Navigating a Changing Polyolefins Trade Landscape

APIC 2025 - Thailand

16 May 2025

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1 2018 – 2024 Polyolefins trade flow situation

2 Key factors affecting polyolefins trade flow in 2025-2030

3 2025-2030 Trade flow forecast

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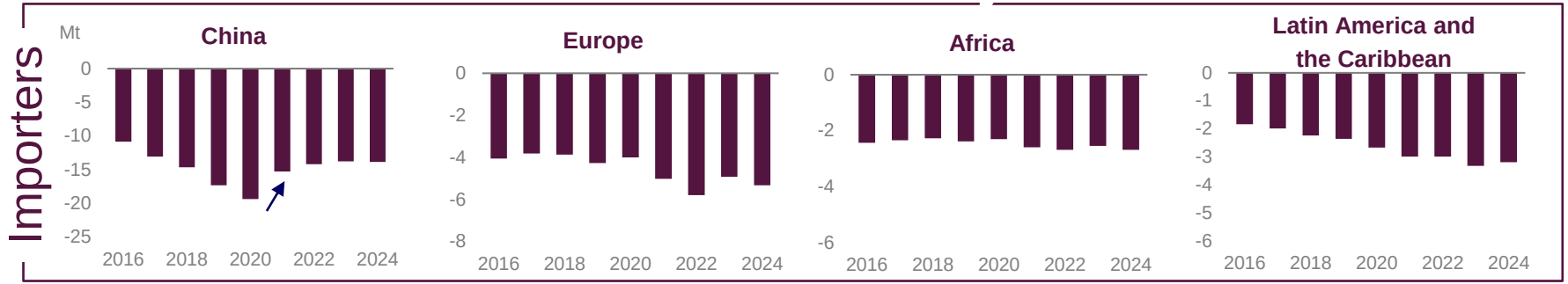
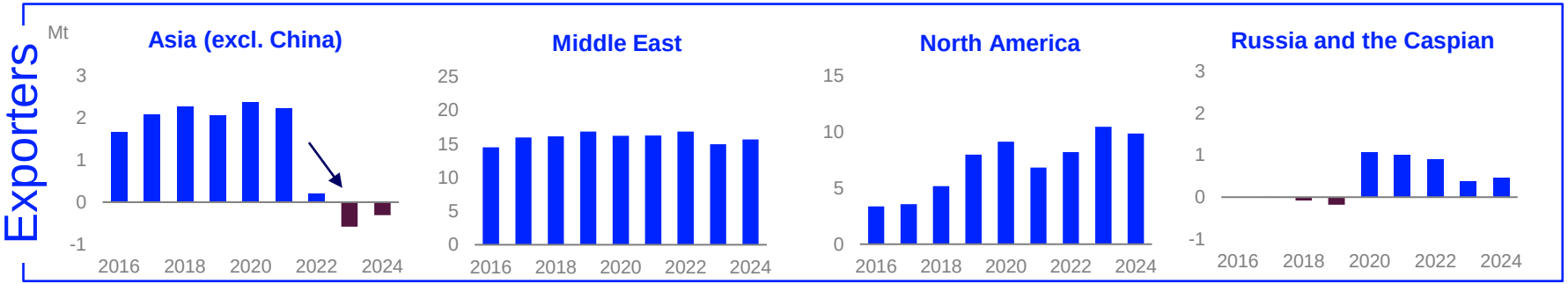
2018 – 2024 Polyolefins trade flow situation

PE

Global Polyethylene Trade

Global trade volume under pressure due to greater self-sufficiency in China, rising geopolitical tensions and protectionist measures across key regions. Asia ex China, Europe, Africa and Latin America to become larger net importers over time.





Net import

Net export

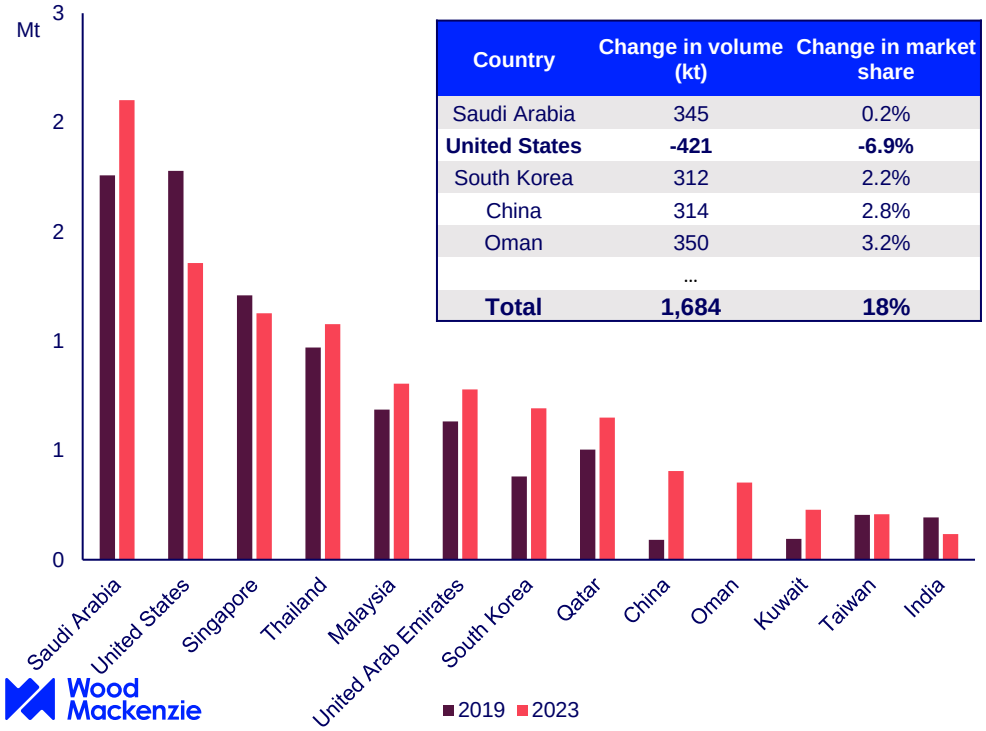
Source: Wood Mackenzie Global Polyethylene Investment Horizon Outlook, H2 2024

PE

US is losing market share in Asian (Excl. China) polyethylene importing market

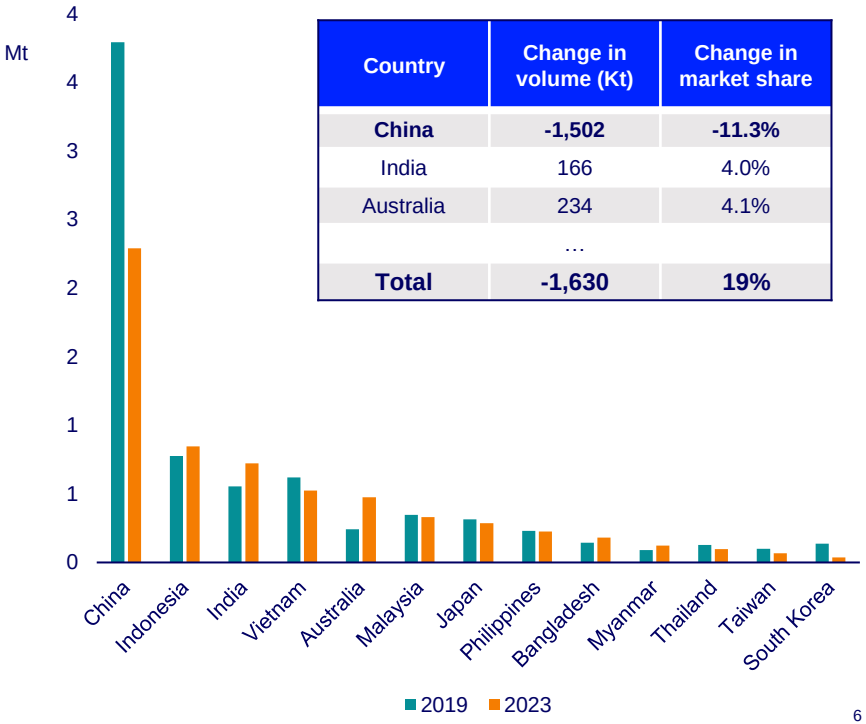
Less export to China due to its higher self-sufficiency

