

Evolution of Asian and Global Energy Markets in a Turbulent World

Prepared for 44th Japan Cooperation Center for Petroleum and Sustainable Energy (JCCP)

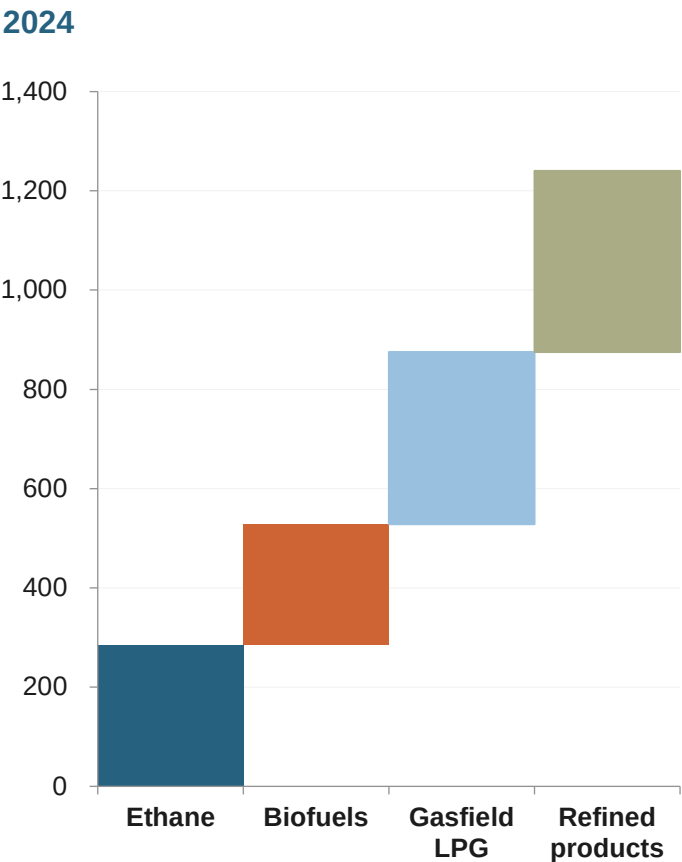
29 January 2026



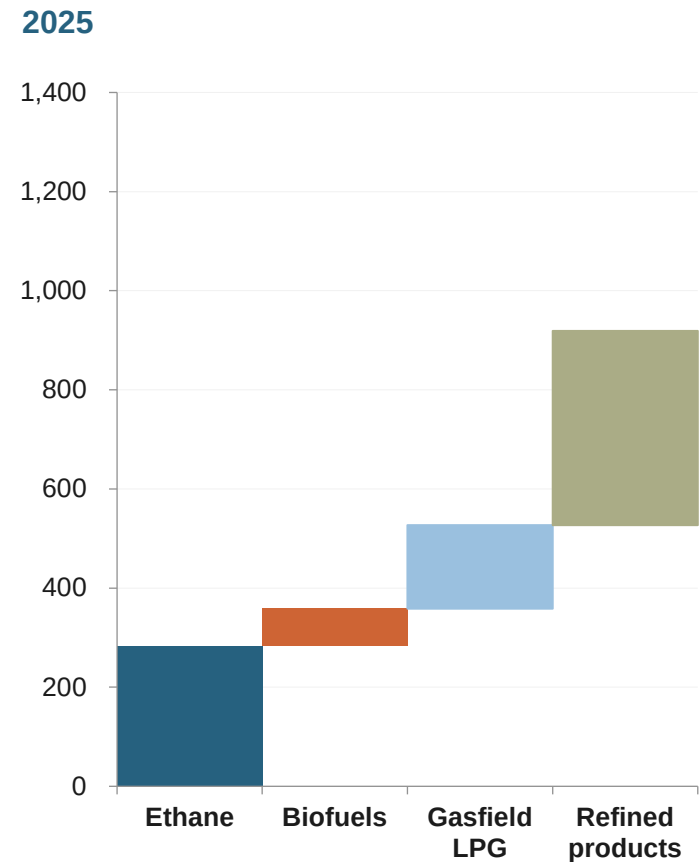
———— Critical Near-term Certainties and Uncertainties

Under the Radar: Strong demand for non-refinery products continues

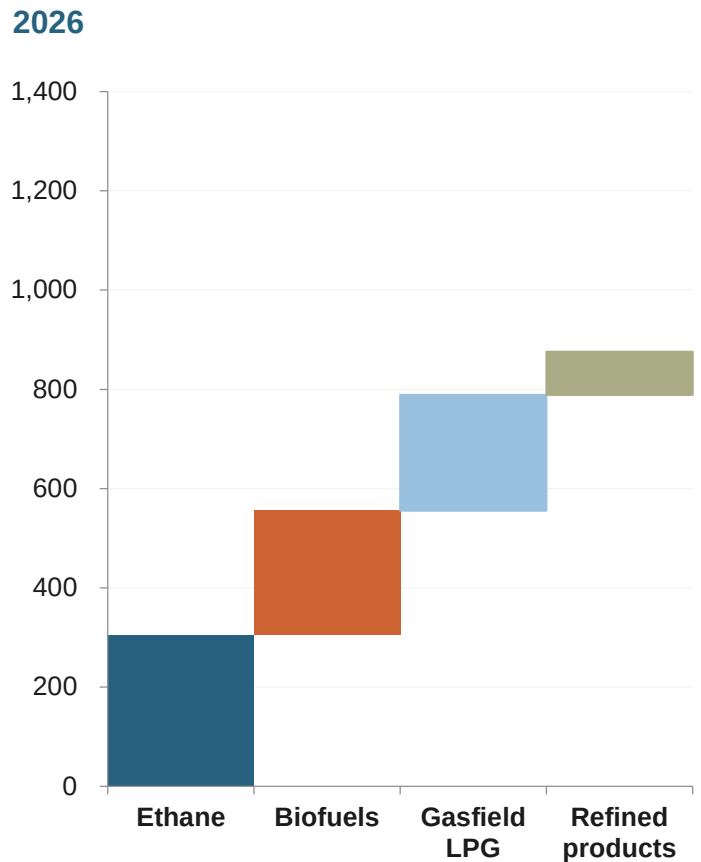
Y-o-Y Change in Total Global Oil Demand by Category, kb/d



Source: FGE NexantECA



Source: FGE NexantECA



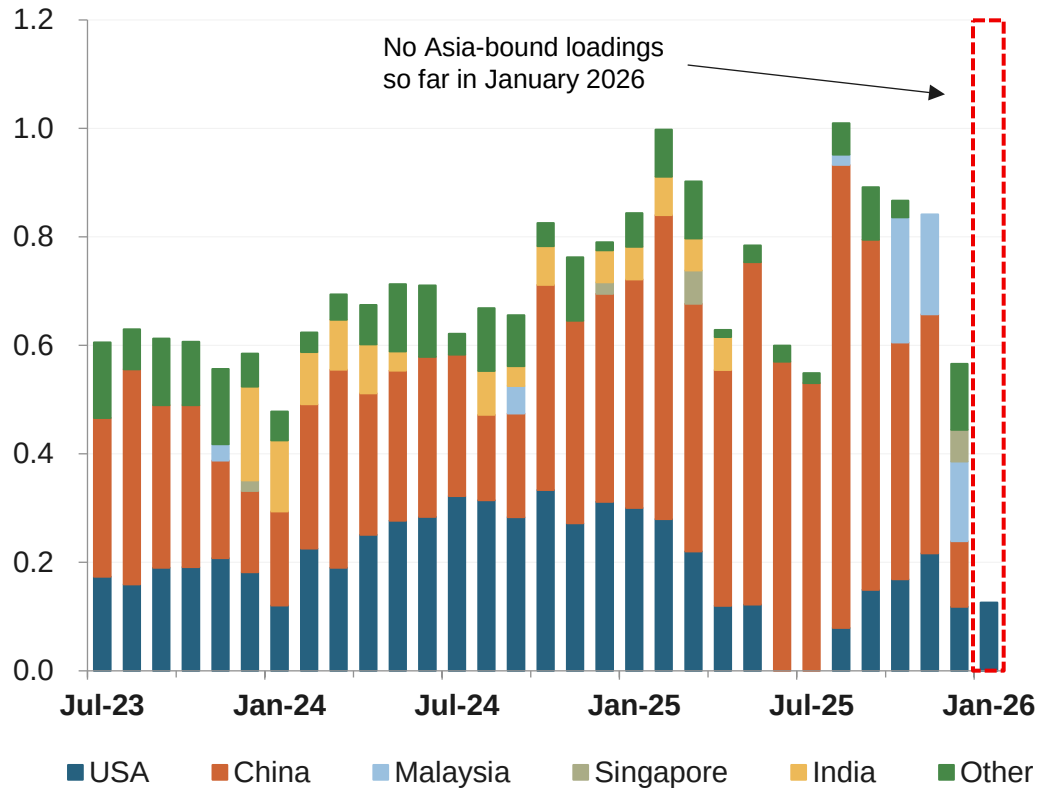
Source: FGE NexantECA

Venezuela production and crude reshuffle in the US

- 200 kb/d upside to output in 2H 2026
 - Facilitated by exports of US diluent (mostly crude/condensate; some naphtha)
 - Diluent split between crude/condensate & naphtha is a known unknown
 - Overall diluent volume will increase as Venezuelan output grows
- Venezuelan crude to be sold at market prices, meaning the US will take more and China less. Flows to the EU should also return.
 - In 2015, the US took 1 mmb/d from Venezuela. In 2025, the US took <200 kb/d
 - But we do not expect the US to gorge on Venezuelan crude as it has little need to, unless steep discounts come into play
 - USGC diesel+mogas yields have increased relative to pre-sanctions levels following heavy investment
 - Venezuelan crude flows will only increase if they are cheap enough to back out other heavy sour grades!
 - Higher availability of extra heavy sour crude should widen light-heavy crude spreads and boost coking margins

