OCI

- 16 Jul, Ulsan Korea, 1000t
- 26 Jul, Singapore, 300t
- 17 Aug, East Port of Said, Egypt, 500t
- 29 Aug, Rotterdam, 250t

# 2024: Asia bunkered a total 1,068t of biomethanol



1

## Shanghai Port:

10 Apr, 500t, S-S, SIPG to Astrid Maersk, Supper: OCI

\*China's first green methanol bunkering practise



2

## Singapore Port:

May, 300t, Global Energy, to X-Press Feeders, Supper: OCI

3

## Singapore Port:

24 May, 1340t, 20% blended with biomethanol, S-S, Global Energy to Proman Stena Bulk, Supplier: Towngas

# 2025: Asia bunkered 9,172t biomethanol as of now



No.	Date	Port/Dock	Qty, t	Mode	Shipowner
1	30-Mar	Shanghai	2,902	S-S	HMM
2	5-May	Shanghai	3,110	S-S	HMM
3	2-Jul	Hainan Yangpu	200	T-S	COSCO
4	11-Jul	Shanghai	1,000	S-S	COSCO
5	15-Jul	Dalian	500	S-S	COSCO
6	25-Jul	Jiangsu Haimen	100	T-S	CM
7	22-Sep	Tianjin	300	T-S	CM
8	29-Sep	Ningbo Zhoushan	230	T-S	COSCO
9	28-Sep	Ulsan, Korea	830	S-S	NYK

# | 2025: To be continued...



No.	Date	Port/Dock	Qty, t	Mode	Shipowner
10	4-5 Nov 25	Shanghai	3,000	S-S	Evergreen
11	Nov-Dec 25	Shanghai	3,000+	S-S	CMA CGM
12	Dec 25	Shenzhen	unknown	S-S	In discussions
<b>2025 Asia Total</b>			<b>&gt; 15,000t</b>		
	Jan 26	Shanghai	3,000	S-S	Evergreen
	Q1 26	Qingdao	Unknown	S-S	unknown
	Q1 26	Hong Kong	Unknown	S-S	unknown
	Q2 26	Ningbo Zhoushan	Unknown	S-S	unknown
	Q1 26	Singapore	Unknown	S-S	unknown

# Argus launches China biomethanol assessments

## fob north China

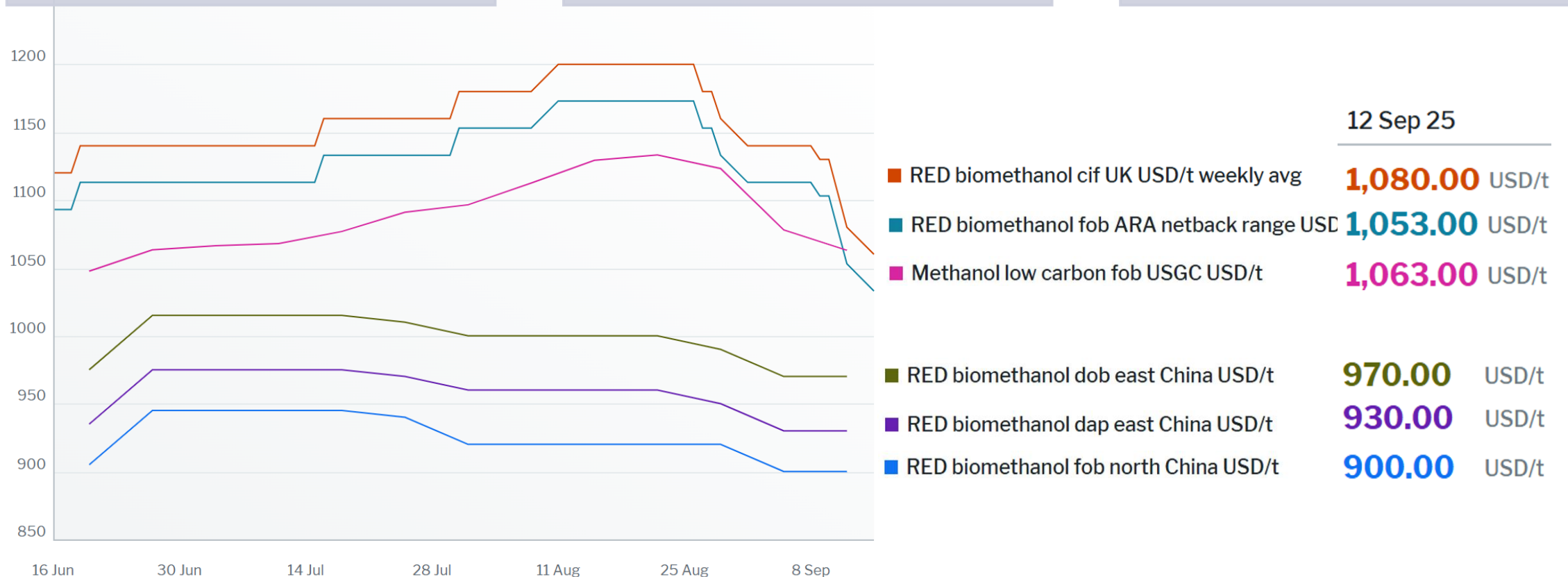
- The region is a key biomethanol production hub. Main ports in north China (Tianjin, Dalian, Yingkou) supply materials to other Chinese ports or export to other countries.