Polyethylene trade partners for ASEAN + South Asia, Import



Country	Change in volume (kt)	Change in market share
Saudi Arabia	345	0.2%
United States	**-421**	**-6.9%**
South Korea	312	2.2%
China	314	2.8%
Oman	350	3.2%
	...	
Total	**1,684**	**18%**

Polyethylene trade partners for ASEAN + South Asia, Export



Country	Change in volume (Kt)	Change in market share
China	**-1,502**	**-11.3%**
India	166	4.0%
Australia	234	4.1%
	…	
Total	**-1,630**	**19%**

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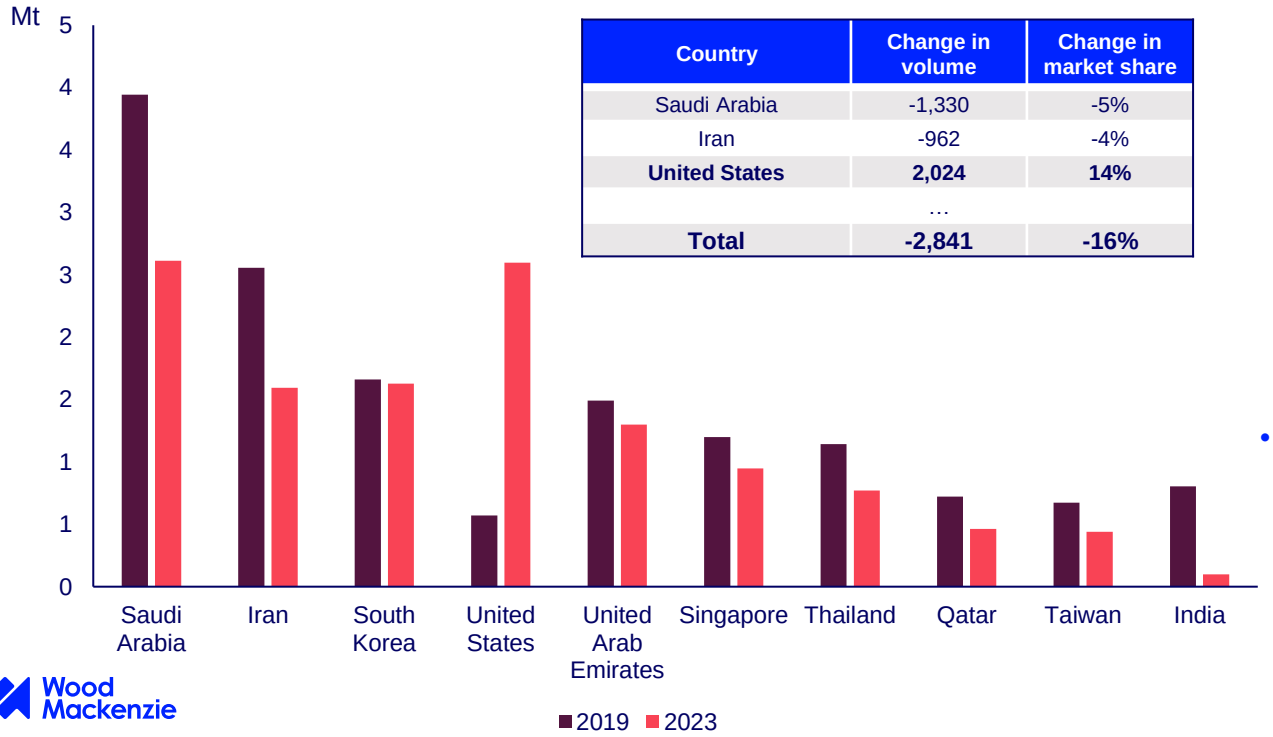
Source: Wood Mackenzie Global Polyethylene Investment Horizon Outlook, H2 2024

The US-origin PE cargoes higher China's market share against the trend

Additional two million tons of US-origin PE were shipped to China 2019 vs 2023, gaining 14% increase in market share

Polyethylene trade partners for China, Import



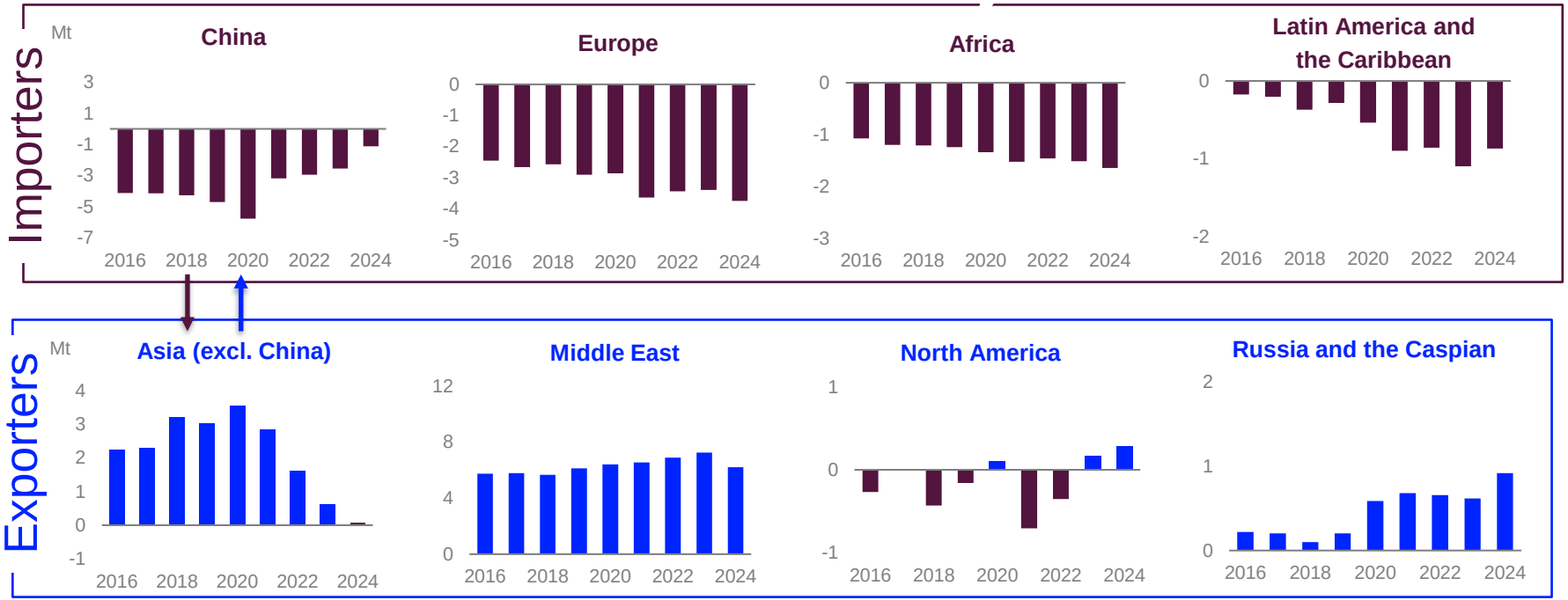
Country	Change in volume	Change in market share
Saudi Arabia	-1,330	-5%
Iran	-962	-4%
United States	**2,024**	**14%**
	…	
Total	**-2,841**	**-16%**

- The US-origin market share rose against the trend despite lower total PE imports into China, up by 2 million tons or 14% of market share from 2019 to 2023.
  - Strong demand for high grades
  - Cheaper freight
  - Ends of Trade-war V1
  - Weaker demand during Covid for other regions
- The rest of world's PE exports to China fell, notably from the Middle Eastern region, down by 2.79 million or 15.9% of market share for the same period.

