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**S&P Global**

Commodity Insights

# Global Chemicals Outlook

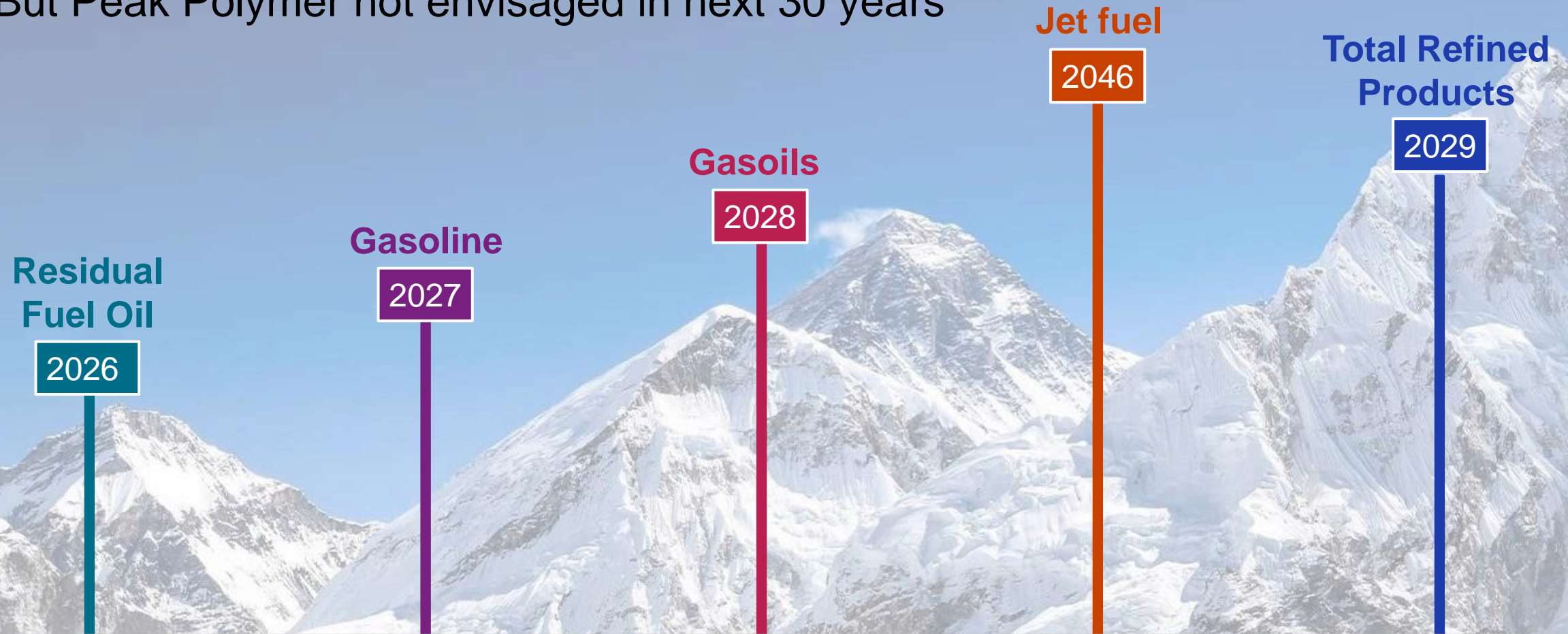
## Balancing Long Term Trends with Short Term Problems

APIC 2024

**Tony Potter**, Vice President, Global Head of Chemicals, Derivatives, Plastics and Materials

30 May 2024

# Global demand for traditional fuels peaks imminently But Peak Polymer not envisaged in next 30 years



Data compiled May 2023.  
Source: S&P Global Commodity Insights

# Agenda

**Balancing long term trends with short term problems**

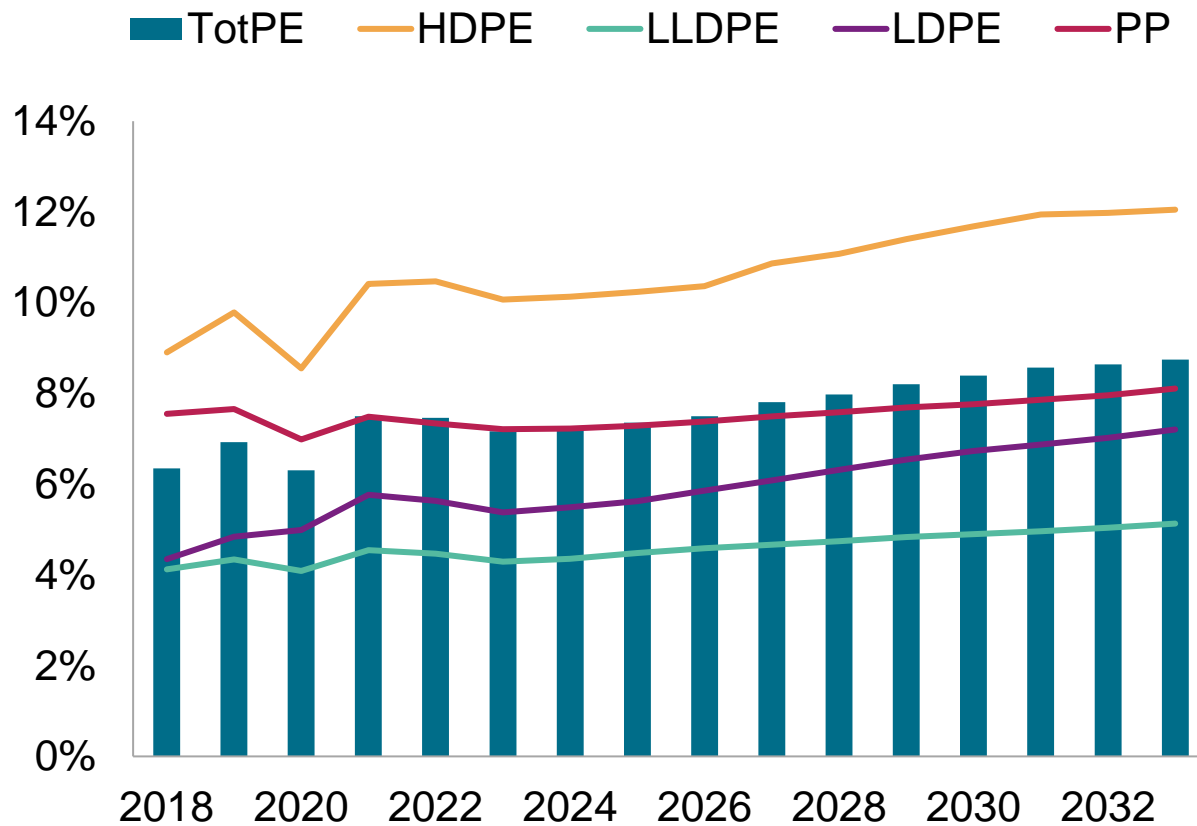
Overcapacity and the path to recovery

Trade and market opportunities



# Polymer recycle volumes continue to grow but insufficient to cap virgin polymer growth. Substantial investment in base chemicals and polymers required to 2050

## Global recycle PE demand (%)

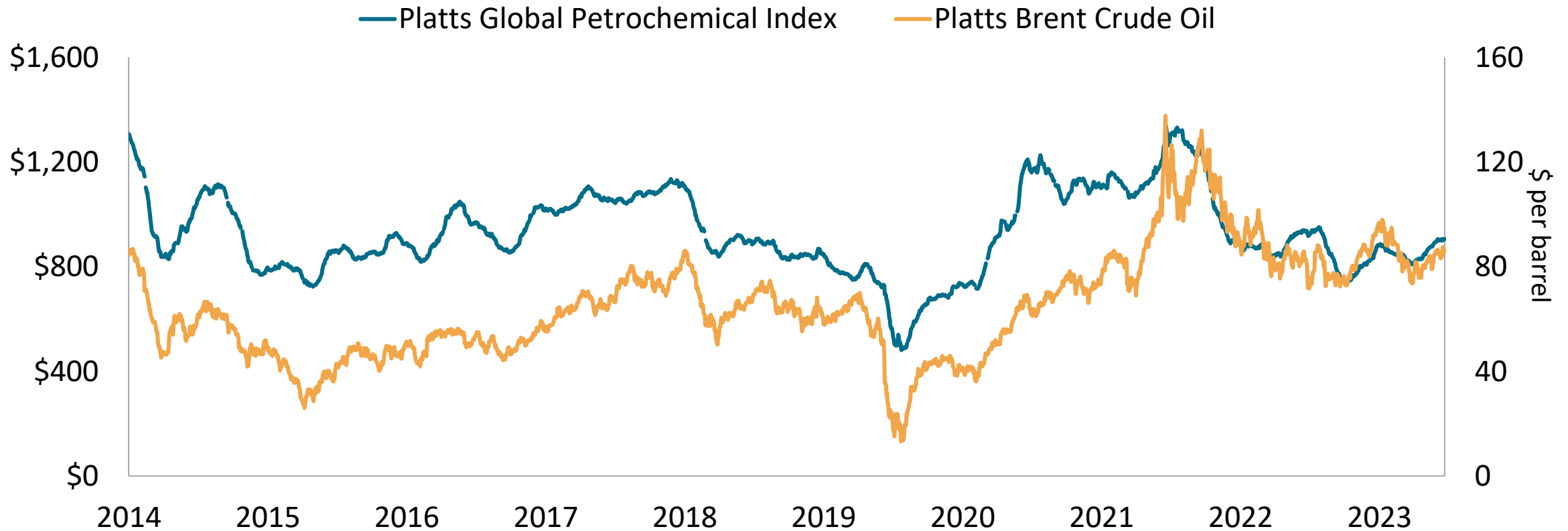


Source: S&P Global Commodity Insights

- Virgin demand growth remains robust; “peak polymer” not seen on horizon
- Virgin PE prices became more competitive in the downcycle impacting recycle rate growth
- Expectation is that the United Nations global plastics treaty (2024) will offer a roadmap to national governments for next improvements