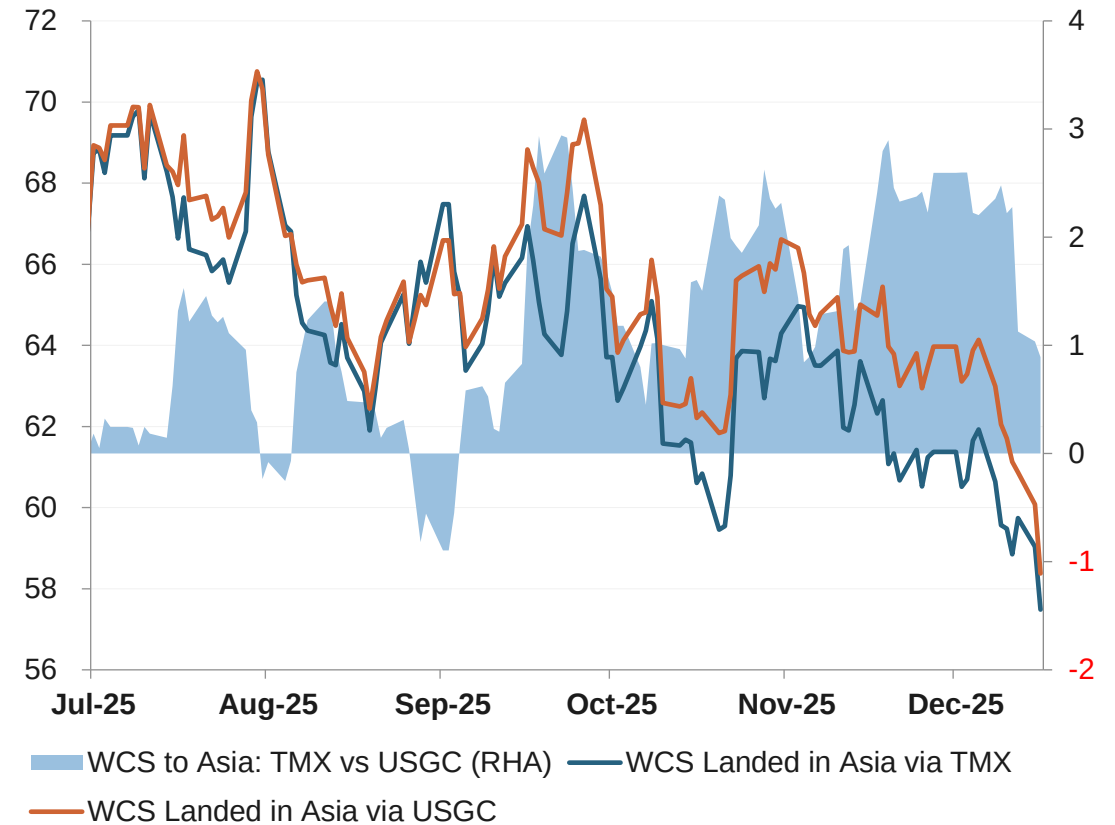
Venezuela shock reshaping crude flows

Venezuela Crude Exports by Country, mmb/d



Source: Vortexa, FGE NexantECA
Note: Jan-26 ship-tracking data may be revised

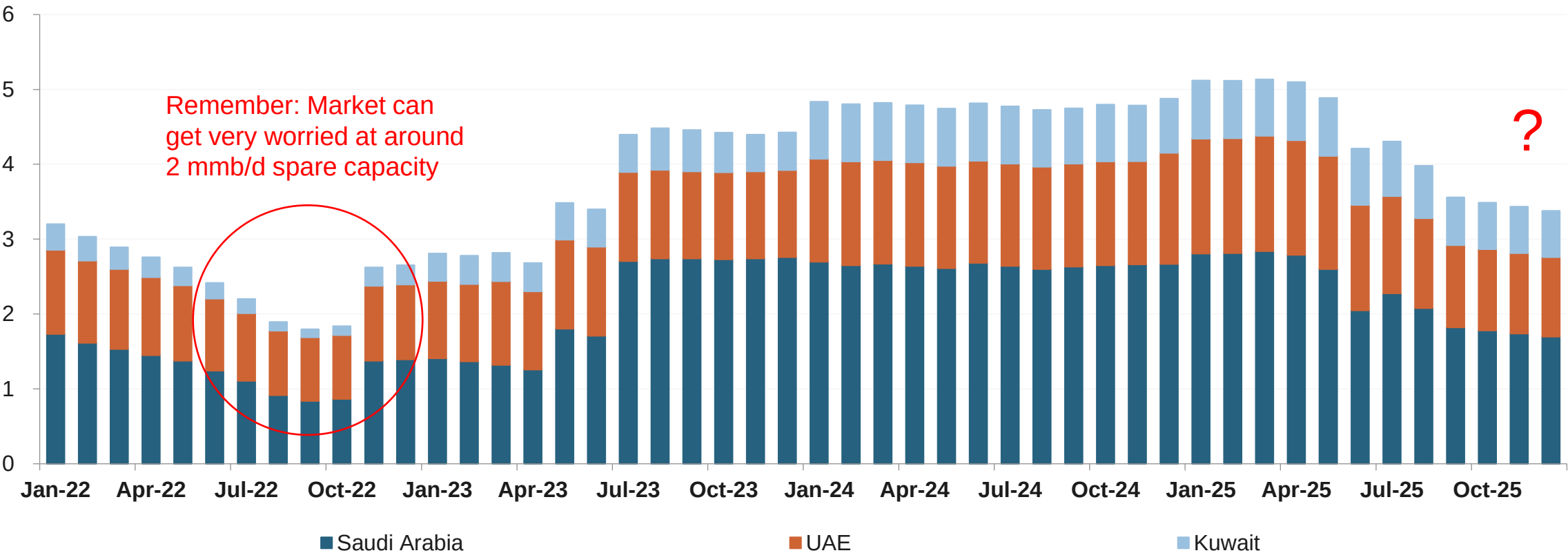
WCS Delivered to Asia, US\$/bbl



Source: Platts*, FGE NexantECA

OPEC Brings Back Barrels: What's behind its strategy?