PP

Global Polypropylene Trade

China PP import shrinking post 2020 amid capacity expansion, also lead to Asia (excluding China) lower export, coupled with strong regional demand growth. Europe, Africa and Latin America to remain net importers.



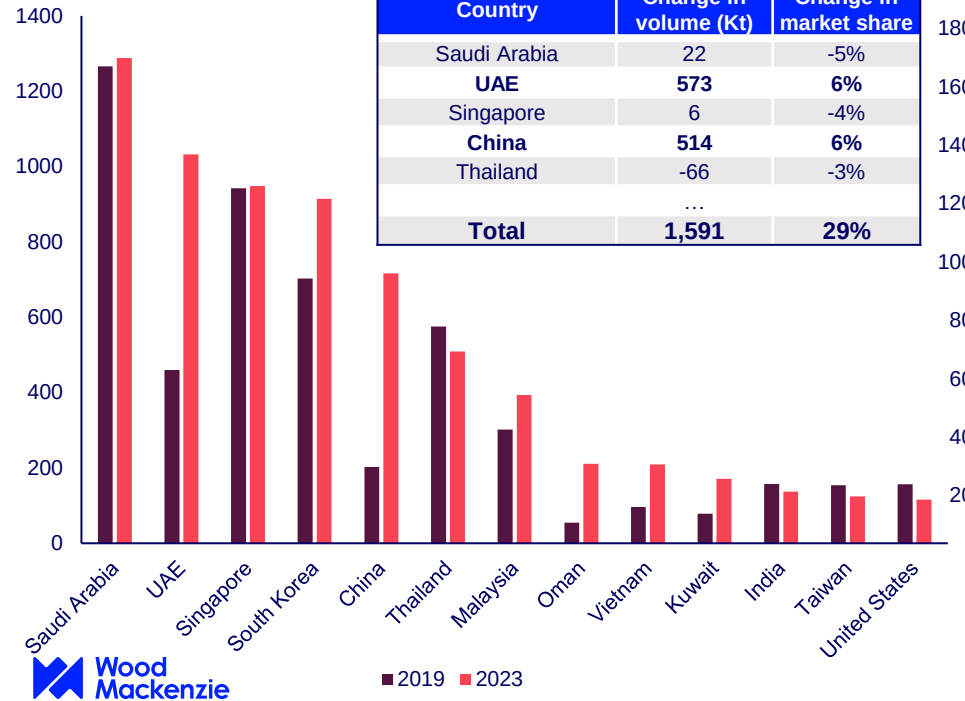
Source: Wood Mackenzie Global Polypropylene Investment Horizon Outlook, H2 2024

Fast-growing polypropylene supply in China is impacting the Asian trade dynamic

Asian PP trade volume vs China flipped by over one million tons from 2019 to 2023

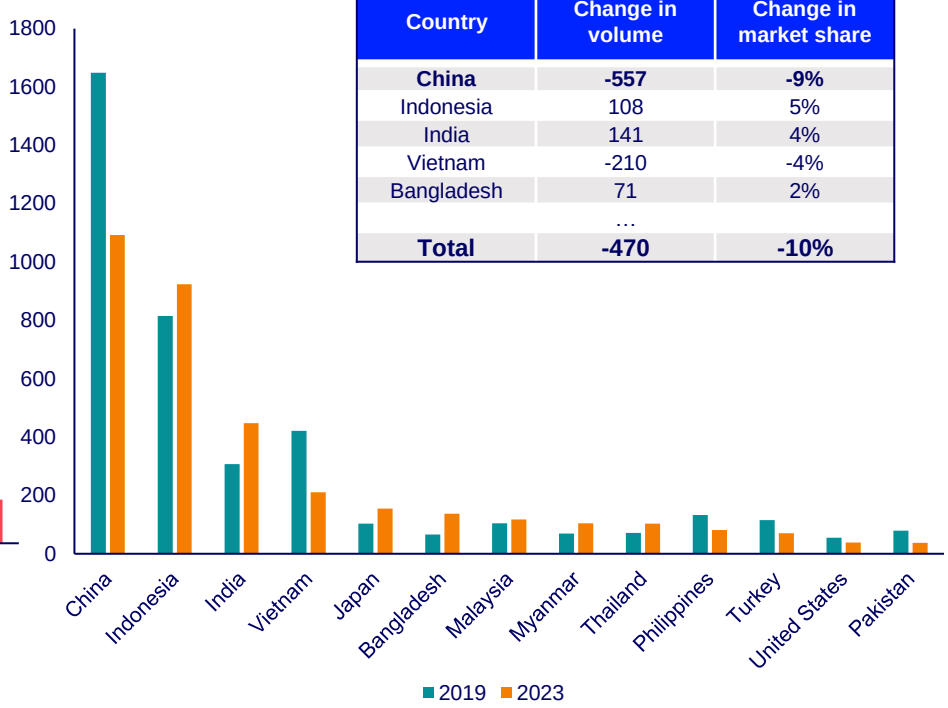
Polypropylene trade partners for ASEAN + South Asia, Import

Country	Change in volume (Kt)	Change in market share
Saudi Arabia	22	-5%
UAE	**573**	**6%**
Singapore	6	-4%
China	**514**	**6%**
Thailand	-66	-3%
	…	
Total	**1,591**	**29%**



Polypropylene trade partners for ASEAN + South Asia, Export

Country	Change in volume	Change in market share
China	**-557**	**-9%**
Indonesia	108	5%
India	141	4%
Vietnam	-210	-4%
Bangladesh	71	2%
	…	
Total	**-470**	**-10%**



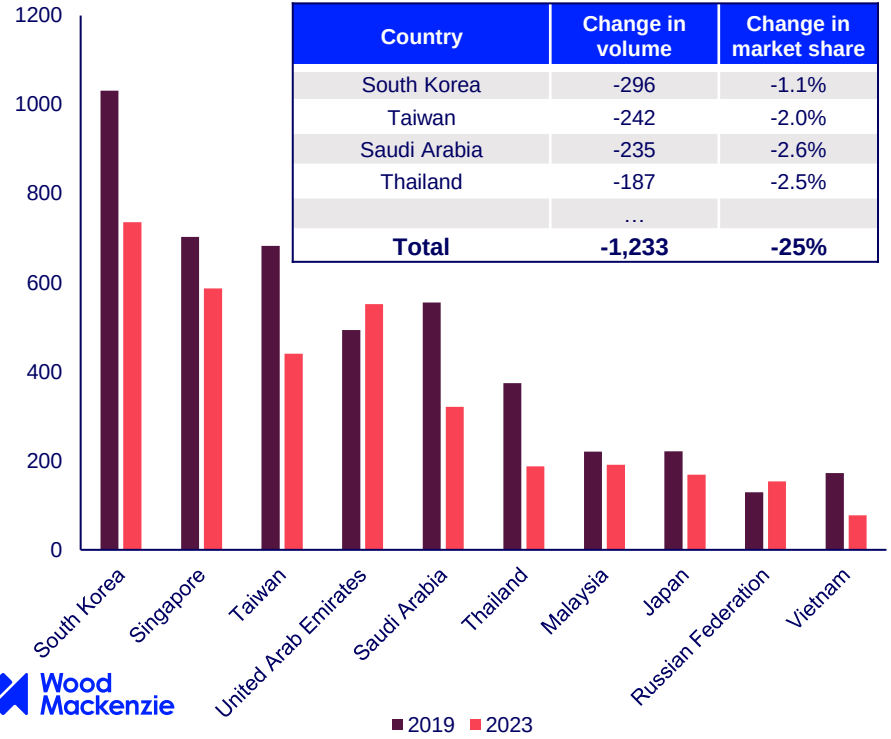
Source: Wood Mackenzie Global Polypropylene Investment Horizon Outlook, H2 2024