# High crude oil prices push chemical markets to elevated levels and naphtha-based derivatives face severe margin pressure

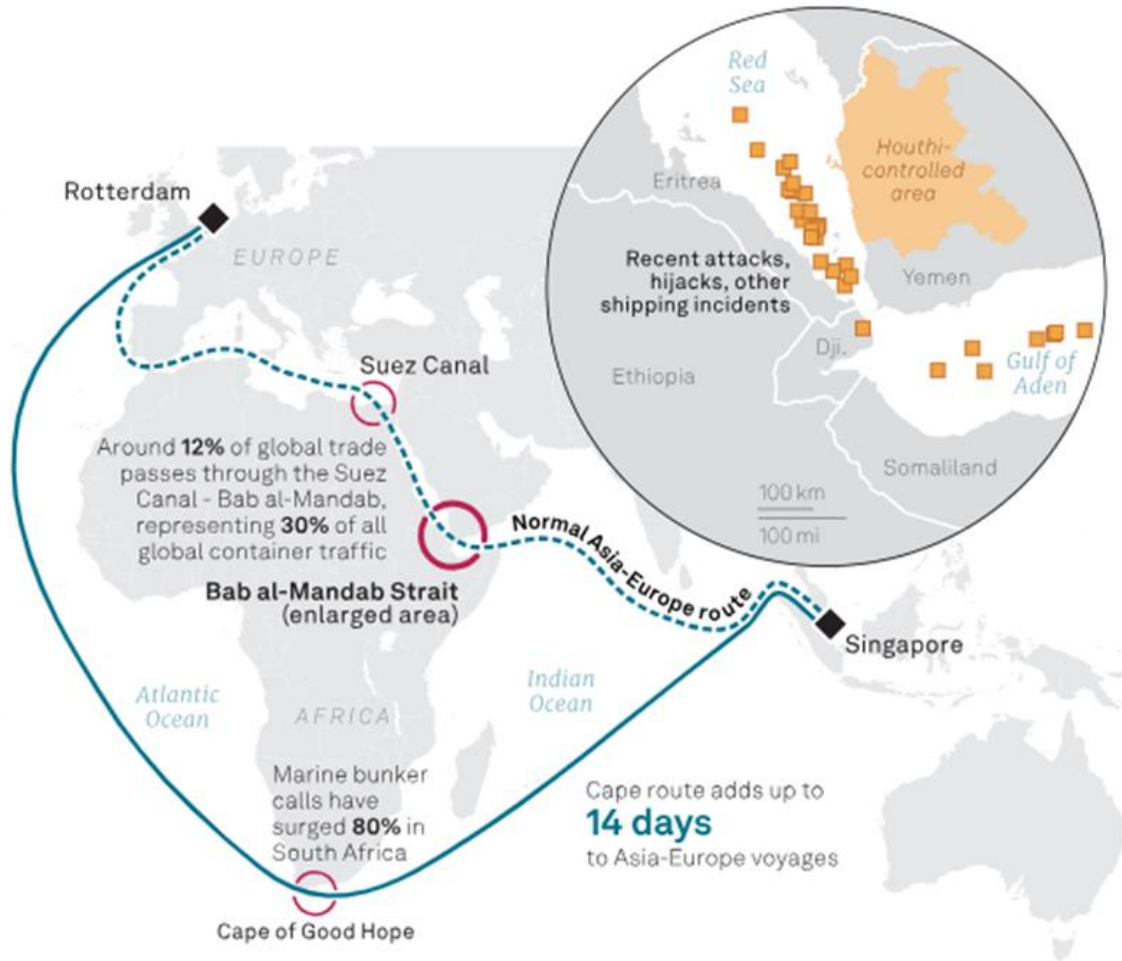
## Platts daily pricing trends: petrochemicals (\$/metric ton); crude oil (\$/barrel)



Source: S&P Global Commodity Insights; PGPI, derived from global pricing data for C2, C3, benzene, toluene, PX, LD and PP

# Supply-chain disruptions continue as Red Sea turmoil shakes up global trade

Weaponization of shipping chokepoints is a threat to global commodity supply chains.



Data compiled January 23, 2024, 11:30pm UTC.  
Source: S&P Global Commodities at Sea; MINT.  
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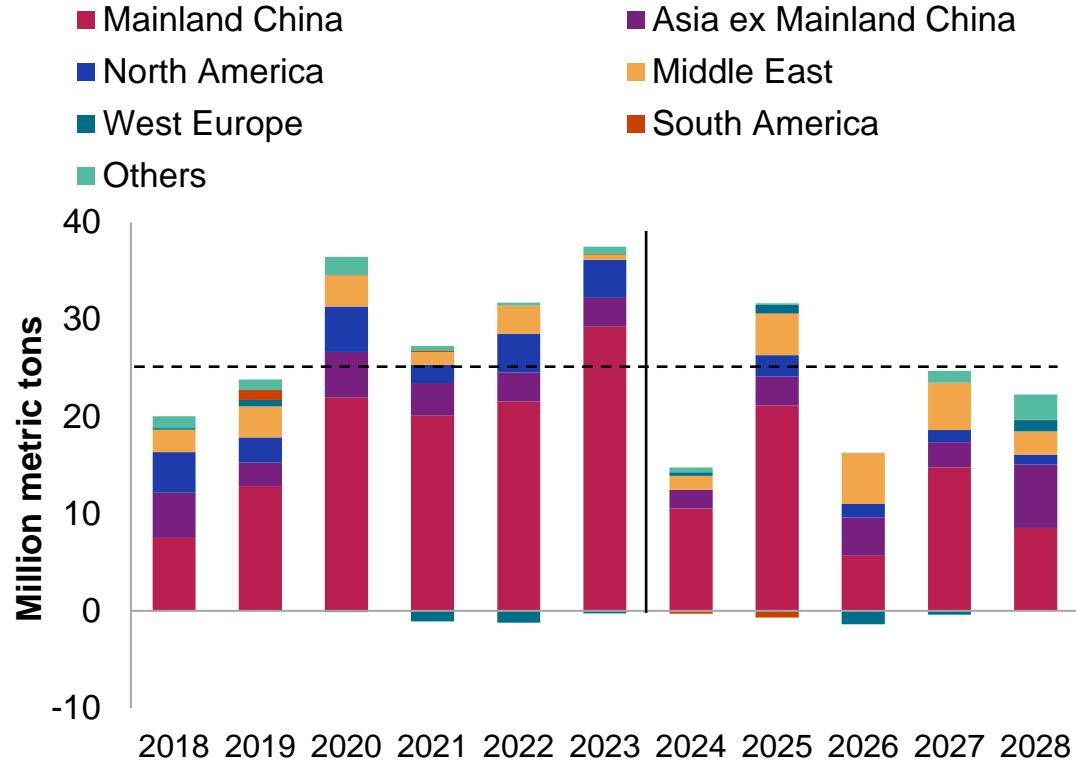
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# Global petrochemicals will remain over-supplied through to 2028