## dap east China

- The region is a main consumption and bunkering center. The dap east China reflects the cost of obtaining biomethanol at port.

## dob east China

- East China, particularly Shanghai port, is leading China's biomethanol bunkering activity. The dob east China is the cost ship owner paid for bunkering biomethanol.



# Argus China biomethanol assessment methodology

- **Assessment basis:** preliminary based on spot market transactions and discussions, and also take into consideration of other factors, such as alternative fuel prices, macro, policy etc.

## RED biomethanol fob north China

**Quality:** IMPCA specification

**Currency/unit:** US dollars/tonne

**Timing:** loading up to 60 days forward from the date of assessment

**Location:** including Yingkou, Dalian and Tianjin ports

**Size:** 3,000-10,000t

**Feedstock:** biomass compliant with RED Annex IX Part A

**Certification:** material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

**GHG savings:** minimum 70pc greenhouse gas (GHG) savings

based on a fossil fuel comparator of 94g CO<sub>2</sub> equivalent/MJ

**Assessment timing:** weekly, Monday to 4:30pm Singapore time on Friday

- **Assessment frequency:** assessed every Friday for a tradable range during that week
- **Assessment unit:** US dollar/tonne, VAT excluded

## RED biomethanol dap east China

**Quality:** IMPCA specification

**VAT:** excluding VAT

**Currency/unit:** US dollars/tonne

**Timing:** delivery up to 60 days forward from the date of assessment

**Location:** including Shanghai and Zhoushan ports

**Size:** 1,000-5,000t

**Feedstock:** biomass compliant with RED Annex IX Part A

**Certification:** material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

**GHG savings:** minimum 65pc greenhouse gas (GHG) savings based on a fossil fuel comparator of 94g CO<sub>2</sub> equivalent/MJ

**Assessment timing:** weekly, Monday to 4:30pm Singapore time on Friday

## RED biomethanol dob east China

Calculated by adding storage, port, bunkering and other fees to the dap China price. Costs are reviewed at least quarterly.