China PP trade evolution, amid rapid growing capacity

China's PP trade position flipped by more than two millions tons from 2019

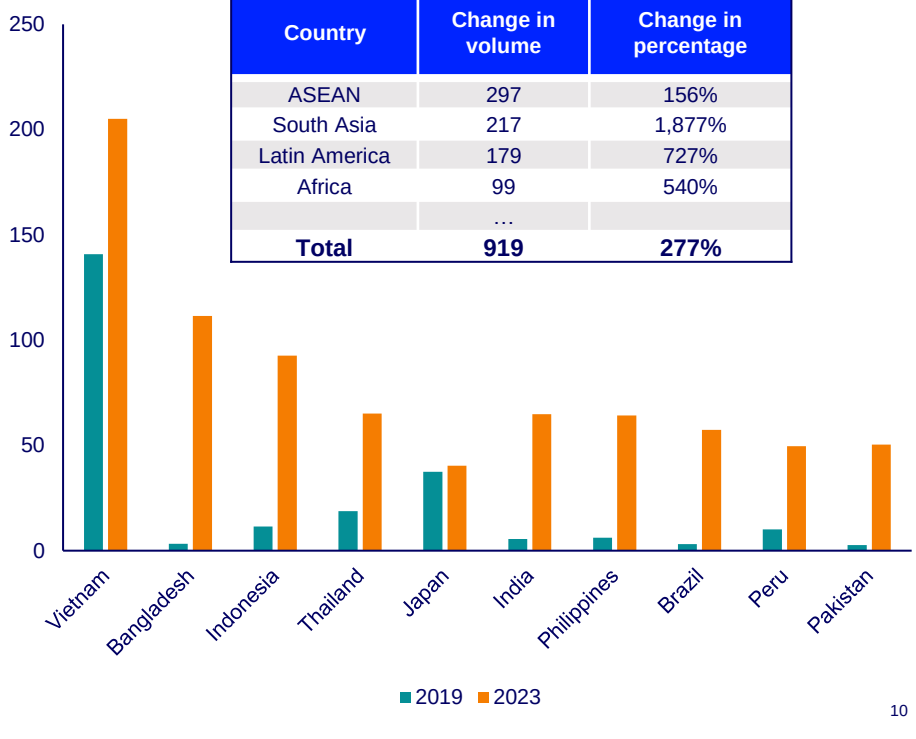
Polypropylene trade partners for China, Import

Country	Change in volume	Change in market share
South Korea	-296	-1.1%
Taiwan	-242	-2.0%
Saudi Arabia	-235	-2.6%
Thailand	-187	-2.5%
	…	
Total	**-1,233**	**-25%**



Polypropylene trade partners for China, Export

Country	Change in volume	Change in percentage
ASEAN	297	156%
South Asia	217	1,877%
Latin America	179	727%
Africa	99	540%
	…	
Total	**919**	**277%**



Key factors affecting polyolefins trade flow in 2025-2030

Please note all Supply and Demand figures are based on pre-Tariff

Polyolefins indicators

Key factors affecting polyolefins market

Disruptive impacts have been a feature of global markets this year, including:

- Russia-Ukraine conflict
- Economic slowdown (Potentially recession)
- Trade wars
- Geo-political conflict
- Logistic interruption
- Overcapacity
- Volatile feedstock cost
- Waste and recycling
- Carbon emission reduction
- Plastic usage legislation

Polyethylene

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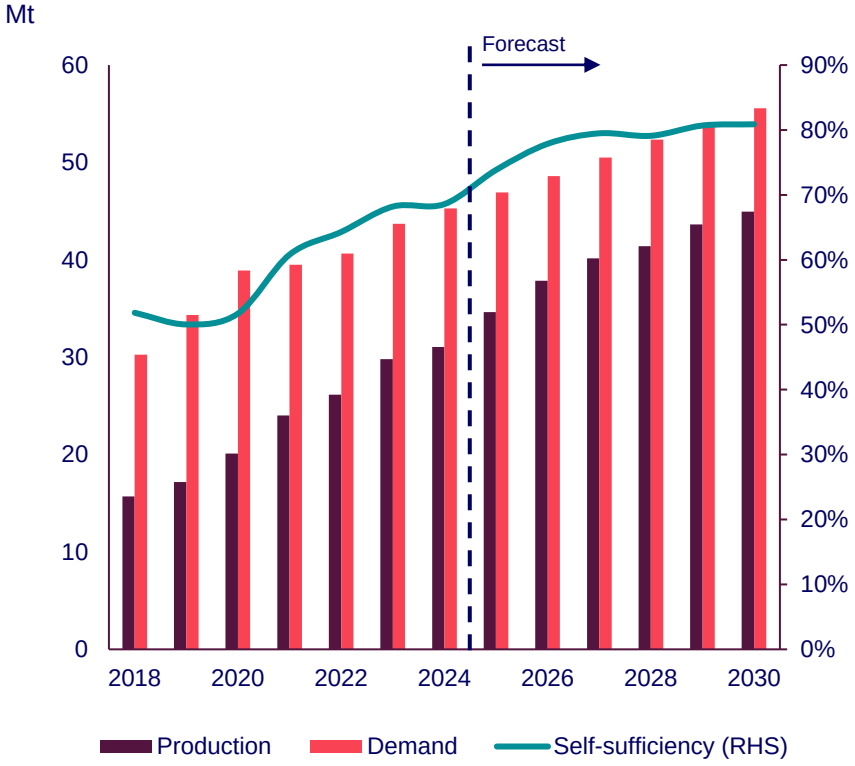
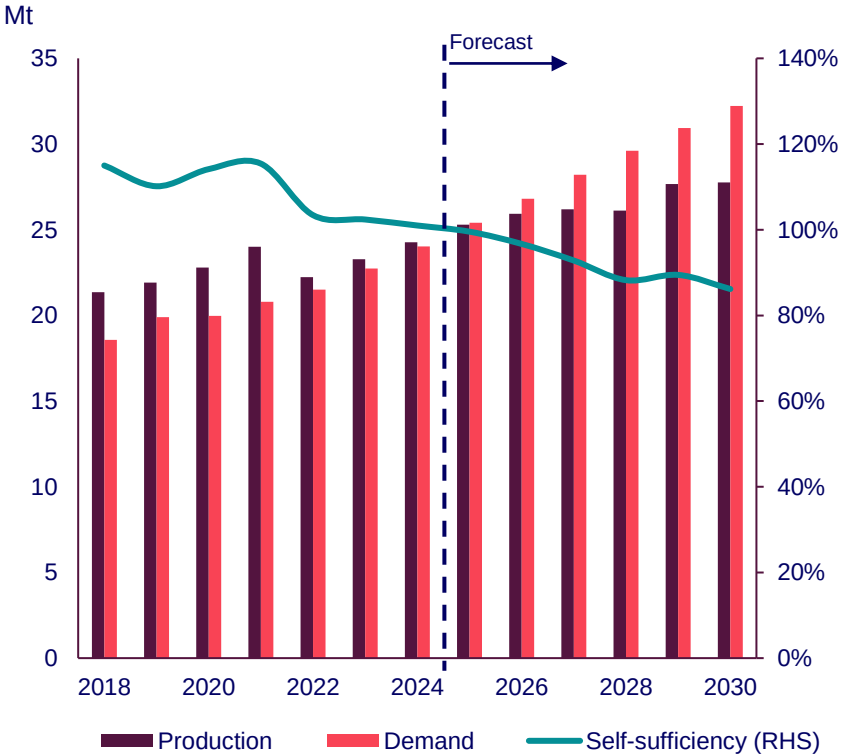
Asian PE self-sufficiency trend is leading the shift of regional trade flow