## World Base Chemical Capacity Growth by Region



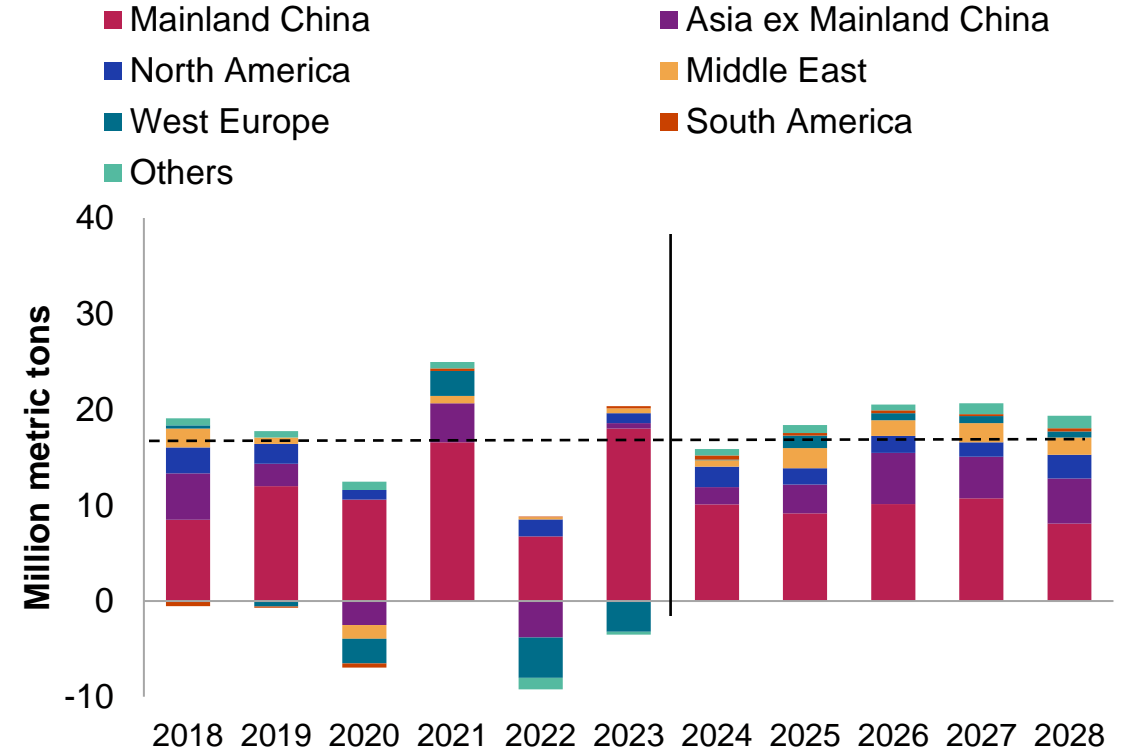
As of May. 16, 2024.

Source: S&P Global Commodity Insights.

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\* Base Chemical : Ethylene, Propylene, Paraxylene, Benzene, PVC, Methanol

## World Base Chemical Demand Growth by Region



As of May. 16, 2024.

Source: S&P Global Commodity Insights.

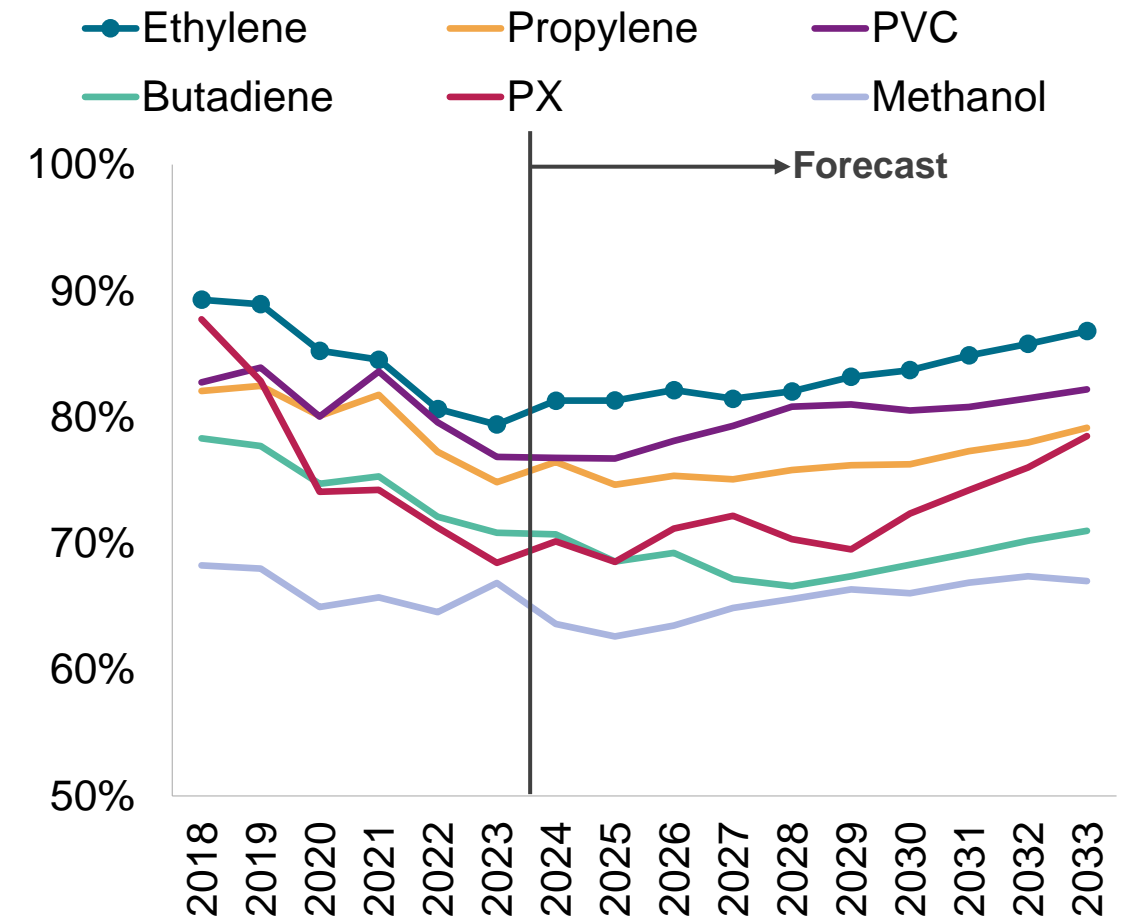
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Ethylene – like other base chemicals – is in a cyclical margin trough, and capacity utilization is low



World Petrochemical Capacity Utilization (%)



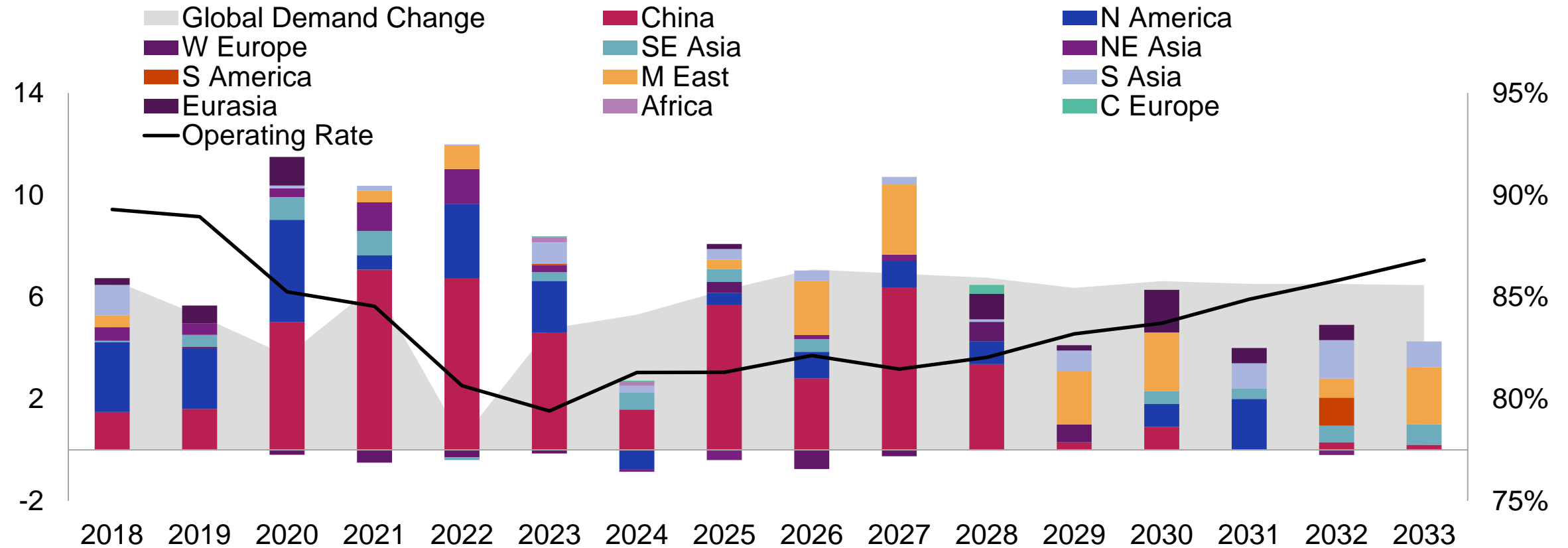
Source: S&P Global Commodity Insights

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# Capacity overbuild is the biggest problem; capacity growth is being delayed into later years – prolonging the margin trough