**Currency/unit:** US dollars/tonne

# Ammonia: the road ahead

# The big themes in the ammonia market



**Middle East plant outages, spot availability limited**



**Good monsoon season driving fertilizer and ammonia demand**



**Gas issues persist  
30% gas cuts for 10 days  
from 9 Nov**



**New capacities  
GCA's 1.3mn t plant  
Woodside's Beaumont  
1.1mn t plant**

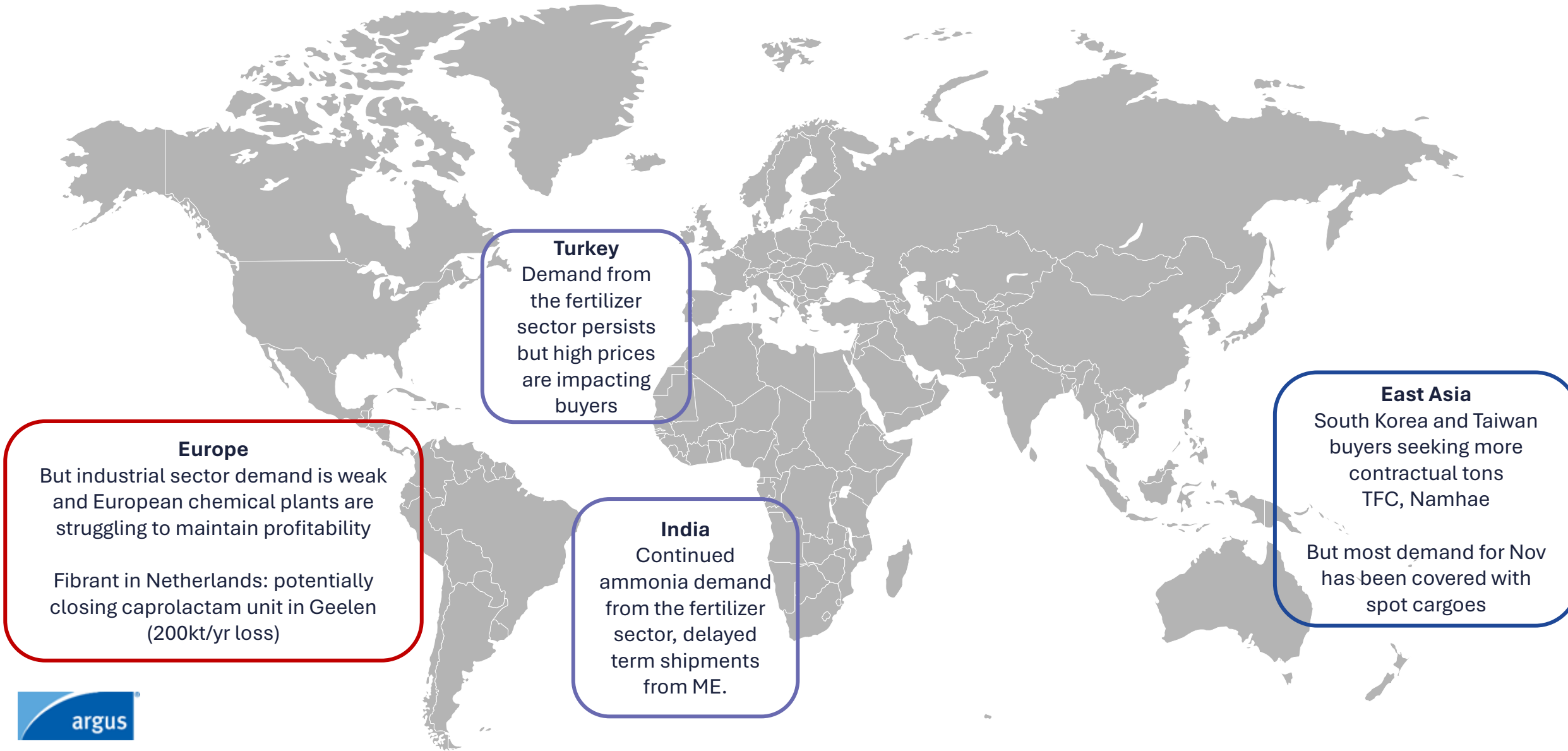


**Exports increasingly viable on limited supply in SEA and ME**



**EU implementing CBAM mechanism from Jan 2026**

# Demand remains robust for fertilizers



## Europe

But industrial sector demand is weak and European chemical plants are struggling to maintain profitability

Fibrant in Netherlands: potentially closing caprolactam unit in Geelen (200kt/yr loss)

## Turkey

Demand from the fertilizer sector persists but high prices are impacting buyers

## India

Continued ammonia demand from the fertilizer sector, delayed term shipments from ME.

## East Asia

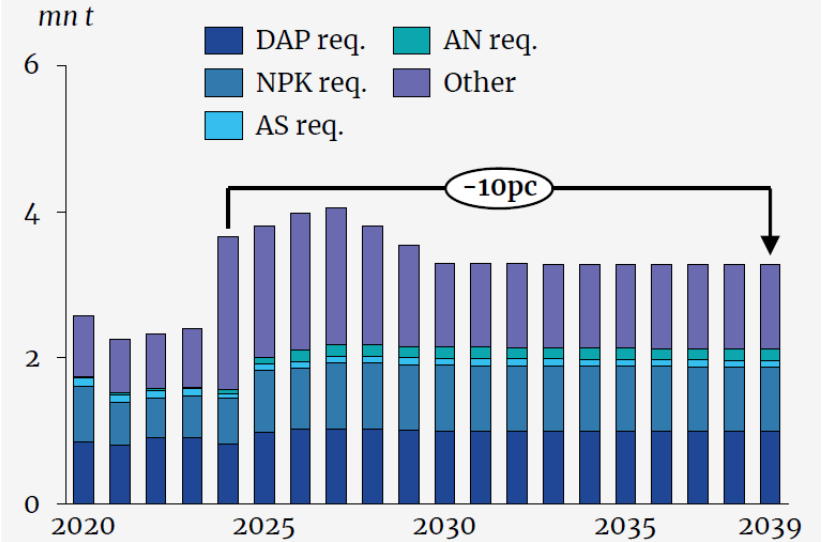
South Korea and Taiwan buyers seeking more contractual tons TFC, Namhae

But most demand for Nov has been covered with spot cargoes

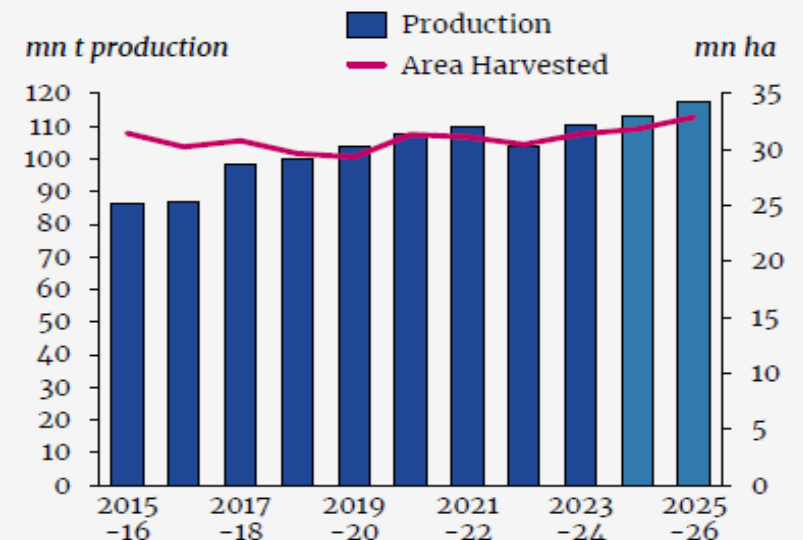
# In the slightly longer term; Indian ammonia demand to continue firming