China PE S/D balance 2018-2030



Asia (Excl. China) PE S/D balance 2018-2030



Source: Wood Mackenzie Global Polyethylene Investment Horizon Outlook, H2 2024

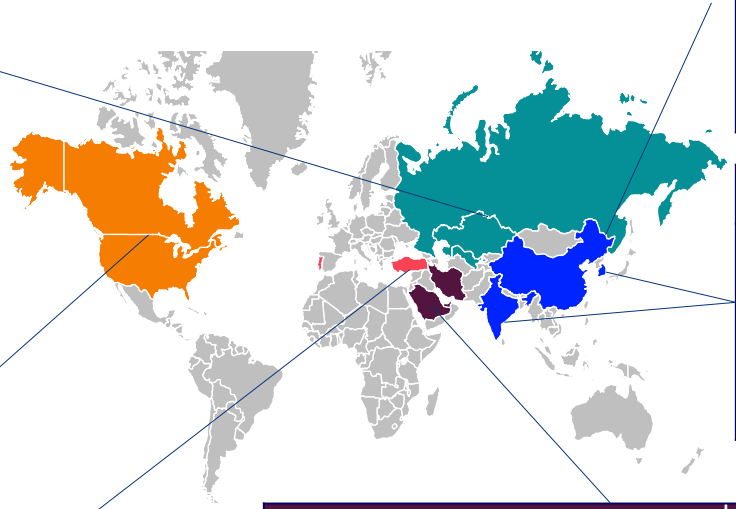
Global PE capacity to grow by 45.3 million tons in next 5 years

Projects - Russia and Caspian	Start-up time	Capacity (Kt/year)
Russia - Irkutsk Oil Company	Jul-25	650
Russia - Kazanorgsintez JSC	Jan-26	100
Russia - Nizhnekamskneftekhim JSC - (NKNK)	Jan-29	300
Russia - Sibur Amur GCC	2026-2028	2,400
Uzbekistan - Uzbekneftegaz	Jan-26	280
Uzbekistan - Jizzakh Petroleum	Aug-27	180
Kazakhstan - KazMunayGas	Jan-28	1,250
		~5.46 million

Projects - China	Start-up time	Capacity (Kt/year)
PetroChina Guangxi Petrochemical Company	Oct-25	1,150
SABIC Fujian Petrochemical Co., Ltd.	Jul-26	1,000
Sinopec Maoming Petrochemical Company	Jul-26	600
CNOOC and Shell Petrochemicals Company Limited (CSPC)	Mar-28	1,000
…		**~24.6 million**

Projects - North America	Start-up time	Capacity (Kt/year)
USA - Chevron Phillips Chemical Company LLC	Jul-26	2000
Canada - Dow Chemical Canada	Jul-30	2000
		~4 million

Projects - Asia (Excl. China)	Start-up time	Capacity (Kt/year)
India - HPCL Rajasthan Refinery Ltd	Mar-26	1,000
India - Bharat Petroleum	Jan-29	1,150
South Korea - Hanwha Solution - GS Energy EVA	Oct-25	300
South Korea - S-Oil	Apr-26	1,320
Brunei Hengyi Industries	Jan-29	1,050
		~4.82 million



Projects – Europe	Start-up time	Capacity (Kt/year)
Portugal - Repsol Chemicals	Jan-26	300
Turkey - SASA	Jan-30	1,100
		~1.4 million

Projects - Middle East	Start-up time	Capacity (Kt/year)
Iran - Bushehr Petrochemical	Jan-26	300
Iran - Dehdasht Petrochemical	Jan-26	300
UAE - Abu Dhabi Polymers Company Ltd. (Borouge)	Jun-26	1,400
QatarEnergy/CP Chem JV	Jul-27	1,700
Saudi Aramco Total Refining and Petrochemical - Satorp	Jul-27	1,200
Saudi Arabia - Al-Saidi Trading and Industry	Jan-29	150
		~5.05 million

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Source: Wood Mackenzie Global Polyethylene Investment Horizon Outlook, H2 2024

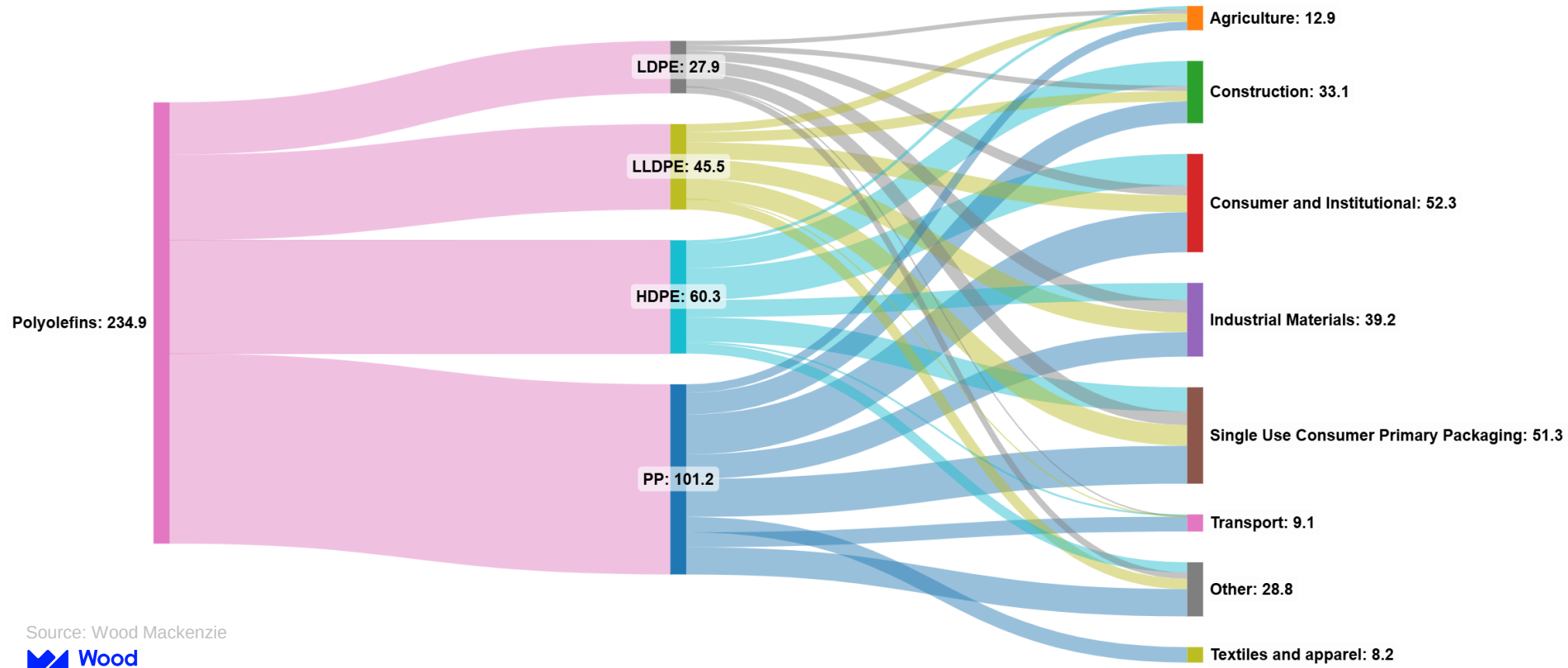
Olefins value chain rationalization underway, mainly in Europe due to weak outlook