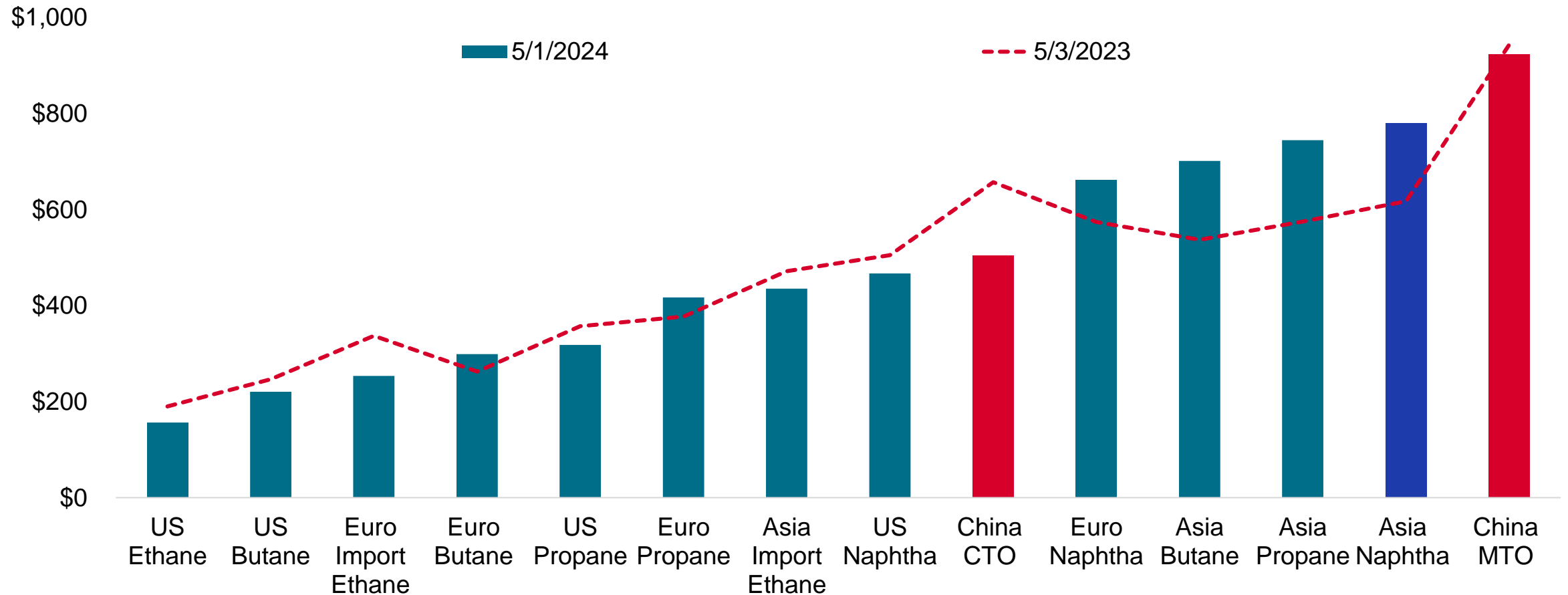
Ethylene capacity build vs. demand growth (million metric tons)



Source: S&P Global Commodity Insights.

Higher oil prices increase the general level of petrochemical and polymer pricing. NE Asia naphtha based cash costs are the highest in the world.

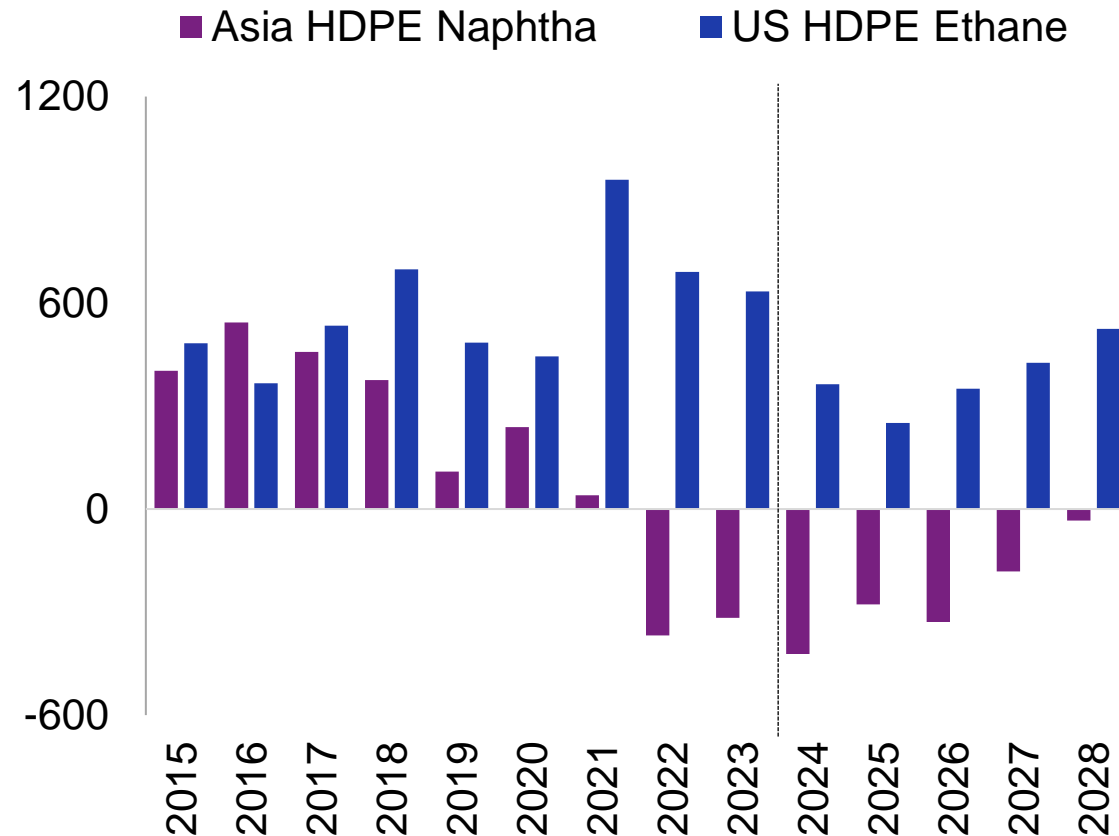
### Ethylene COP by Feedstock\*, \$/T



\*Ethylene COP = feedstock - coproducts + (variable + fixed plant costs)

# Extended period of poor profitability forces tough decisions on balancing capital needed for growth versus low-carbon initiatives

## Integrated HDPE margins (\$/metric ton)



Strong global cash margins from 2013-2018 result in reinvestment wave

Post-Covid supply-chain disruptions create margin spike for North America in 2021

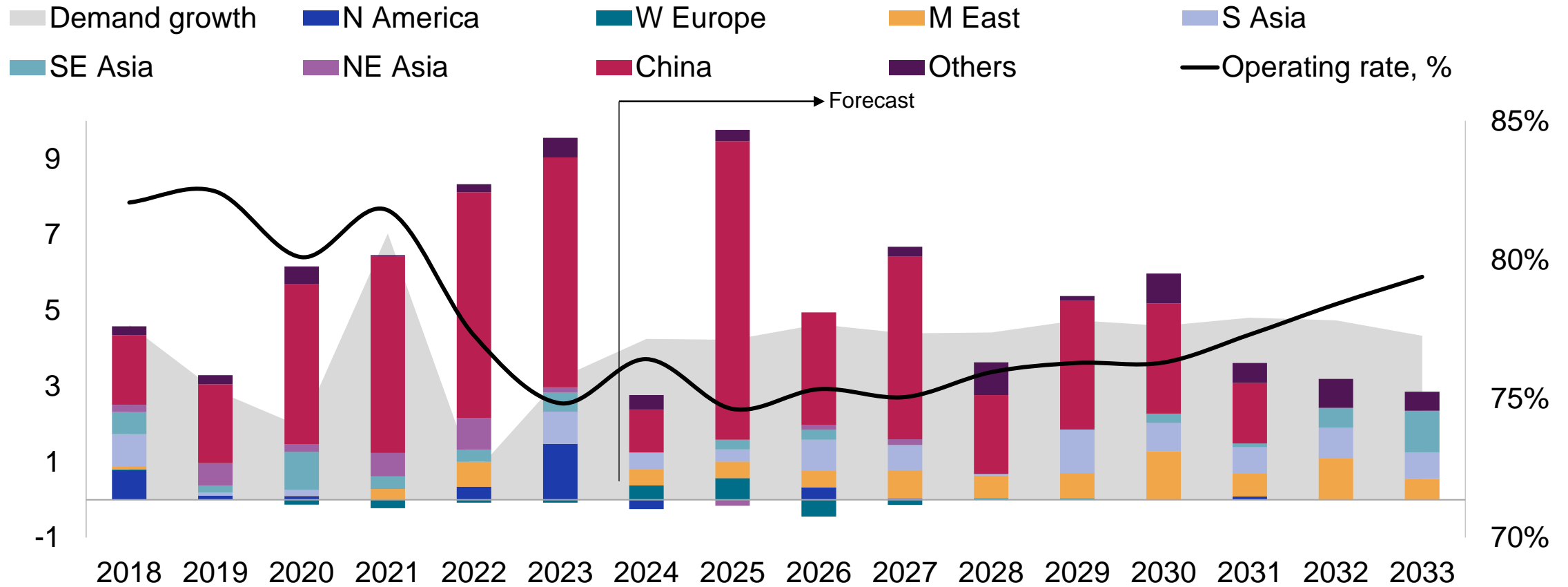
Integrated PE cash margins show competitive advantage for ethane-based production