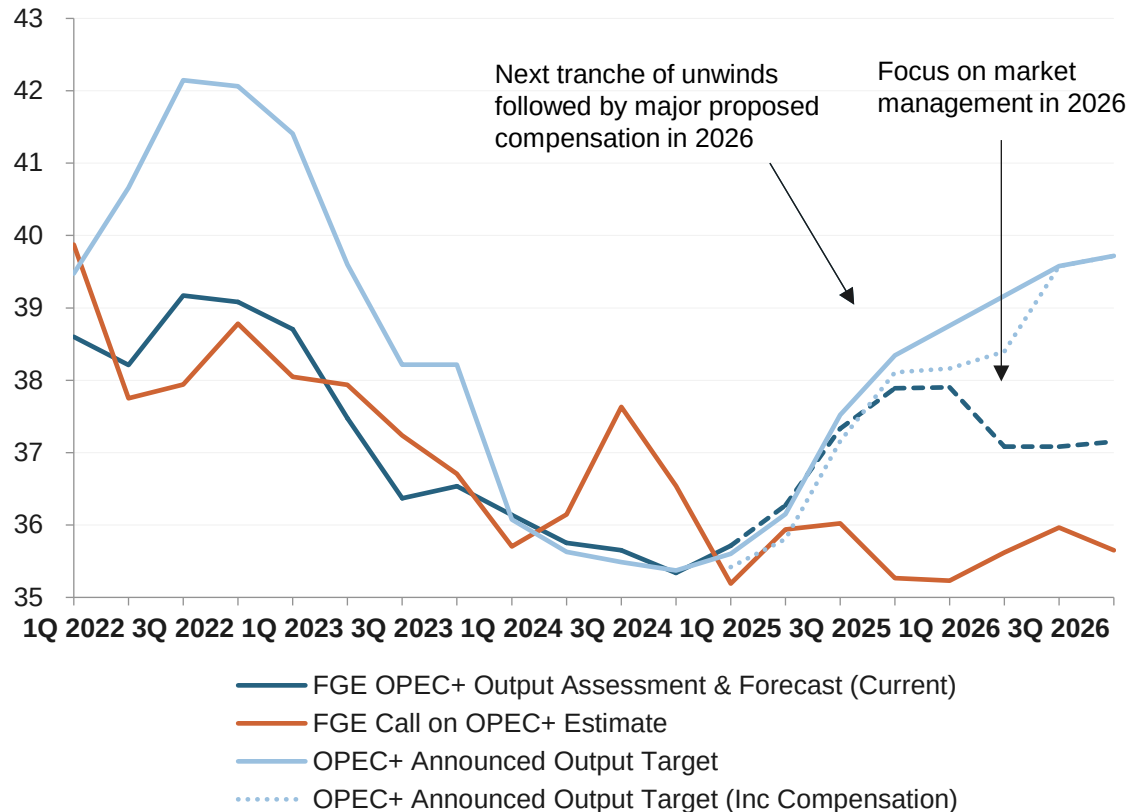
OPEC+ Core 3 Spare Capacity, mmb/d



Source: FGE NexantECA

Call on OPEC+: Cuts expected in 1H 2026

Call on OPEC+ vs. Targets and Actual Output, mmb/d

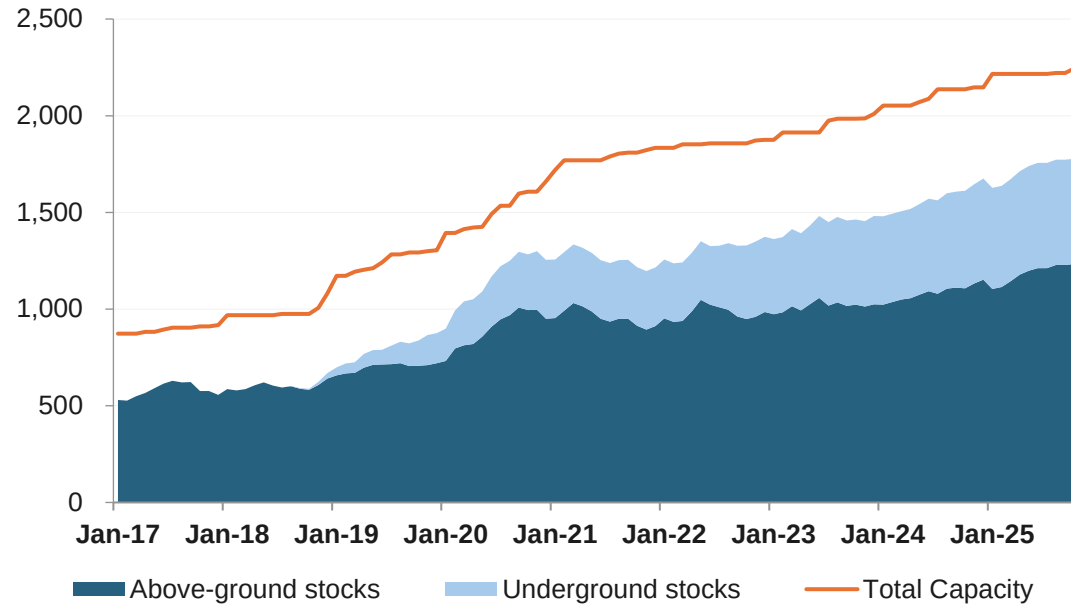


Source: FGE NexantECA

- OPEC+ has reiterated plans to pause unwinds in 1Q 2026.
- Our base case continues to show sanctioned and restricted barrels getting to the market.
- As such, with these barrels still available in the market, we see a surplus of over 2.6 mmb/d in 1Q 2026, with much of this surplus hitting on-land stocks.
- This surplus will see stocks moving around the five-year average, and Brent falling below US\$60/bbl.
- We therefore continue to see enough evidence emerging in 1Q 2026 for OPEC+ to step in and manage the surplus.
- Our base case continues to show the group deciding in March to resume output cuts in April to address the growing surplus.

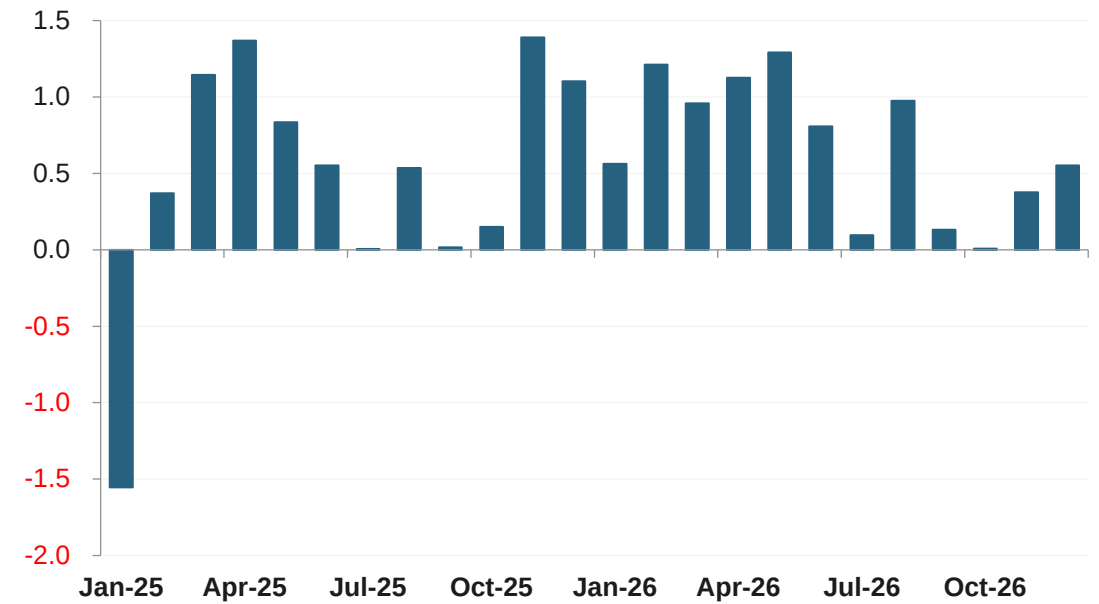
The Big Question: How much crude inventory can China build?

China Crude Stocks by Location, mmb



Source: FGE NexantECA

China Implied Crude Stockbuilds/Draws, mmb/d



Source: FGE NexantECA

- SPR Phases 1 and 2 (reported) include five underground storage sites totaling 130 mmb. They were built and filled by 2020. SPR Phase 3 (unreported) was planned as seven sites, all underground. We believe there is more underground storage than what has been announced.
- On-shore tank utilization is currently estimated at 70%. An additional 80-100 mmb of new commercial tank capacity is expected to be commissioned in 2026.
- There is more room to build! We expect ~670 kb/d of implied crude stockbuilds in 2026, up from 490 kb/d in 2025.

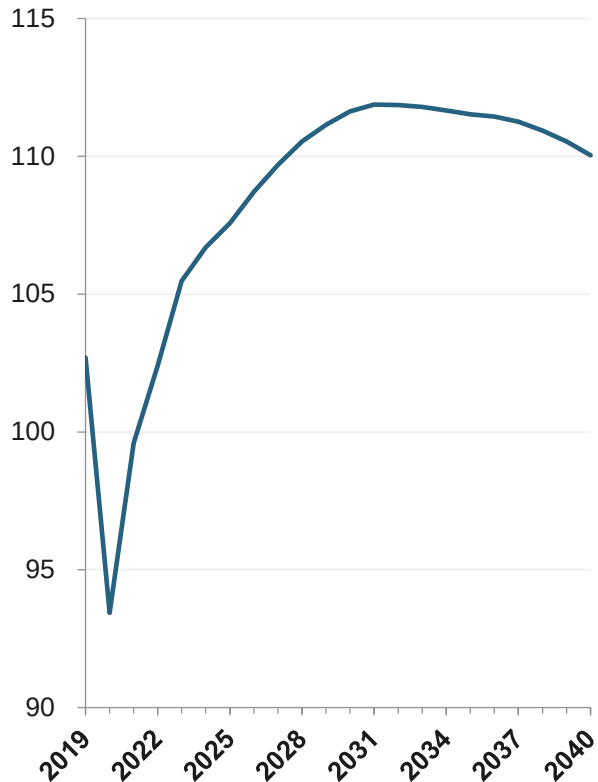
Geopolitics and Energy: Potentially huge implications...will the market care?



- Tariffs
- Price caps/import ban
- Russia/Ukraine
- Another war???