Company	Country	Year of shutdown	Capacity (kt)	Comments
ExxonMobil	France	2025	425 E, 225 P	Closure
Versalis	Italy	2025	440 E, 230 P	
SABIC	Netherlands	2024	590 E, 335 P	
Versalis	Italy	2022	490 E, 245 P	
Total	Belgium	2027	610 E, 310 P	
Versalis	Italy	Expected 2025	490 E, 280 P	
SABIC	United Kingdom	n/a	865 E to 450 E, 400 P to 0 P	Capacity reduction, switch from naphtha to ethane, expected restart 2025
Dow	Netherlands	2025	600 E, 300 P	Indefinite idling for economic reasons
PKN Orlen	Poland	n/a	740 E, 370 P	New capacity postponed to 2030, may be cancelled
Eneos	Japan	2027-2028	448 E, 260 P	Closure
Maruzen Petrochemical	Japan	2026	525 E, 280 P	
Petrochina Fushun	China	2022	140 E, 70 P	
Sinopec Tianjin	China	2022	200 E, 100 P	
Petrochina Jilin	China	2022	150 E	
Petrochina Lanzhou	China	2025-2026	240 E, 120 P	
Petrochina Dushanzi	China	2025-2026	220 E	
Sinopec Maoming	China	2026	380 E	
Sinopec Qilu	China	2023	800 E, 400 P	Closure due to incident, to rebuild new cracker starting 2027

Company	Country	Asset Type	Year of shutdown	Capacity (kt)	Comments
Total	Belgium	PP	2021	145	Closure
LyondellBasell	Italy	PP	2024	235	
ExxonMobil	France	LLDPE	2025	425	
ExxonMobil	France	PP	2025	270	
Versalis	Italy	LDPE	Latest 2029	170	
PKN Orlen	Poland	LDPE	n/a	250	New capacity postponed to 2030, may be cancelled

Source: Wood Mackenzie Global Polypropylene Investment Horizon Outlook, H2 2024

Polyolefins demand by application in 2024



Source: Wood Mackenzie

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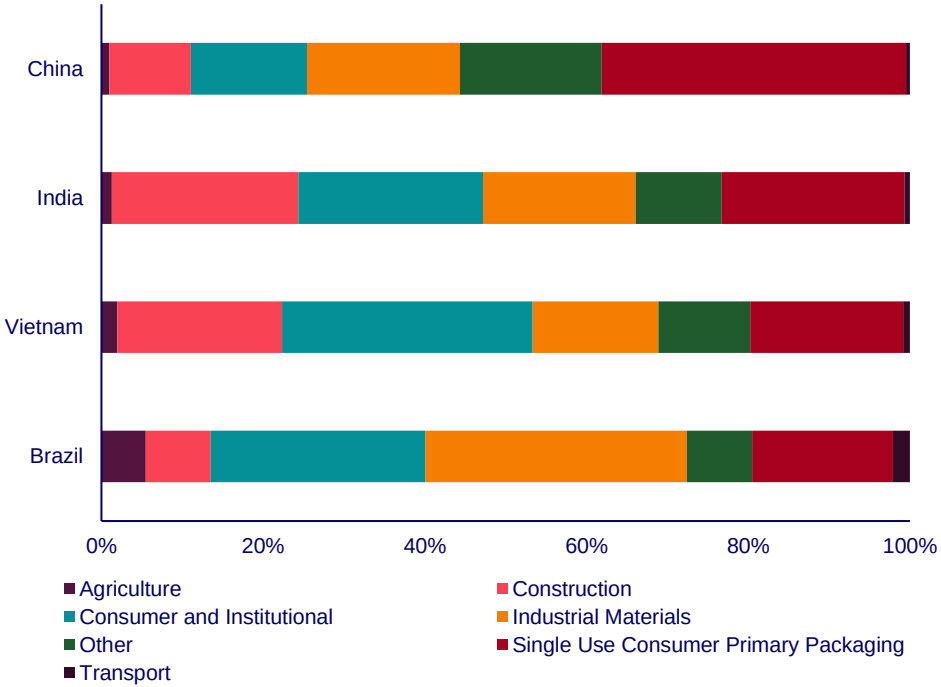
Top 10 Countries for Polyethylene Demand

India is expected to have the highest polyethylene demand growth rate over next five years at 7.5% p.a.

Country	2024 Demand Volume, Mt	2025-2030 Annual Growth
China	45.3	3.4%
United States	13.6	2.7%
India	8.3	7.5%
Brazil	2.8	2.1%
Germany	2.8	0.3%
South Korea	2.7	0.3.%
Japan	2.3	0.0%
Mexico	2.3	4.5%
Turkey	2.3	2.6%
Vietnam	2.2	6.5%

Source: Wood Mackenzie

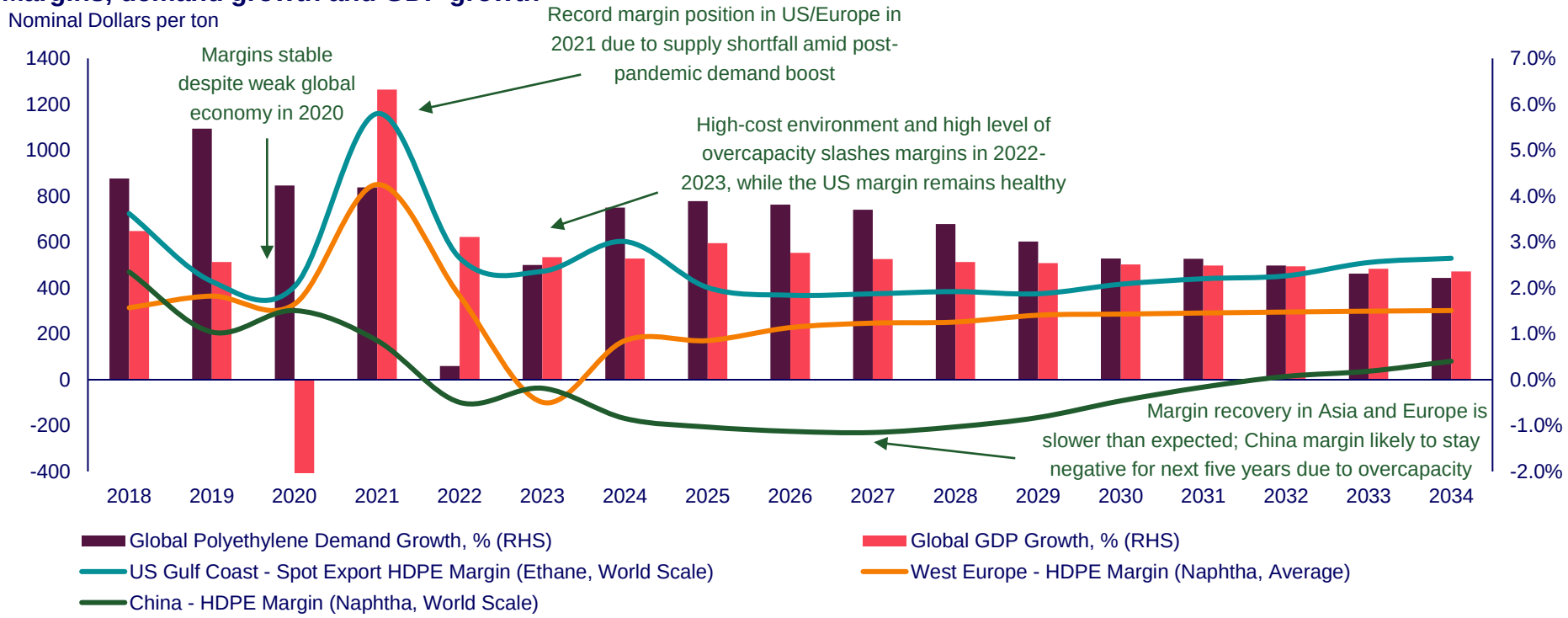
Demand growth by application in 2030



Polyethylene margins under pressure in Asia and Europe from 2023 to 2031

Margins to be challenged by overcapacity, slow demand growth and volatile energy costs over the next decade.