Surplus drives cash margins lower as naphtha-based margins trend negative

Extended period of low profitability likely to force assets to idle

Propylene capacity growth across 2020-30 is ~1.6x demand growth. Substantial new propane dehydro build in addition to steam cracker coproduct

**Propylene capacity build vs demand growth (million metric tons)**

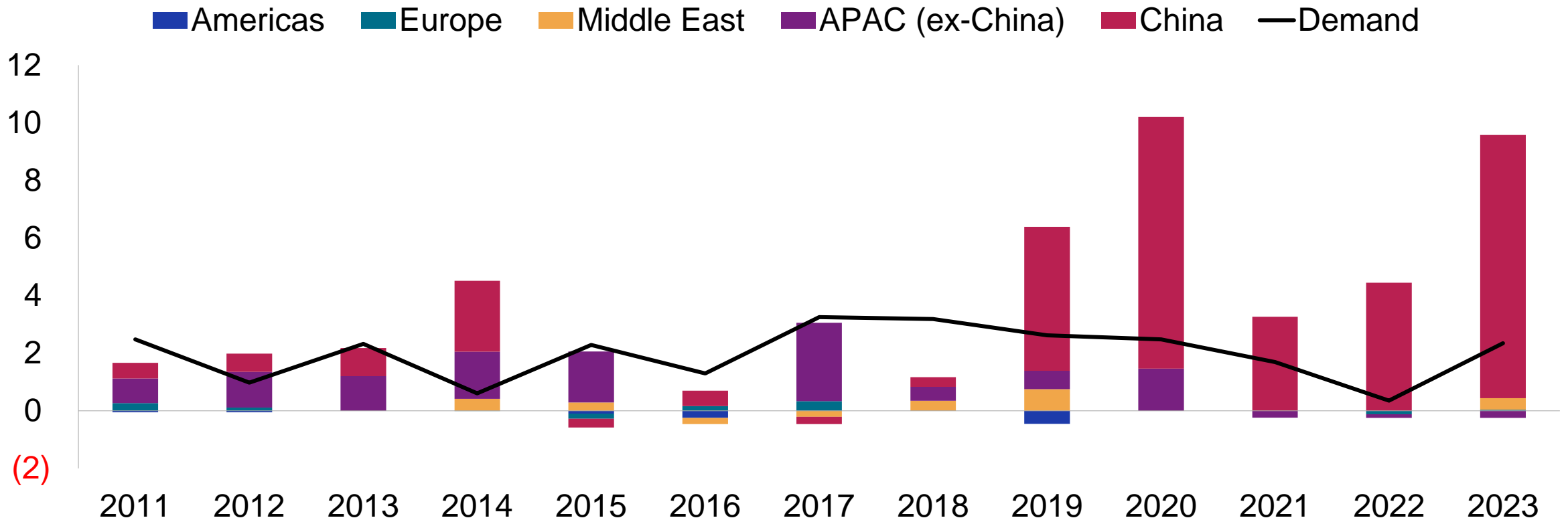


Updated Mar 1, 2024

Source: S&P Global Commodity Insights.

# China added enormous PX capacity resulting in global oversupply

**Paraxylene capacity build vs demand growth(year-on-year, MM mt)**

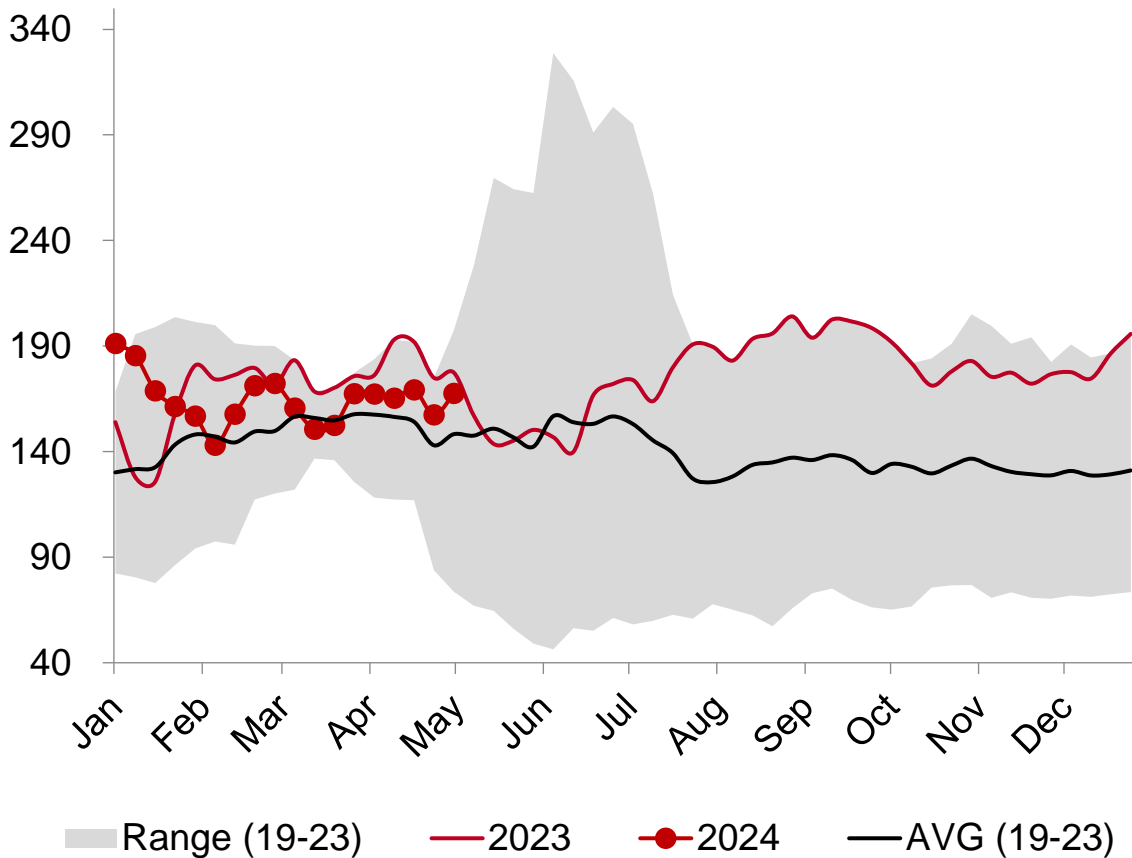


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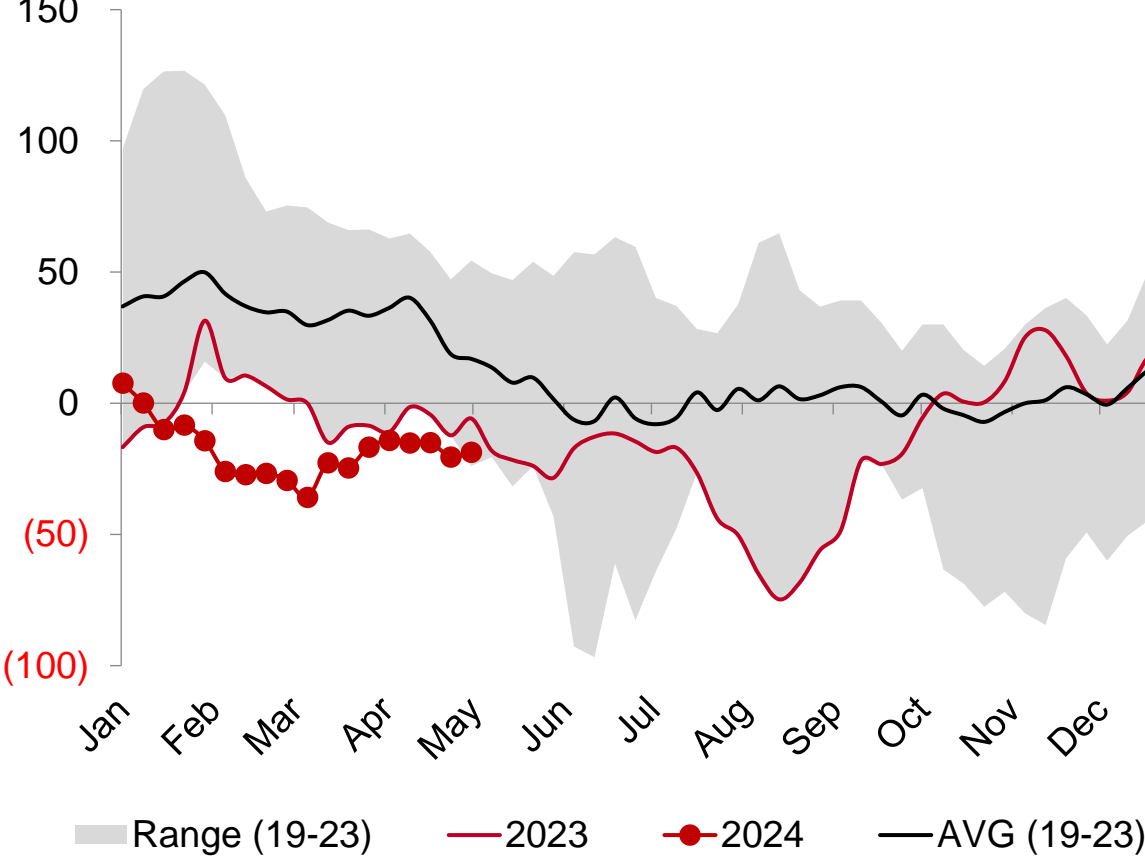
Data compiled March. 8, 2024.  
Source: S&P Global Commodity Insights.