- India's merchant ammonia consumption projected to reach 3.5mn t in 2025, driven by strong downstream requirements to supply DAP for increasing wheat/ rice production, favourable monsoons and government subsidies.
- Uptick to strengthen further in 2026, with large-scale fertilizer projects like CIL's 750kt/yr NPK/DAP complex beginning operations.
- India imports ~ 160,000t/ mth of ammonia.
- Merchant ammonia consumption in India reached 3.4mn t in 2024. Ammphos production and agriculture growth to support ammonia demand.
- Will absorb ME supply availability/ Iranian product

India ammonia demand growth, 2020-39



3. Indian wheat production is supporting downstream ammonia demand in 2025

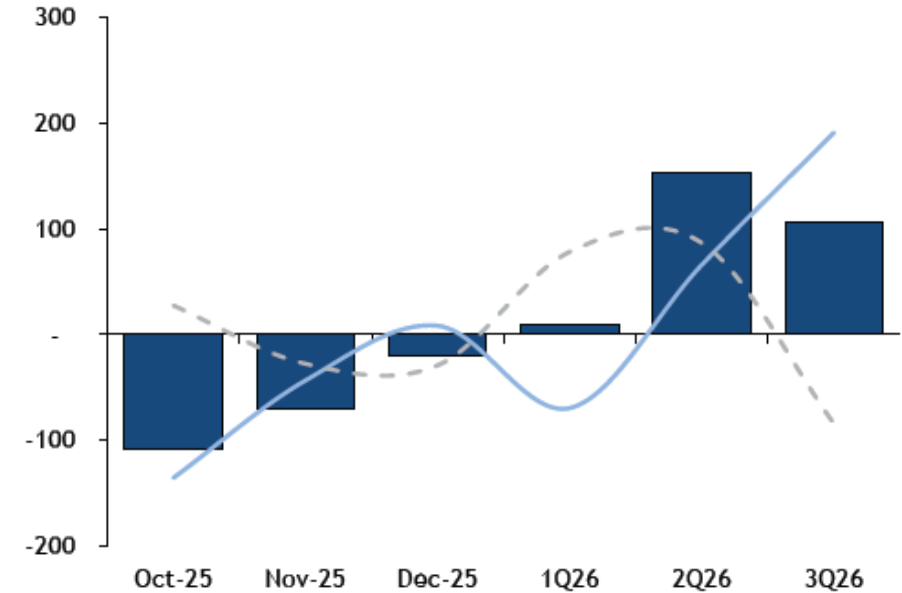


# Short-term outlook

- Tight supply-demand balance following outages in the Middle East, Trinidad.
- More gas curtailments in Trinidad potentially expected
- Limited supply from Algeria
- Ongoing delays to the startup of GCA’s ammonia plant, but output expected by end 2025
- Qatar Energy to commission 900kt/yr Qafco 7 in April 2026
- Global merchant capacity at start of 2026 will be 1.6mn t/yr higher than in early 2025.

Global balance forecast

'000t



- Argus Consulting

Trade balance	Oct-25	Nov-25	Dec-25	1Q26	2Q26	3Q26
Export total	_* 1,456	_* 1,508	_* 1,496	_* 4,731	_* 4,864	_* 4,952
Import total	_* 1,564	_* 1,579	_* 1,516	_* 4,722	_* 4,711	_* 4,845
West of Suez balance	_* 136	_* 43		_* 70		
East of Suez balance		_* 28	_* 29			_* 85
<b>Global balance</b>	<b>_* 108</b>	<b>_* 71</b>	<b>_* 21</b>			

# Different regulatory frameworks are driving interest in clean ammonia...but many dependent on consistent and stable government support to cover costs

Implications to clean ammonia demand in Europe across all sectors

- EU Green Deal / Fit for 55
- REPower EU
- ETS (Emissions Trading System) >> CBAM
- FuelEU Maritime
- RED (Renewable Energy Directive)

- Japan, Korea co-firing tenders
- IMO emissions reduction targets
- IRA, 45Q, 45V, 45Z
- Low-Carbon Hydrogen Auctions (H2Global)
- National Hydrogen Strategies & Roadmaps
  - Japan
  - Morocco
  - Trinidad
  - Germany
  - Spain
  - Many other