Margins, demand growth and GDP growth



Source: Wood Mackenzie

Polypropylene

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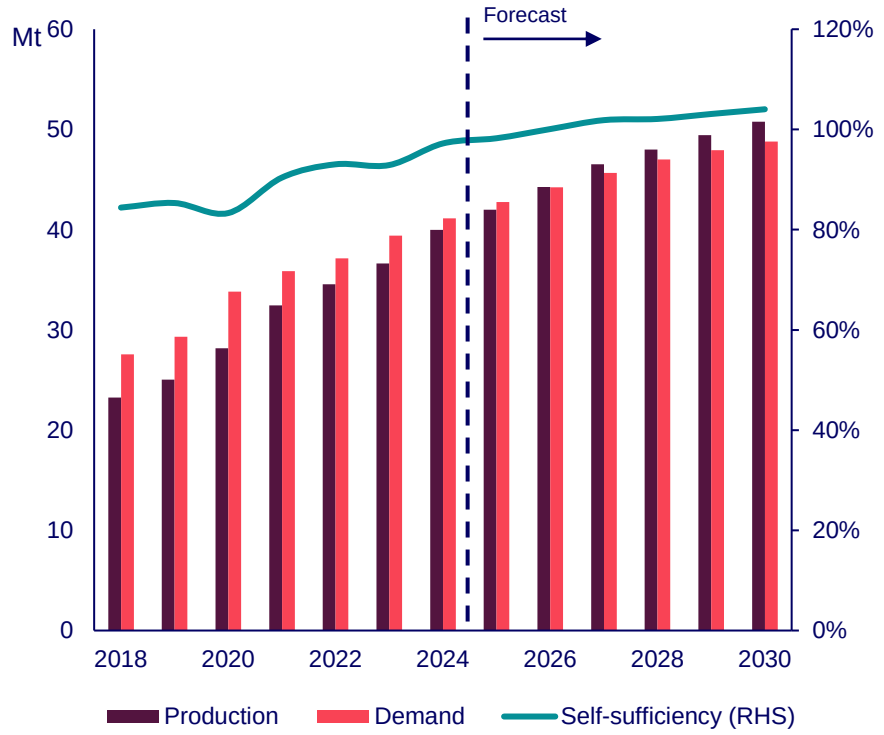
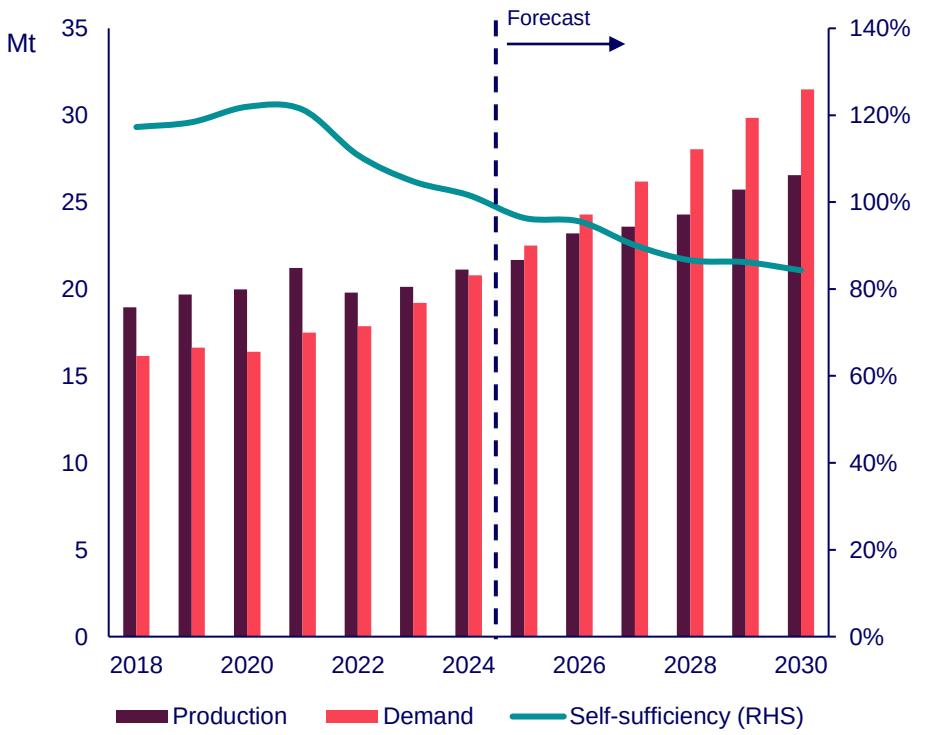
PP

Asian polypropylene fundamentals reshape trade flow

China PP S/D balance 2018-2030



Asia (Excl. China) PP S/D balance 2018-2030



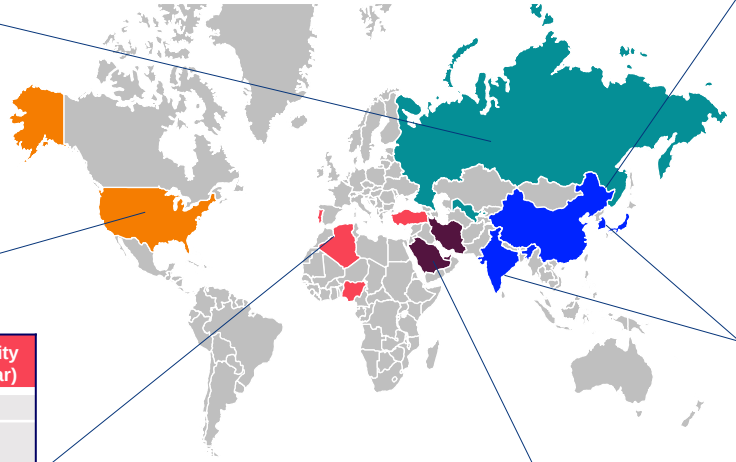
Source: Wood Mackenzie Global Polypropylene Investment Horizon Outlook, H2 2024

Global PP capacity to expand by 32 million tons in next 5 years

Projects - Russia and Caspian	Start-up time	Capacity (Kt/year)
Russia - Nizhnekamskneftekhim JSC - (NKNK)	Jan-29	400
Russia - Sibur Amur GCC	2026-2028	400
Uzbekistan - Jizzakh Petroleum	Aug-27	257
Uzbekistan - Uzbekneftegaz	Jan-26	100
		1.16 Million

Projects - North America	Start-up time	Capacity (Kt/year)
Formosa Plastics Corporation USA	Oct-25	250

Projects - Europe/Africa	Start-up time	Capacity (Kt/year)
Nigeria - Dangote Group	Jan-26	450
Algeria - STEP (Sonatrach Total Entreprise Polymeres)	Jul-27	550
Portugal - Repsol Chemicals	Jan-26	300
Turkey - Ceyhan Polipropilen Uretim	Jan-26	450
Turkey - SASA	2027-2029	2,000
Turkey - Bayegan Group	Jan-28	450
		~4.2 million



Projects - China	Start-up time	Capacity (Kt/year)
ExxonMobil Chemical Ventures Limited	Jun-25	850
Shandong Yulong Petrochemical Co., Ltd.	2025-27	1,100
CNOOC and Shell Petrochemicals Company Limited (CSPC)	Mar-28	500
Xinjiang Baofeng Coal-based New Material Co., Ltd., Changji	Jul-29	1,950
SABIC Fujian Petrochemical Co., Ltd.	Jul-26	950
…		**~18.52 million**