Aromatics continue to be priced into the gasoline blending pool. It is more profitable selling Mixed Xylenes into gasoline blending vs isomerizing into PX for PET/polyester.

US PX - Heavy Naphtha Spread (cts/gal)



US PX - MX Spread (cts/gal)



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# Mainland China capacity investments increase self-sufficiency, resulting in major impact on global trade

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Trade balance for light olefins derivatives noted major shift in 2021

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The shift to lower net imports being felt in many regional markets

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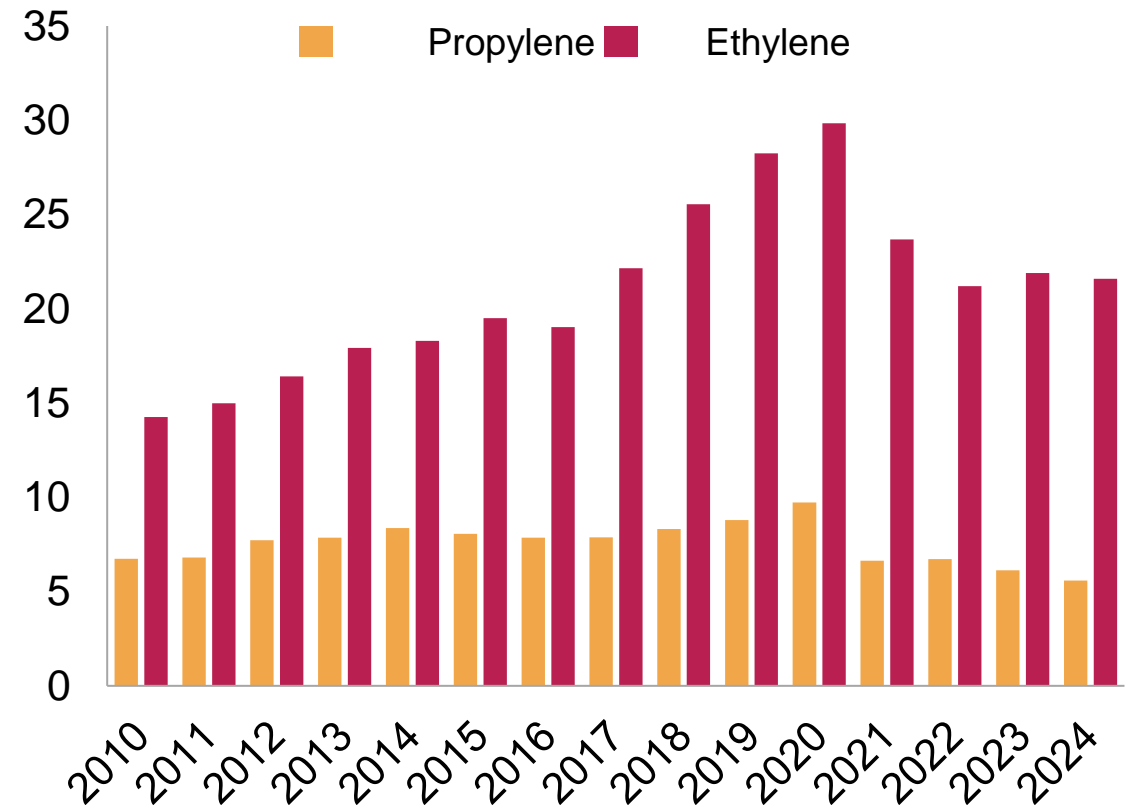
Declining need for net imports will disrupt “build low cost/ship to high demand” model

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Near-shoring by markets in US and Europe will add to disruption on balance of trade

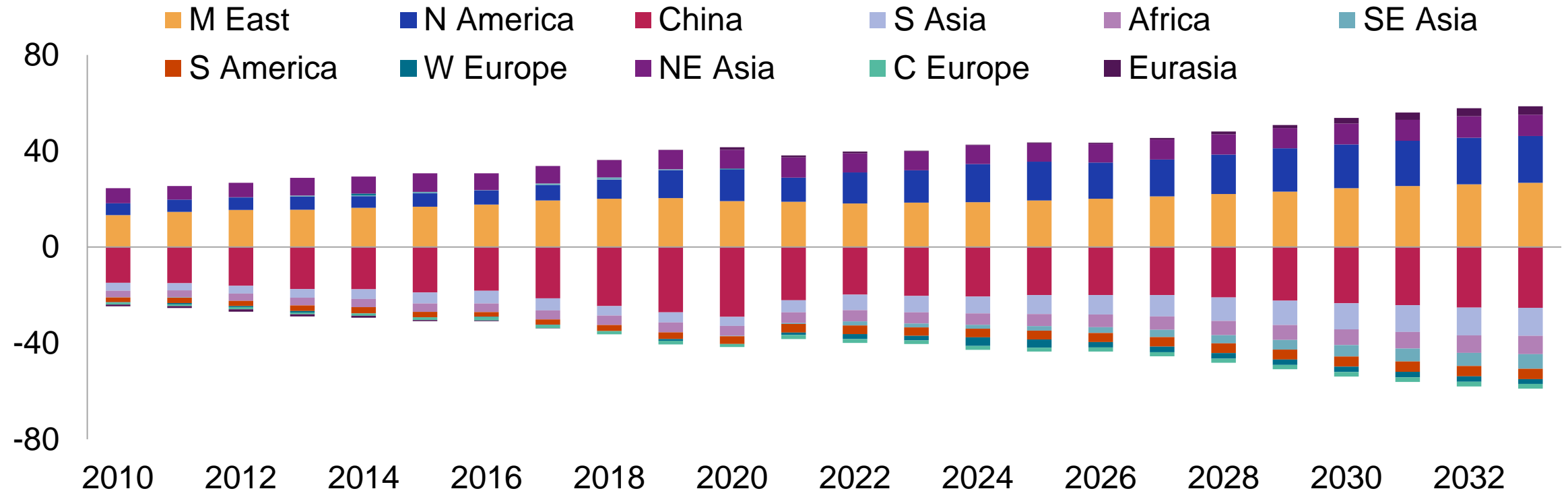
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**Mainland China net equivalent light olefins imports (million metric tons)**