Implications for power generation uses

Implications to marine fuel uptake

Implications to clean ammonia supply

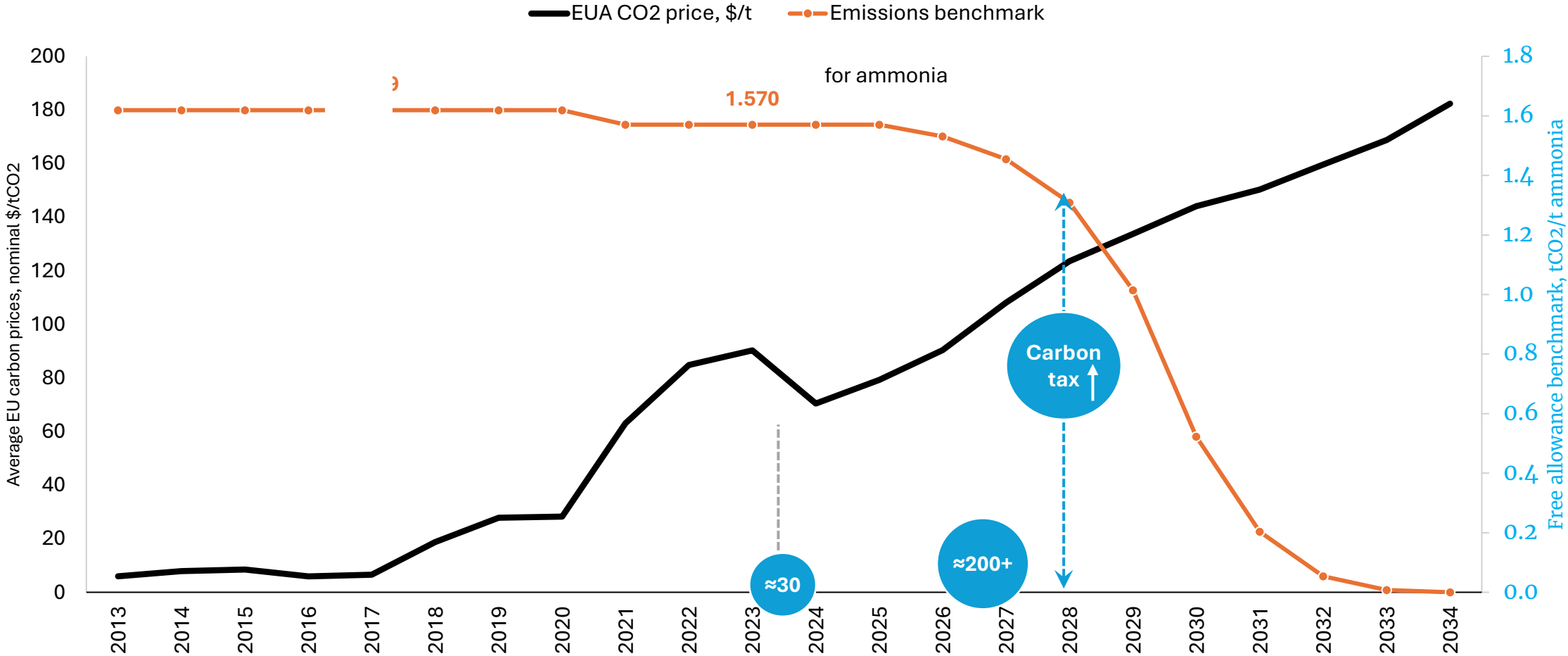
Developing clean ammonia market/trading

Differentiated support to the clean NH3/H2 value chain

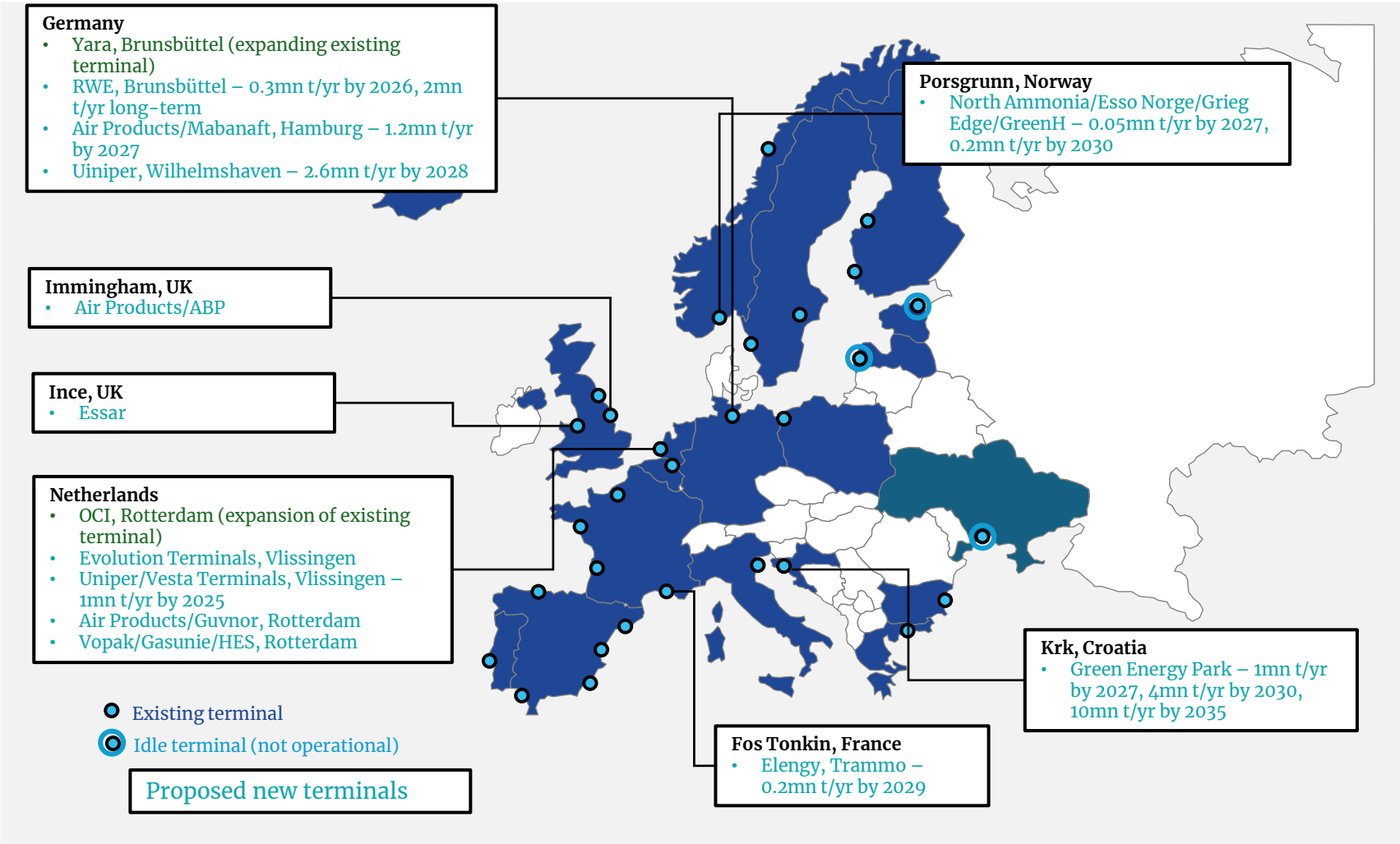


# Positive signs: CBAM in Europe – starting in 2026 – will be the first mandatory carbon scheme that applies directly to ammonia (and H2)

Phasing out of EUA & outlook for CO<sub>2</sub> prices in Europe



# Increasing investments in European seaborne ammonia infrastructure as a result of CBAM, other policies



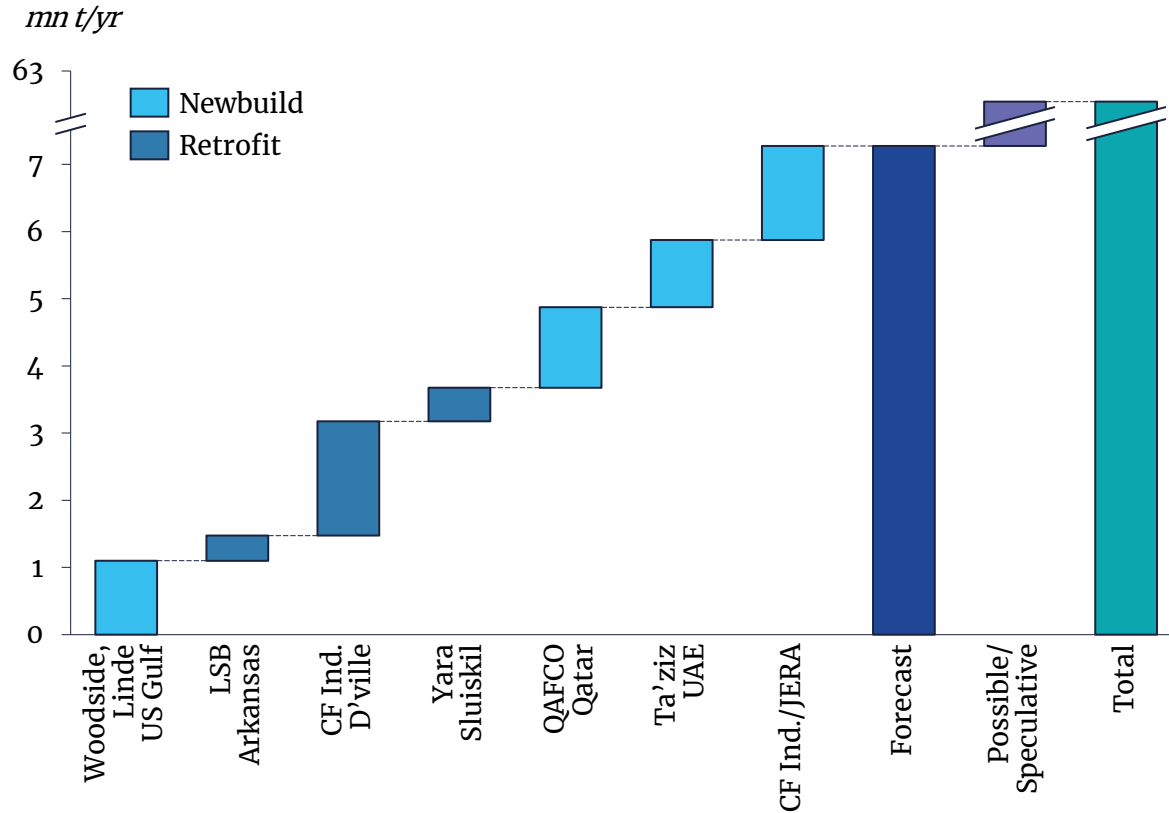
• EU imports about 4.5mn t of ammonia (2025)