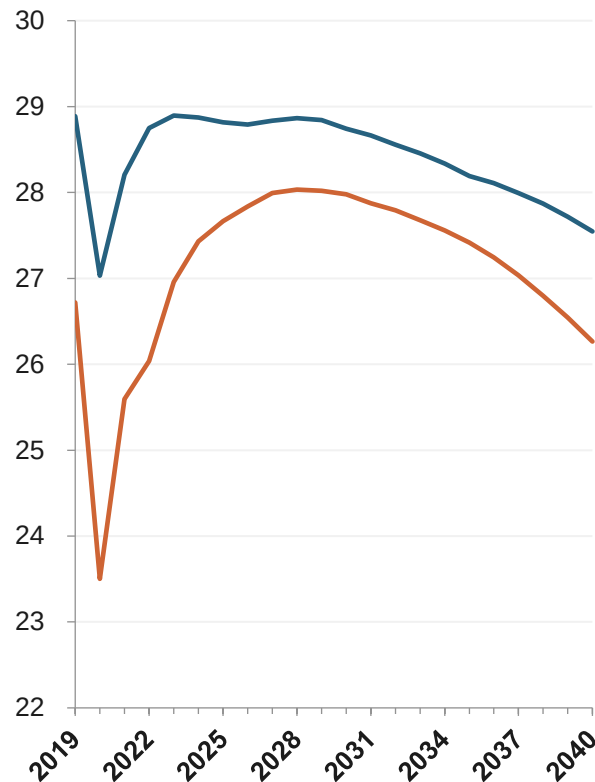
Oil demand collapse ahead?

Global Total Oil Demand, mmb/d



Source: FGE NexantECA

Global Gasoline and Diesel Demand, mmb/d



Source: FGE NexantECA

- **Long-Term Oil Demand Growth**

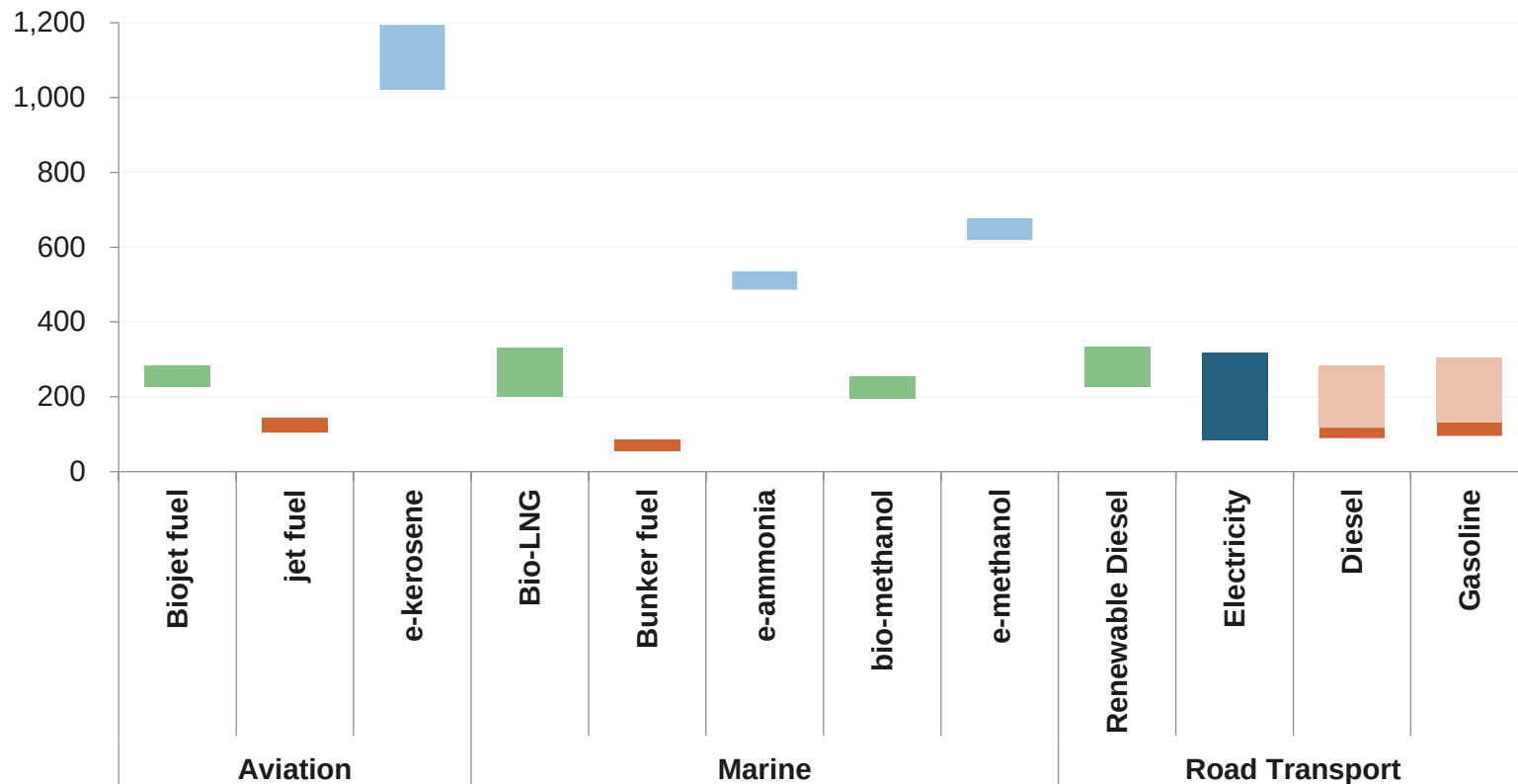
- Does oil demand peak? OPEC says no/never. IEA says yes/soon.

- **Think Plateau**

- Oil demand growth is not over! Still some 4 mmb/d of growth before global oil demand peaks in the 2030s.
- China's oil demand peaks by 2028/29, Asia's peaks by 2040.
- Bottom line is that EVs are by far the largest threat to oil demand. The impact of everything else, like SAF in air travel and methanol/ammonia in shipping, is uncertain and much further off...
- Best described as a plateau...still over 111 mmb/d of global demand in 2040 – higher than today.

Most alternatives to oil cost significantly more, thus requiring major sustained government support...can it be counted on???

Relative Costs of Transport Fuels in 2024,
US\$/barrel of oil equivalent

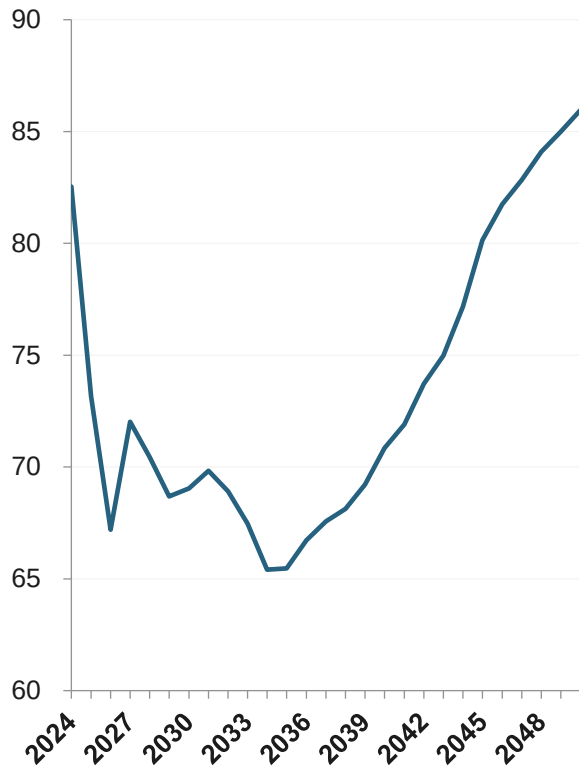


Source: FGE NexantECA

- Among the different alternatives to oil, only electricity use in road transport can compete with conventional gasoline and diesel – after considering taxes on oil products.
- Renewable diesel is expensive but can compete with conventional diesel, especially if it is subsidized and diesel is taxed.
- SAF is up to three times more expensive than conventional jet fuel.
- Bio-LNG is up to four times more costly than conventional bunker fuel.
- Hydrogen-based synthetic fuels are generally prohibitively expensive.