# Global ethylene net equivalent trade reset after the pandemic; trade should accelerate as we exit the margin trough

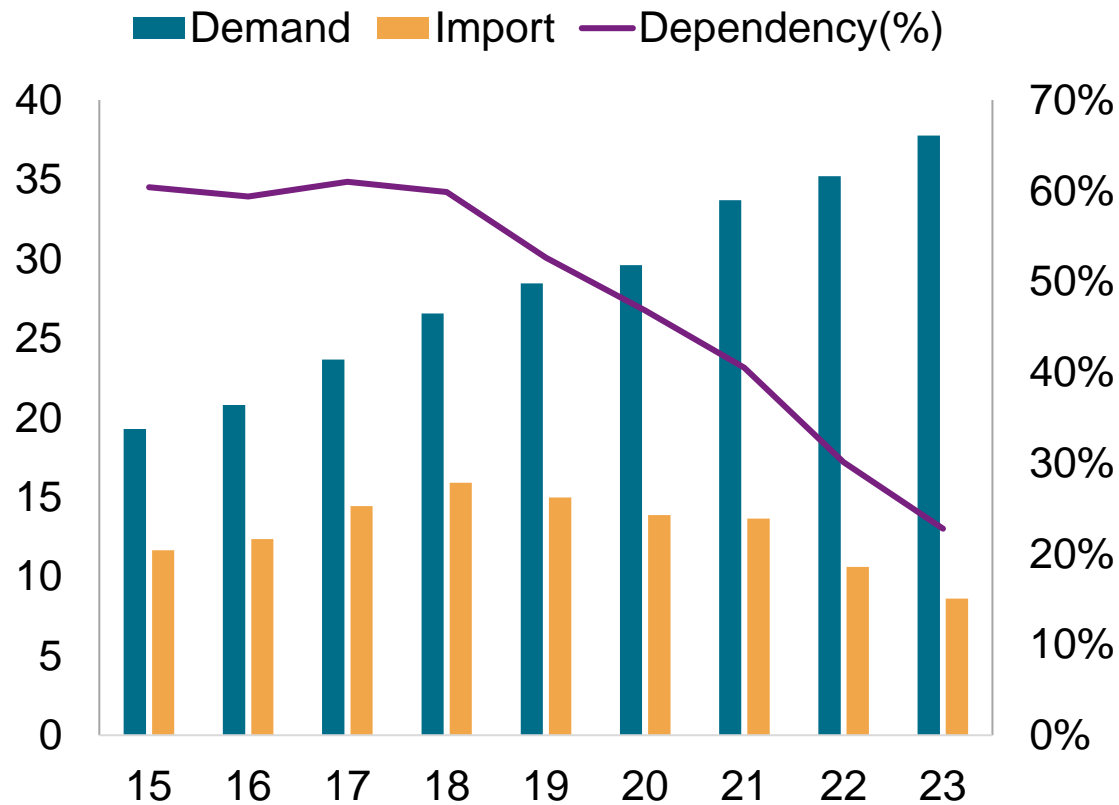
## World net equivalent trade (million metric tons)



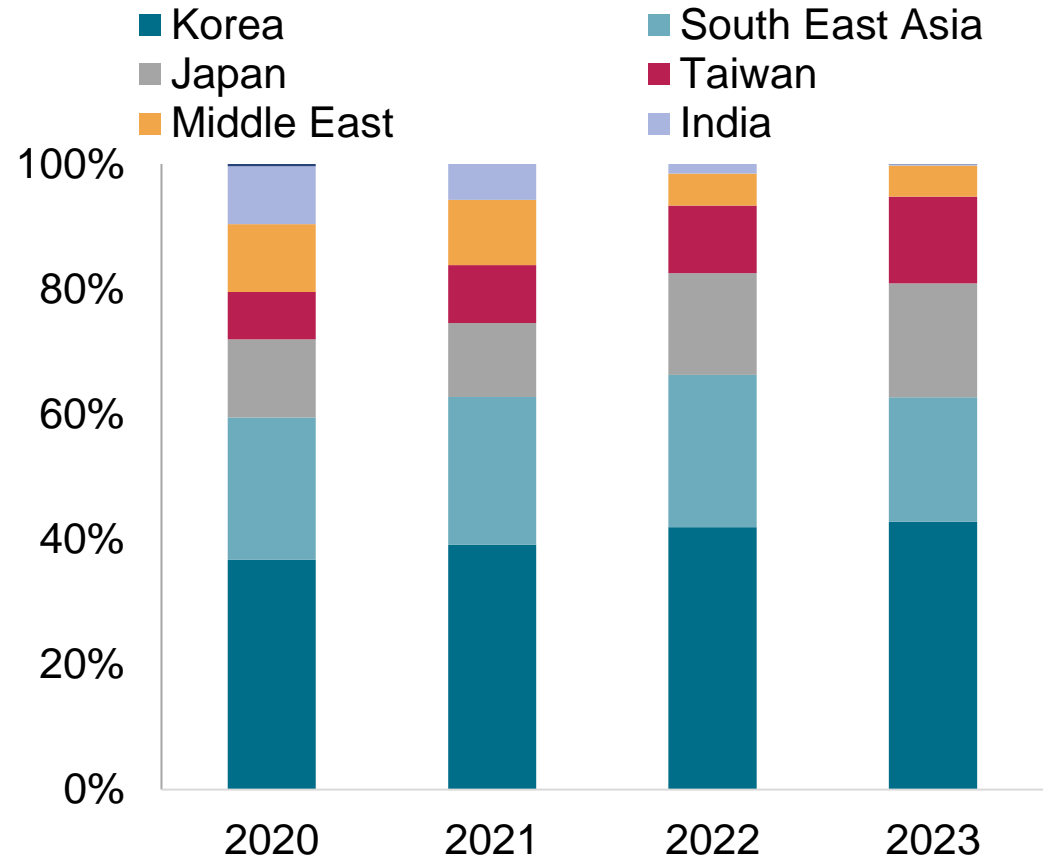
Source: S&P Global Commodity Insights.

# China PX import dependence is declining but China is still the major destination for Asian PX

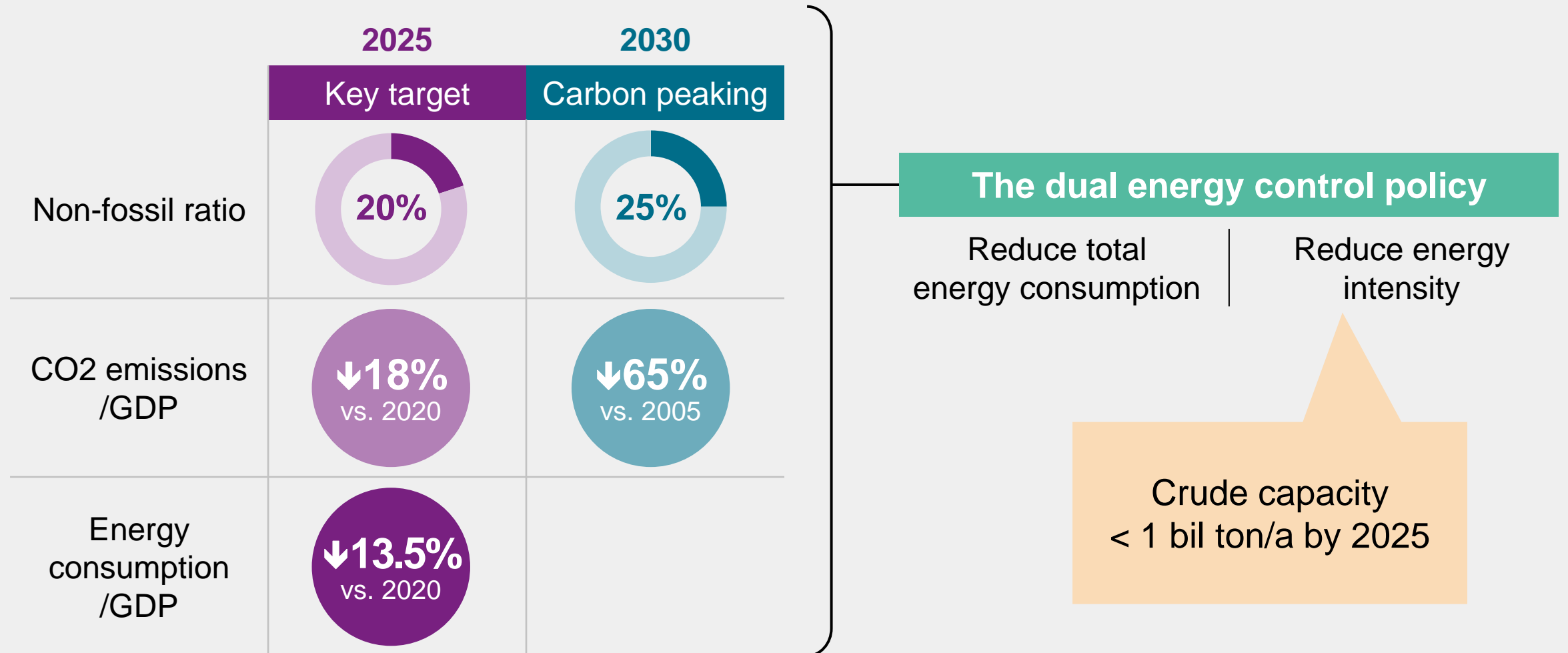
## China PX import (MM mt)