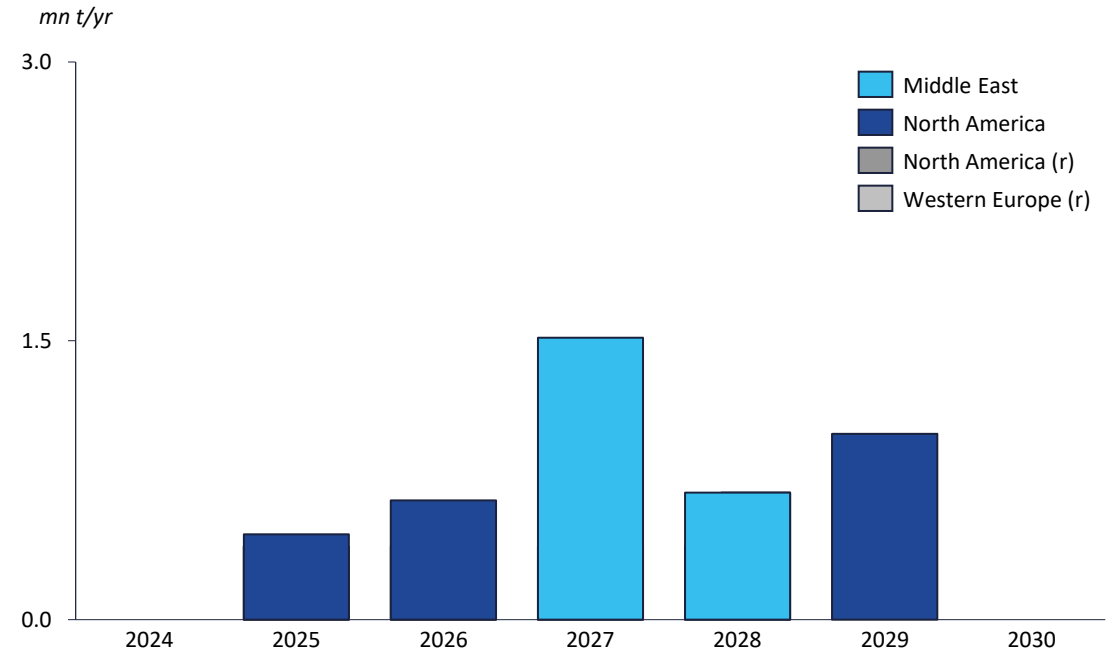
• Expected to increase to 6mn t+ from 2030 just for traditional uses as domestic ammonia production declines (replaced by lower cost/lower carbon imports)