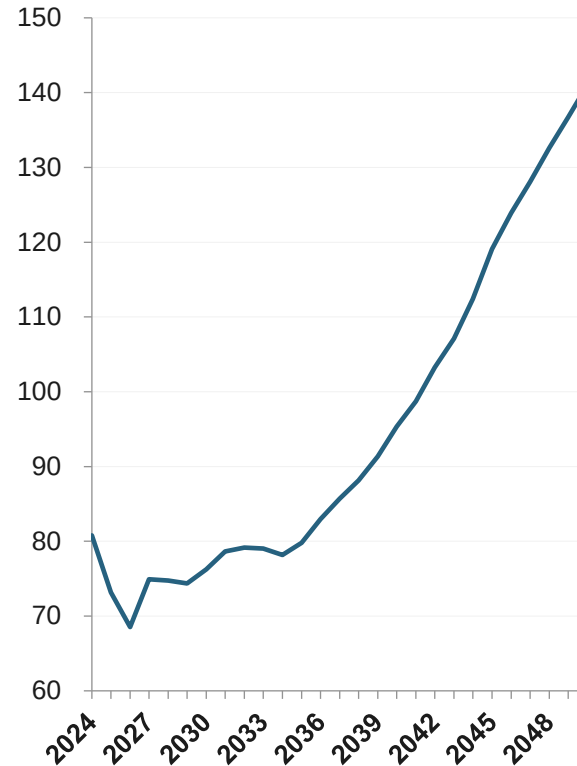
The “natural home” for oil prices is US\$70-80/bbl (inflation-adjusted)

Dated Brent Outlook (**Real**
2025), US\$/bbl



Source: FGE NexantECA

Dated Brent Outlook (**Nominal**),
US\$/bbl

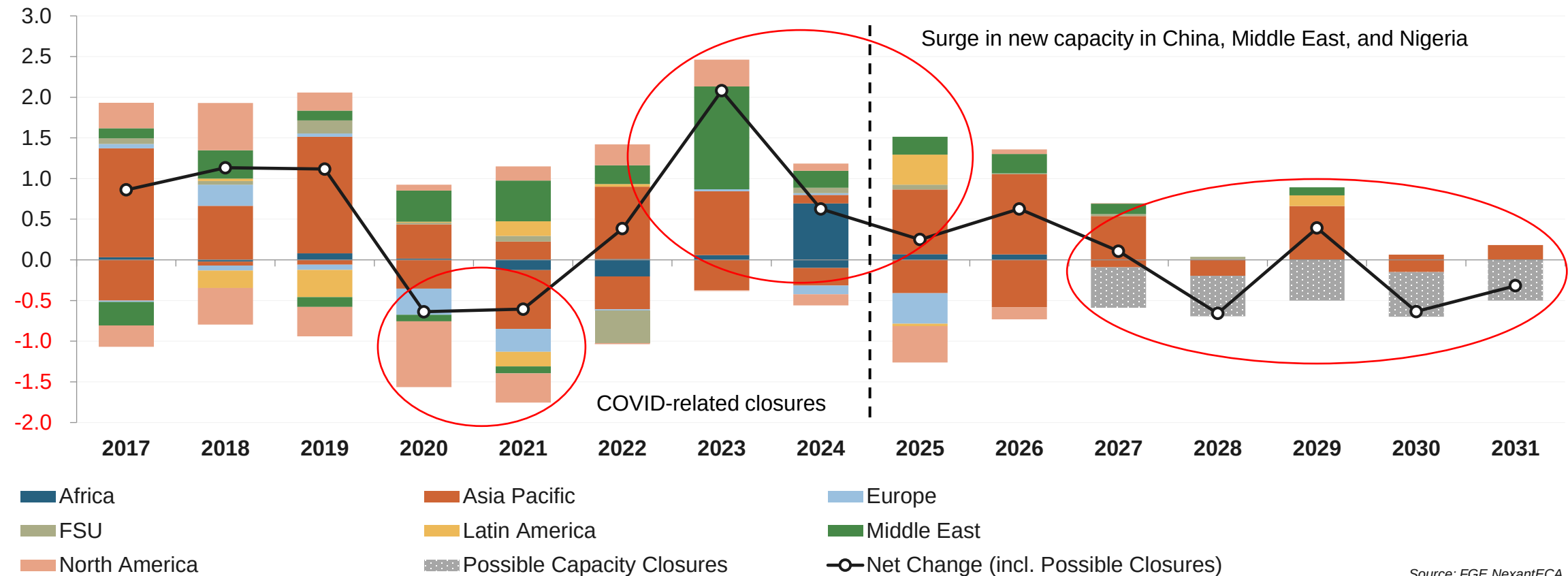


Source: FGE NexantECA

- Short-term oil prices can fluctuate widely for many reasons...sanctions worries are a recent example.
- But what price should we use for long-term planning?
- We model future supply and demand in detail, and the conclusion is remarkably consistent...
 1. If oil prices drop well below US\$70/bbl, supply slows and demand picks up, eventually creating an imbalance which is corrected by higher prices.
 2. If oil prices rise well above US\$80/bbl, the economics of upstream projects look compelling, and we eventually get too much investment. Demand also slows, creating an imbalance, and prices eventually fall.
- Oil prices will always be volatile, but the natural home for oil is US\$70-80/bbl (inflation-adjusted).