## China imported PX by country/region

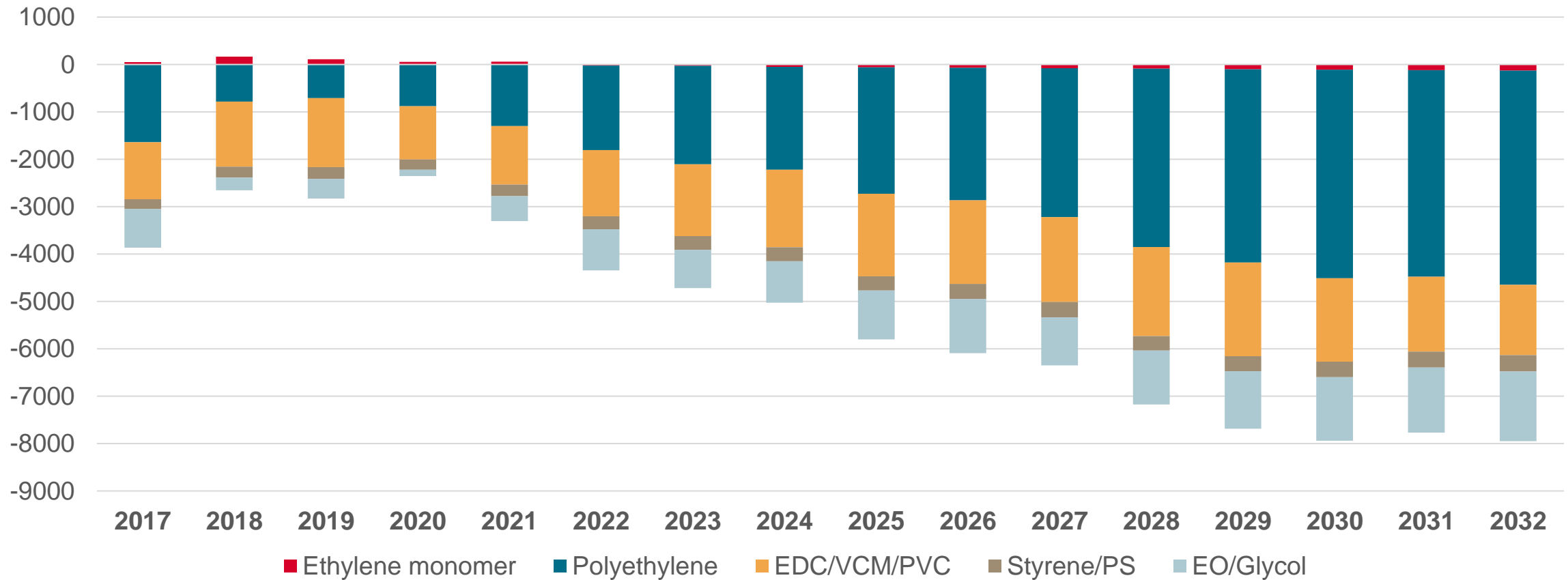


China crude processing capacity targets drove the producers race for approvals, aided by an EPC cost advantage: China builds at 0.56\*USGC



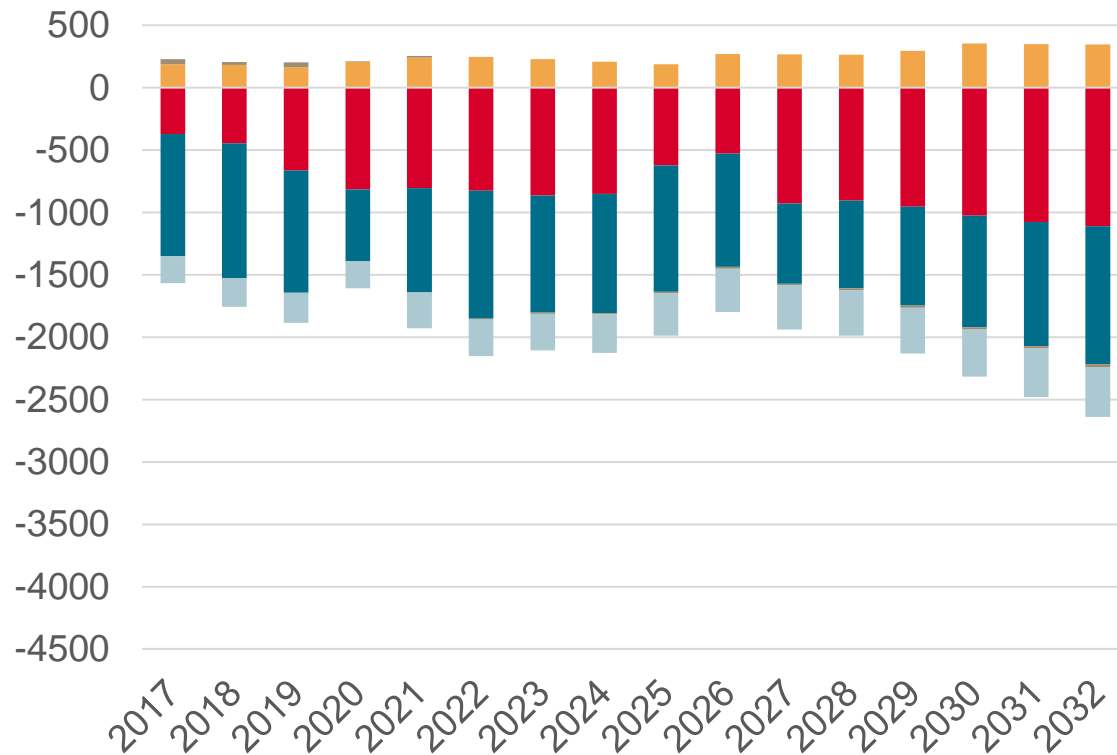
# India's ethylene derivative deficit will grow as demand growth outstrips project approval and implementation

## India Ethylene Net Equivalent Trade (Thousand Tons)

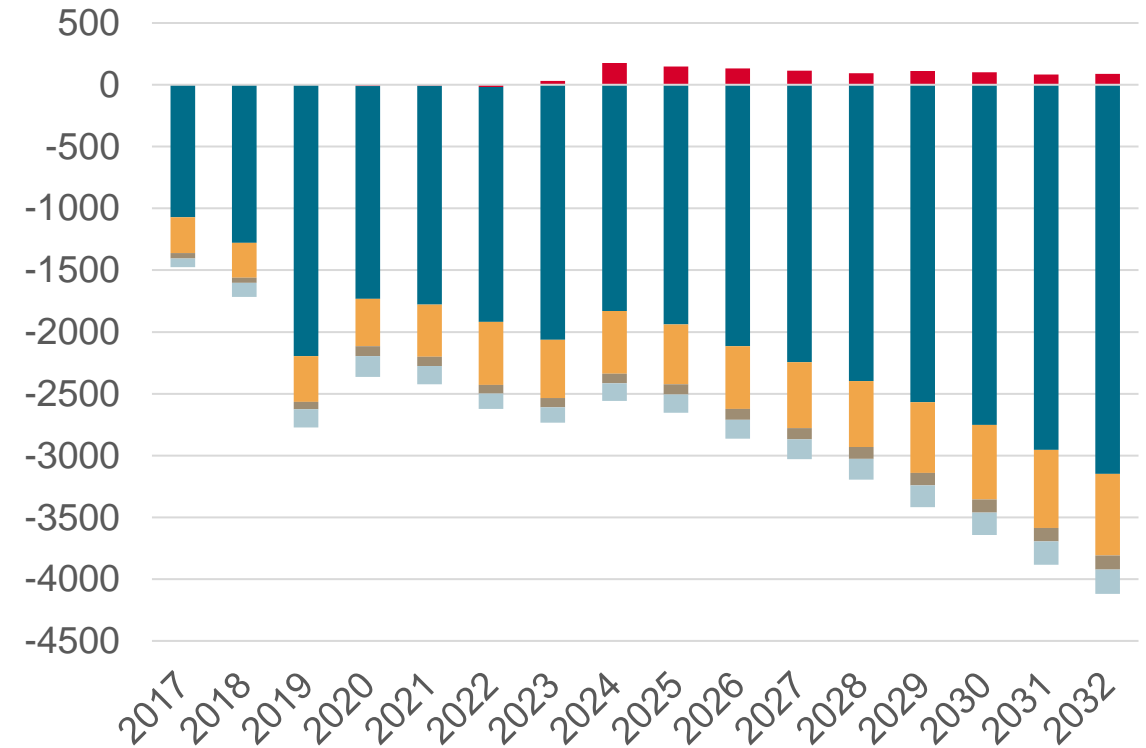


# Substantial ethylene derivative import requirements in strategic markets like Indonesia and Vietnam

## Indonesia Ethylene Net Equivalent Trade kT



## Vietnam Ethylene Net Equivalent Trade kT



■ Ethylene monomer   
 ■ Polyethylene   
 ■ EDC/VCM/PVC  
■ Styrene/PS   
 ■ EO/Glycol

# Key takeaways



Most value chains are overbuilt and margins are poor for naphtha based producers

High oil supports ethane based producers and strong gasoline supports aromatics

China self-sufficiency has improved but future growth needs to be balanced with carbon management

No peak polymer. The chemical industry needs to invest for both growth and decarbonisation