# Blue ammonia supply forecast- concentrated in the US and Middle East

Forecast blue ammonia projects

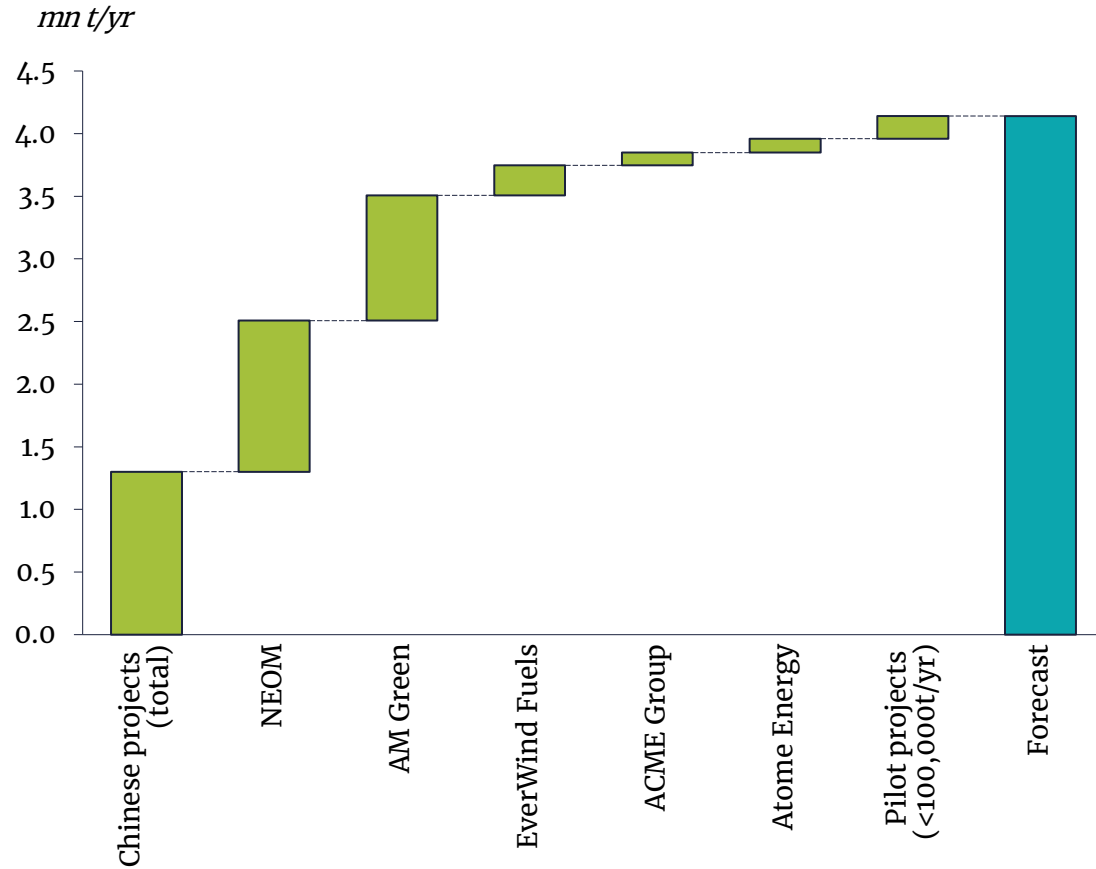


Pro-rated blue ammonia capacity forecast

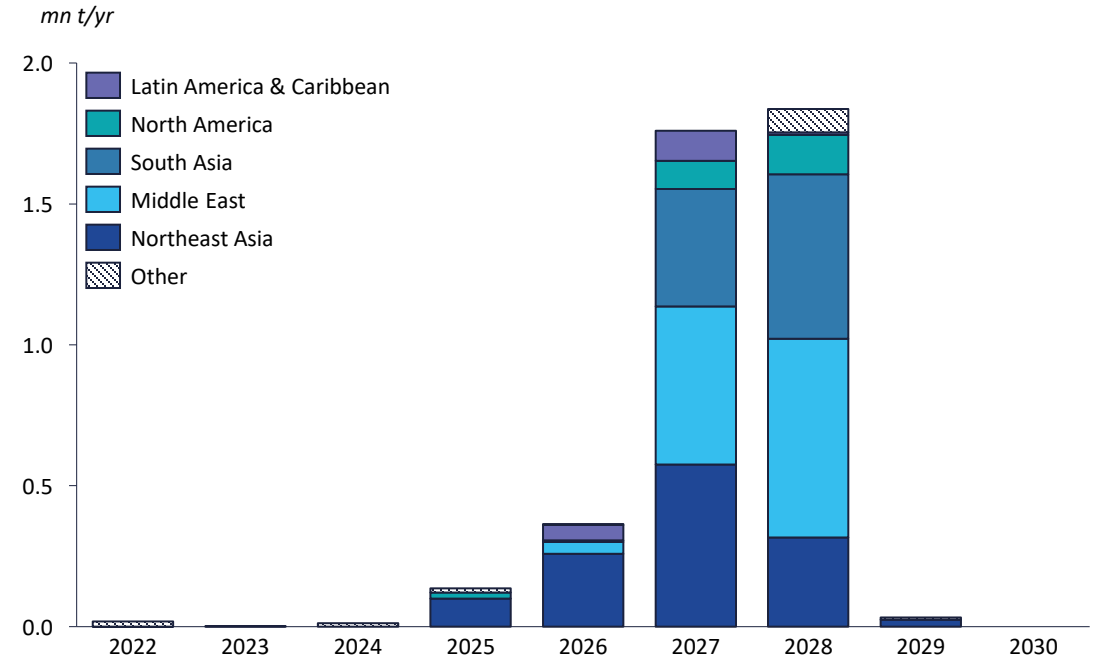


# Green ammonia supply - surge in project activity in China with government support

Forecast green ammonia projects



Pro-rated green ammonia capacity forecast



# Conclusion

# Key takeaways

- **Methanol: Fast Emergence, Real Challenges**

- Gaining traction as a drop-in fuel with growing bunkering infrastructure.
- Grey methanol is widely available but not compliant with long-term GHG targets.
- Green methanol faces cost and scalability hurdles, especially in Asia.
- Regulatory delays (e.g. IMO Net-Zero vote) have slowed subsidy momentum, notably in India.

- **Ammonia: Long-Term Potential, Short-Term Uncertainty**

- Seen as a zero-carbon fuel with high energy density.
- Safety, crew training, and retrofitting remain major barriers.
- Project pipeline is expanding, especially in China, but CCS integration and “green” certification are still unclear.
- Infrastructure and vessel readiness lag behind methanol.

- **Strategic Outlook**

- Methanol is closer to market readiness but needs green supply scale-up.
- Ammonia is technically promising but requires policy clarity and safety solutions.
- Both fuels are critical to meeting FuelEU and IMO decarbonisation goals, but timelines and economics differ.

# Thank you!



# Further information

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