Riding the Refinery Capacity Roller Coaster: Additions offset by closures ahead

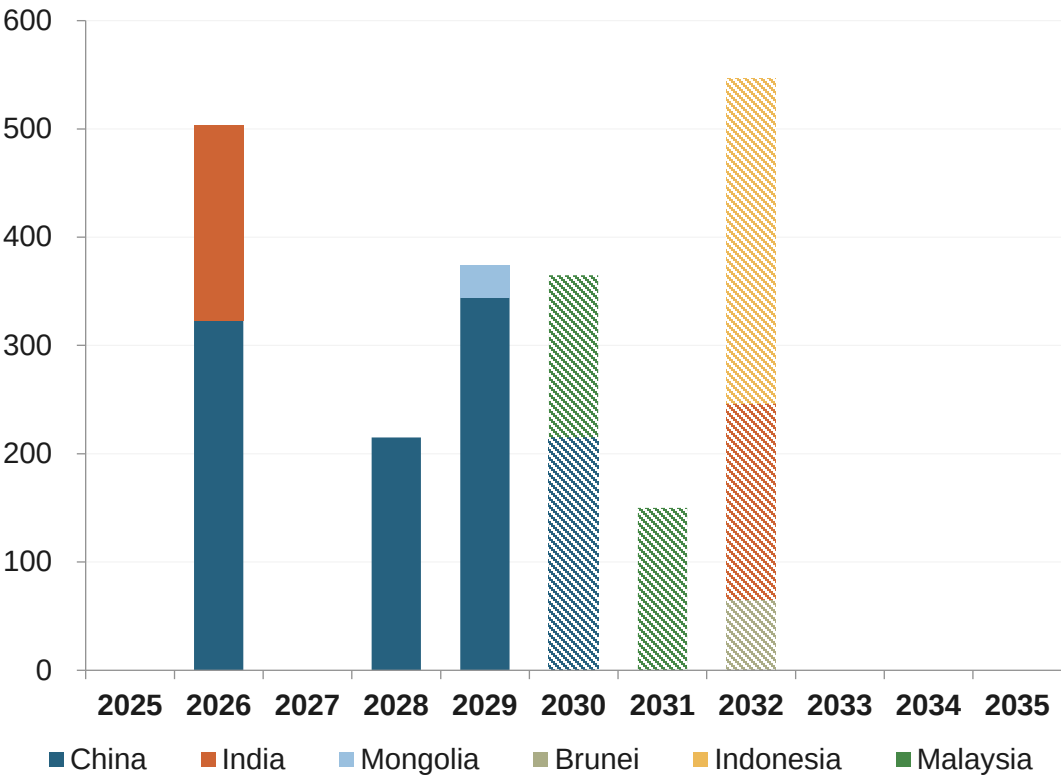
Global Refining Capacity Changes, mmb/d



Source: FGE NexantECA

Asia: China leads grassroots refinery additions, focus on petchem integration

Asia CDU Capacity Grassroots Additions, kb/d



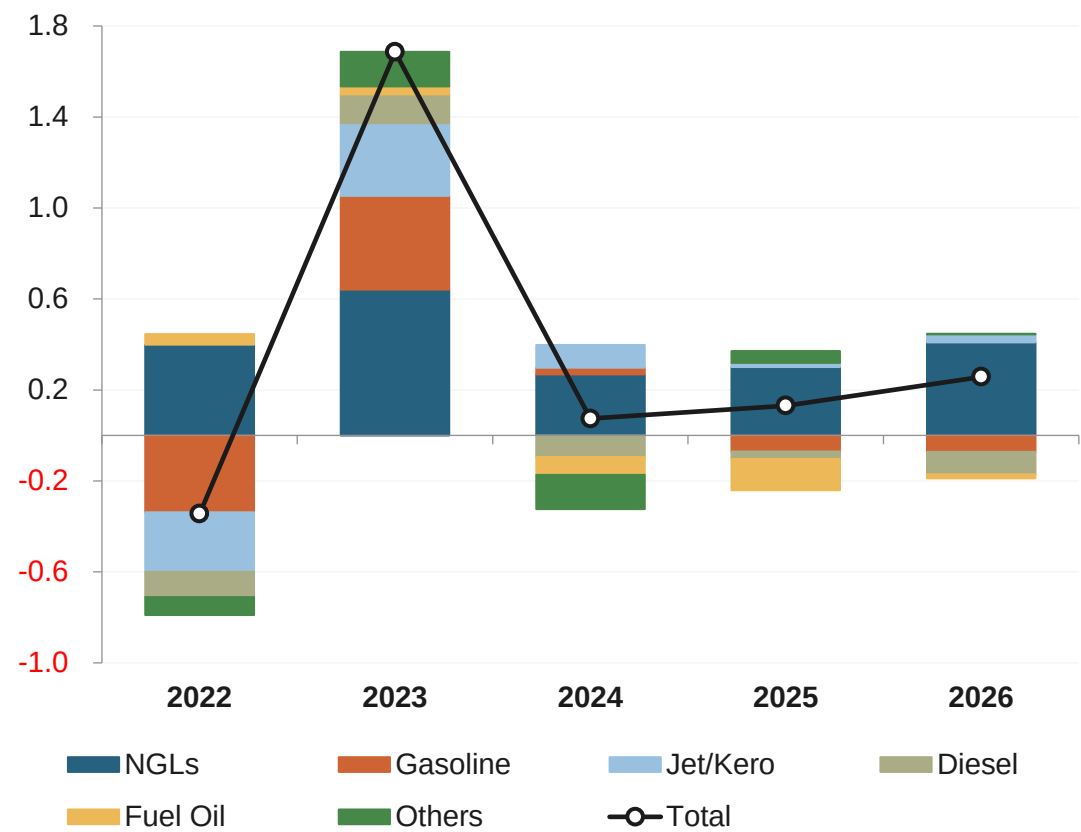
Source: FGE NexantECA
Note: Solid bars represent 'Firm and Likely' additions, shaded bars represent 'Possible'
2028 data includes the relocation of PetroChina's Dalian refinery (215 kb/d)

Key 'Firm & Likely' Grassroots Refinery Additions (2025-2035)				
Country	Operator	Refinery Site	Size (kb/d)	Year
India	HRRL	Barmer	181	2026
China	Norinco / Saudi Aramco / Panjin Xincheng	Liaoning, Panjin	323	2026
China	Fujian Petrochemical	Fujian	344	2029
Mongolia	Sod Mongol Group	Sainshand	30	2029

Source: FGE NexantECA

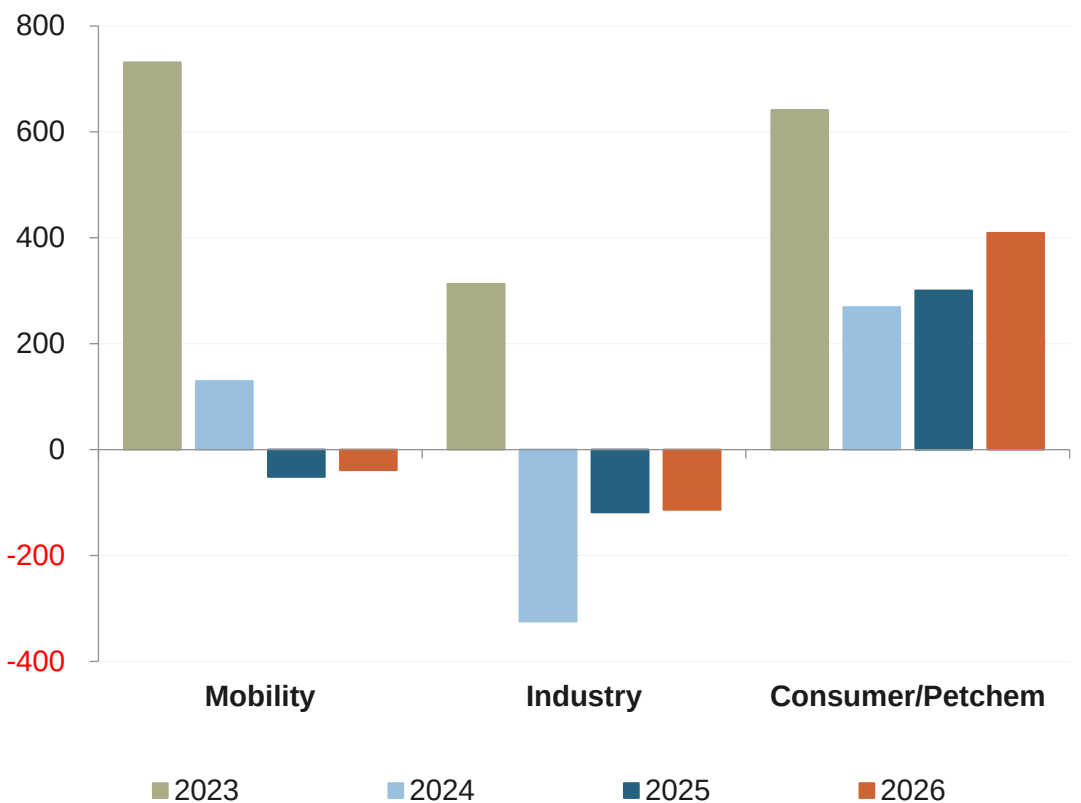
China's demand growth slows on economic and structural challenges

China Y-o-Y Demand Growth by Product, mmb/d



Source: FGE NexantECA

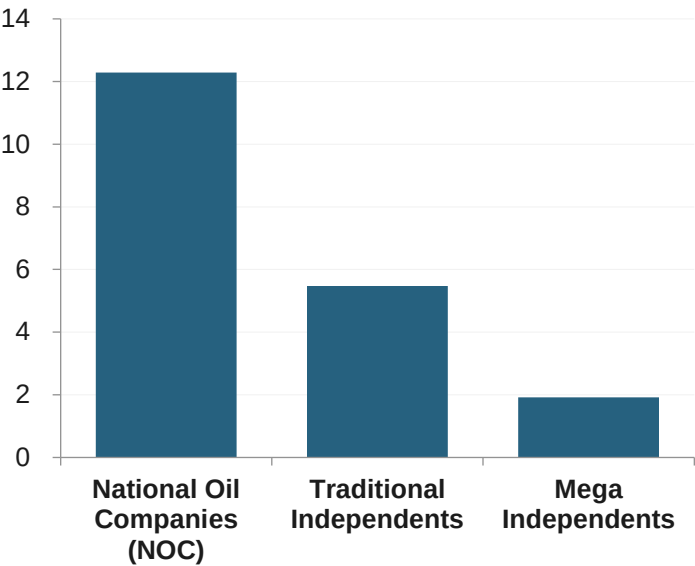
China Y-o-Y Demand Growth by Sector, kb/d



Source: FGE NexantECA

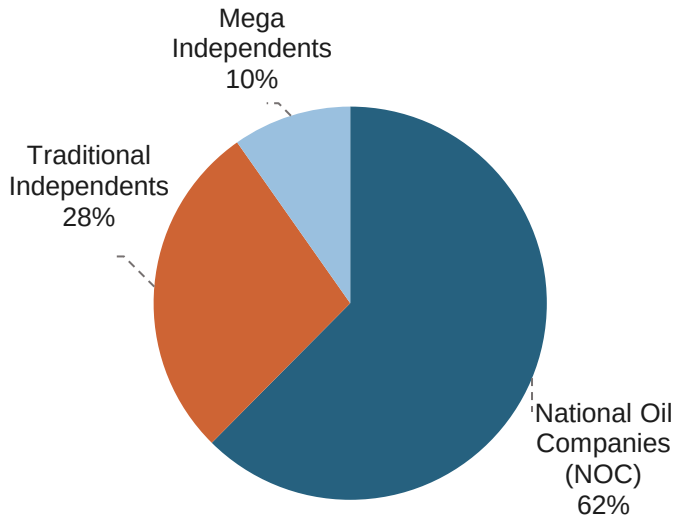
Overview of China's refining landscape and quota policy

China Refining Capacity by Player, mmb/d



Source: FGE NexantECA

China Refining Capacity by Player, %



Source: FGE NexantECA

Type of Refiner and Quota Requirements

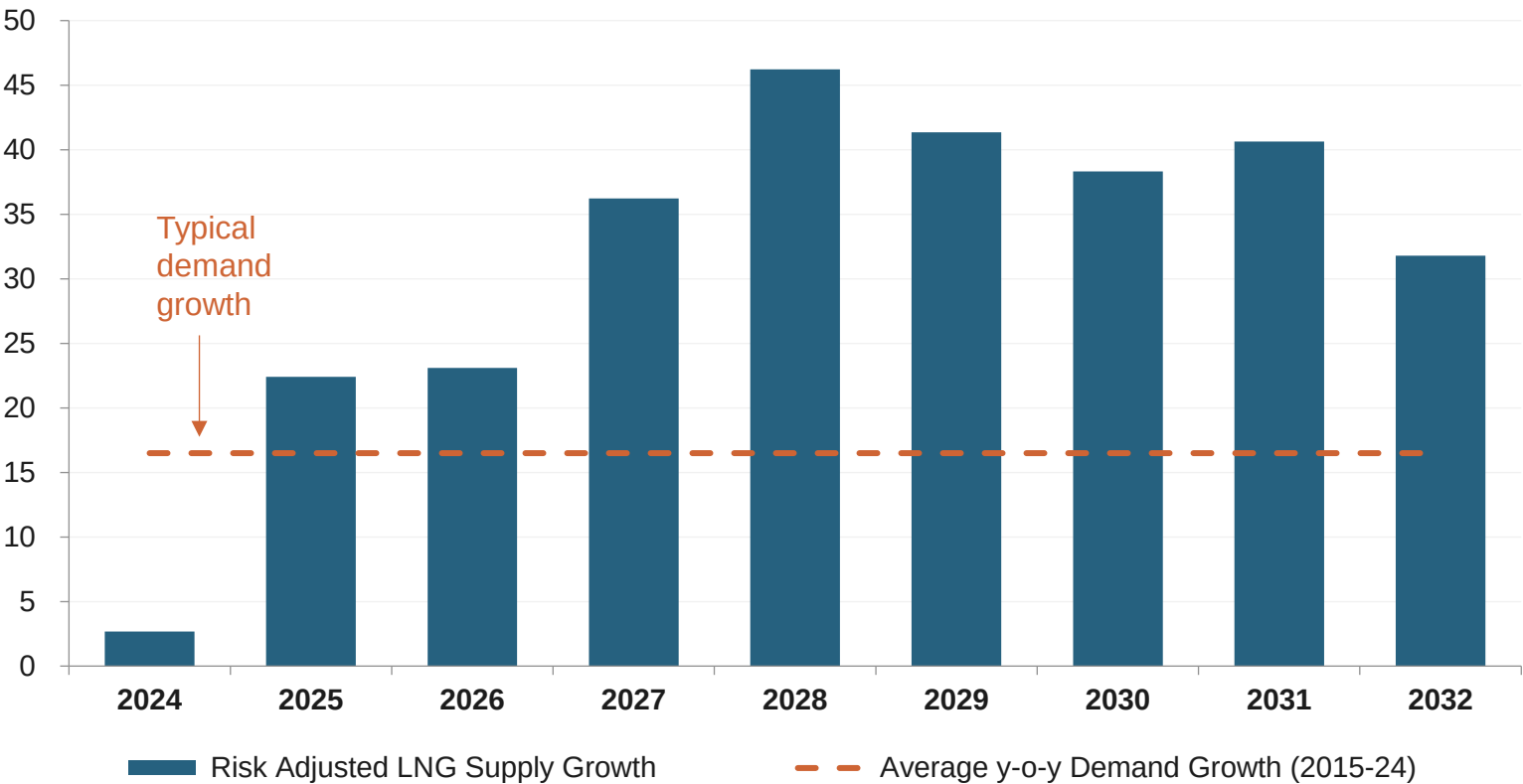
Refiner	Crude Imports	Fuel Exports
NOCs	No quotas needed	Quotas needed
Traditional Independents	Quotas needed	Not allowed
Mega Independents	Quotas needed	Not allowed (except Rongsheng)

Source: FGE NexantECA

- NOC refining capacity is dominated by Sinopec (6.6 mmb/d) and PetroChina (4.5 mmb/d).
- Traditional independent refineries are typically smaller than 200 kb/d in size. They are concentrated in the Shandong and Liaoning provinces of northern China.
- Mega independent refineries are integrated with downstream petrochemical units. They are Hengli (400 kb/d), Rongsheng (800 kb/d), Shenghong (320 kb/d), and Yulong (400 kb/d).

Key Market Debate: How will the market absorb the upcoming supply wave?

LNG Supply Growth Adjusted for Risk of Delay, mtpa



Source: FGE NexantECA

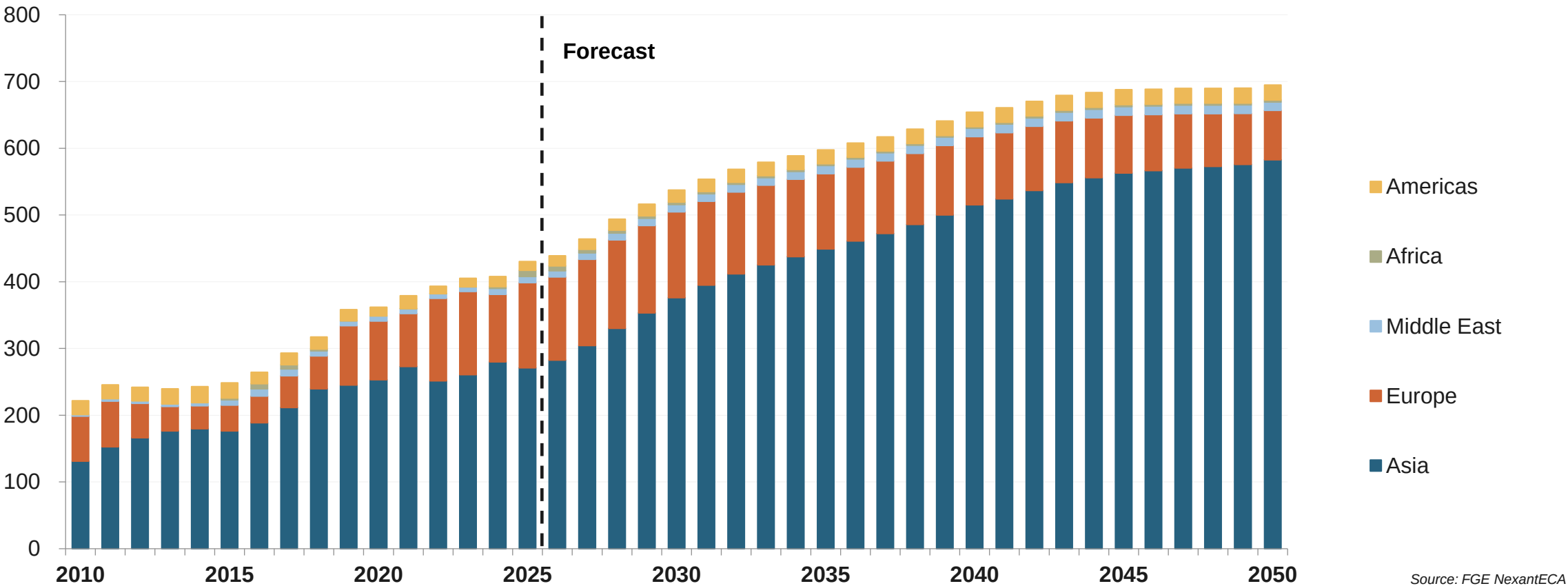
Supply includes output from operating (Op), under-construction (UC), and likely (L) projects and takes into account possible outages and delays to project start-ups

- The new supply wave should become more visible in the market from 2026 and continue for several years.
- While we have factored in risk-adjusted supply from projects currently under construction – such as Golden Pass, NFE, ECA, and Pluto 2 – for the 2026 balance, a large proportion of the incremental supply will come from the existing projects ramping up.
- Projects like LNG Canada, Corpus Christi Stage 3, Plaquemines, and several smaller developments will contribute significantly to the 2026 increase.

—— LNG and Gas Markets

LNG demand sees strong growth as gas underpins the transition away from coal

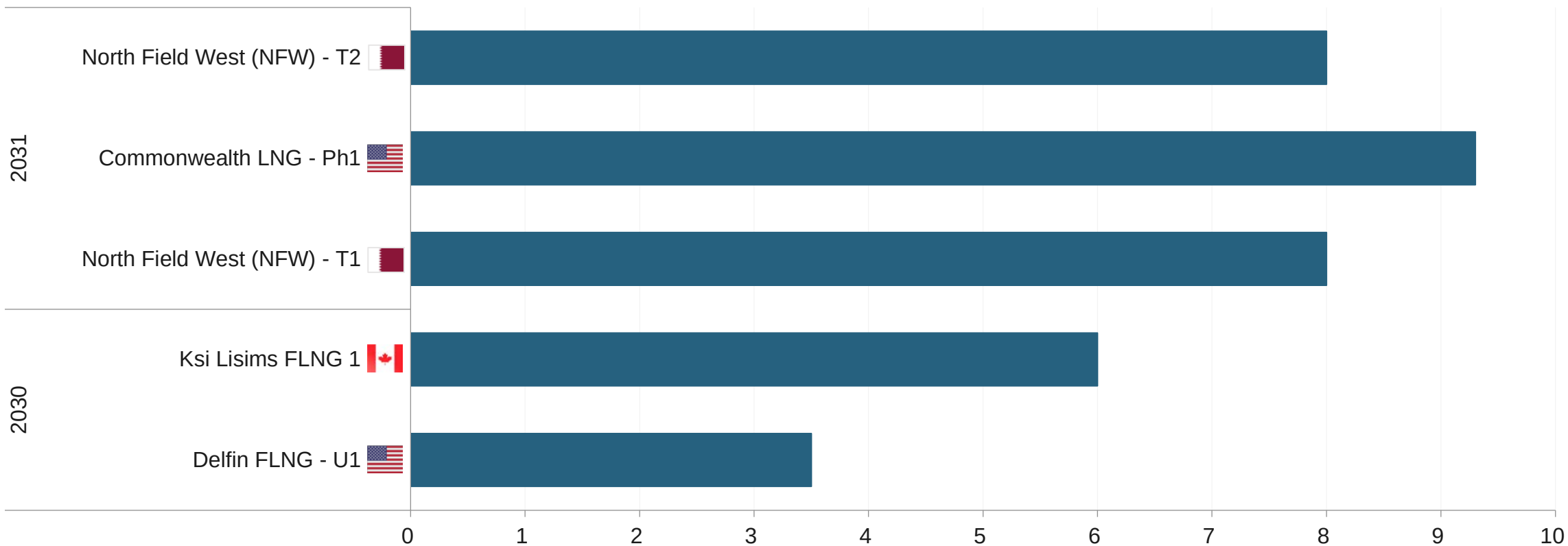
Global LNG Demand by Region, mt



Source: FGE NexantECA

Around 34 mtpa of LNG capacity is close to FID, with potential to bring new supply online by the early 2030s

Potential Start-up of Projects with Likely Near-Term FID, mtpa



Source: FGE NexantECA

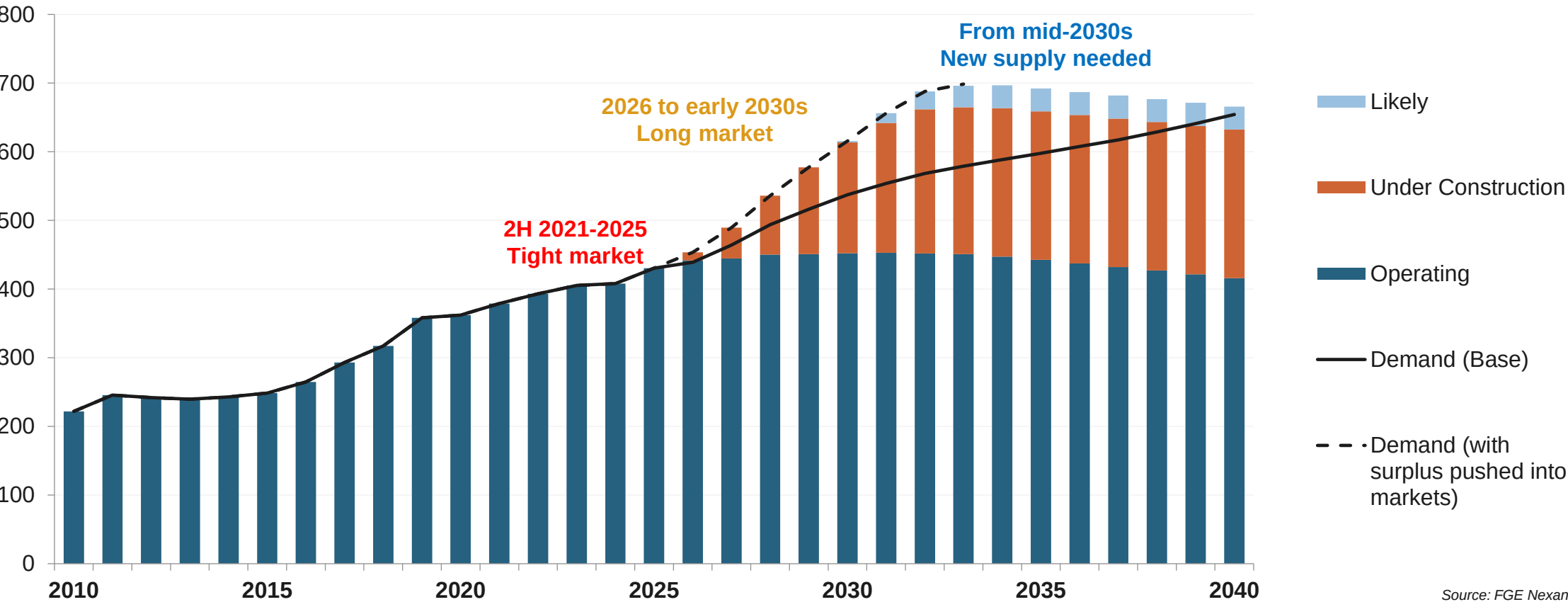
Trump 2.0... What is the **real** impact on the LNG market?



- Trump is pushing countries to buy US oil and LNG to rebalance trade surpluses... **when he shakes a foreign leader's hand he says, "buy US LNG!"**
 - Aside from China, countries in Asia are actively engaging... they can't buy enough Boeing jets to take a bite out of the trade surplus!
 - They are open to USGC supplies, but wary of costly Alaska LNG.
- **As US LNG shifts back into growth mode, it can impact prospects for Mideast LNG sales...** especially if US hub-linked supplies appear competitive with oil-linked ones.

LNG market sees boom and bust cycles, with the tight market rebalancing in 2026

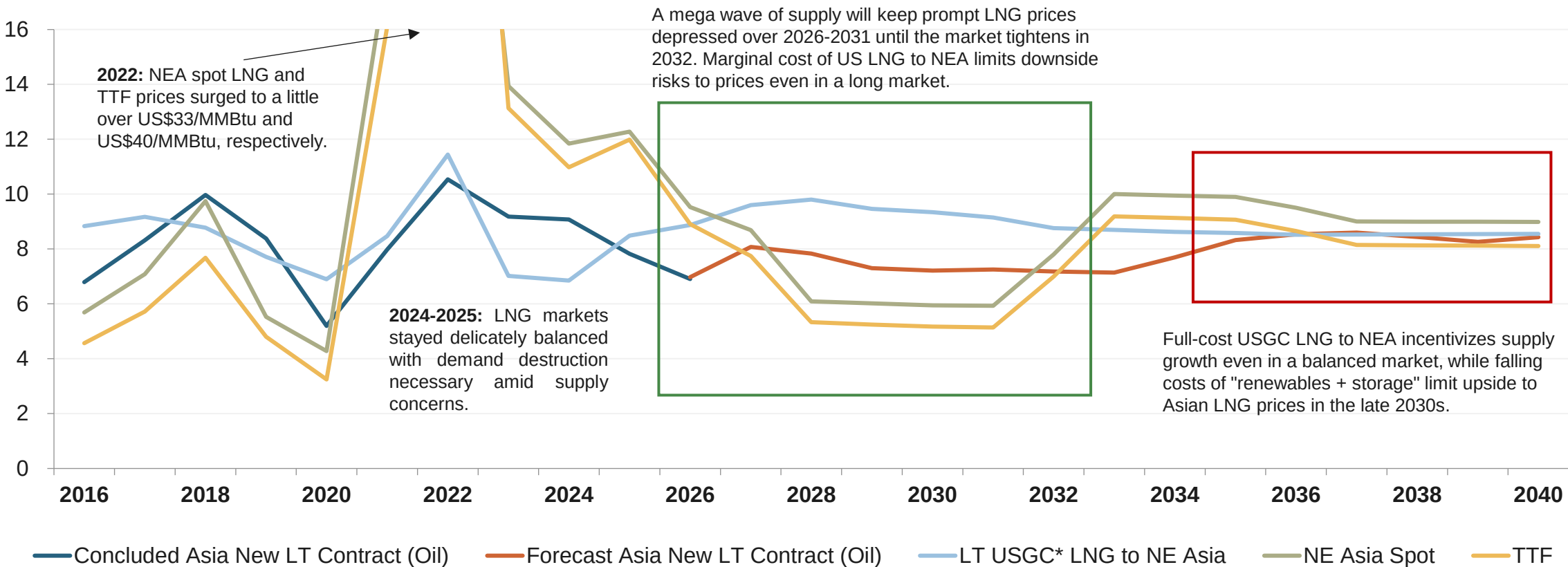
Global LNG Supply vs. Demand, mt



Source: FGE NexantECA

Long-term LNG prices converge around US\$8-10/MMBtu

NE Asia LNG Price Forecasts, US\$/MMBtu



Source: FGE NexantECA

Forecasts from 2025 are in 2025\$ real terms.
Note that defining long-term contract prices is not trivial as price outcomes are driven by current year oil/gas prices, but formulas are negotiated earlier. These formulas vary over time depending on market conditions.
*LT USGC LNG supply is typically secured from pre-FID projects through 15-to-20-year SPAs. LNG as a part of these SPAs is typically expected to start 6 to 8 years after signing.

Thank You

If you have any questions regarding this presentation, please contact us at
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