Projects - Asia (Excl. China)	Start-up time	Capacity (Kt/year)
Indian Oil Corporation Ltd, Barauni/Vadodara/Panipat	2025-2026	1,070
India - HPCL Rajasthan Refinery Ltd	Mar-26	910
India - Gail (India) Ltd, Raigad District/Pata	Apr-Oct 25	560
India - Chennai Petroleum Corp	Oct-26	475
India - Bharat Petroleum, Kochi/Bina	2027-2029	1,050
Indonesia - Lotte Chemical Indonesia	Jul-25	250
Brunei Hengyi Industries	Jan-29	1,000
Japan - Prime Polymer Co.	Jul-25	200
South Korea - S-Oil	Apr-26	250
		~5.77 million

Projects - Middle East	Start-up time	Capacity (Kt/year)
Iran - Mehr Petro Kimia Co (Mepekco)	Jan-26	450
Iran - Mahestan Alay Petrochemical Company	Jul-25	450
Saudi Arabia - Advanced Petrochemical/SK Gas JV	May-25	800
Saudi Arabia - Alujain Holding Corporation	Jul-26	600
		~2.3 million

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Source: Wood Mackenzie Global Polypropylene Investment Horizon Outlook, H2 2024

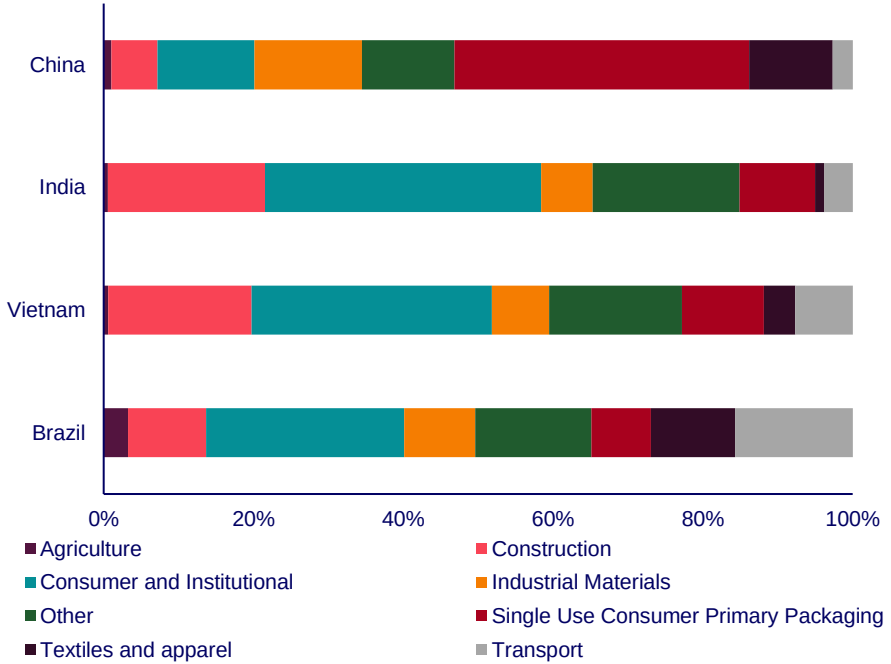
PP

Top 10 Countries for Polypropylene Demand

India polypropylene demand growth is projected to be highest globally over next 5 years at 11.1% per year.

Country	2024 Demand Volume, Mt	2025-2030 Annual Growth
China	41.1	2.7%
India	8.0	11.1%
United States	6.2	2.9%
Turkey	2.5	2.7%
Indonesia	2.3	5.9%
Japan	2.3	0.3%
Vietnam	1.8	7.1%
South Korea	1.7	0.6%
Brazil	1.6	2.5%
Thailand	1.5	2.4%

Year-on-Year Polypropylene Demand Growth, by application

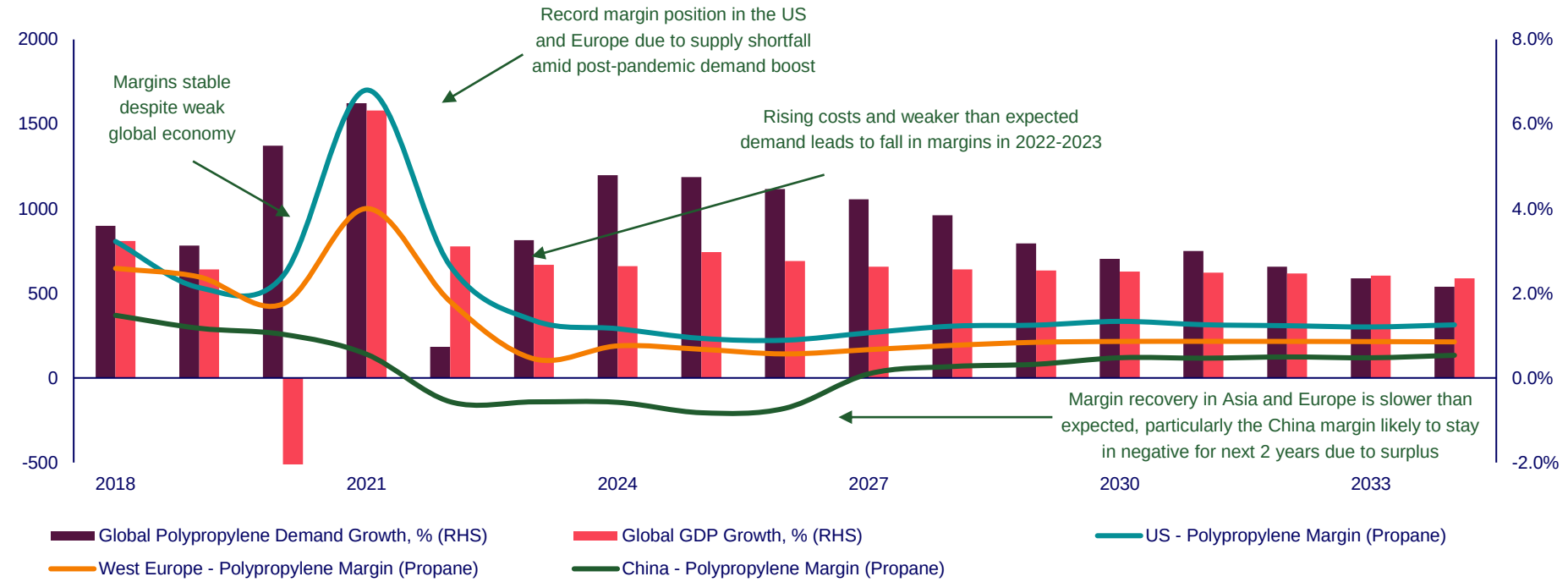


PP

Polypropylene margins under pressure in Asia 2023-2027

Polypropylene margins to be challenged by overcapacity, slow demand growth through the end of the decade.

Margins, demand growth and GDP growth



Source: Wood Mackenzie Chemicals

Regulatory landscape and trade barriers

Risks from various of angles will continue to damage the expansion of international trade

Examples of higher trade barriers in polyolefins trade market

Country	Products	Time	Details	Status	Against
Brazil	PE	Nov, 2024	ADD*	Under investigation	US and Canada
Brazil	PP	Feb, 2024	ADD	Implemented	US
Philippine	HDPE	Oct 2023-2025	Safeguard	Implemented	All
India	LDPE	Apr. 2023	ADD	Implemented	Saudi Arabia, Singapore, Thailand, and the US
Indonesia	PP - block copolymers	Feb, 2025	ADD	Under investigation	South Korea, Vietnam, UAE, Malaysia, Singapore
Indonesia	PE/PP	Feb, 2024	Import quota	Reportedly suspended	All

ADD = Anti-dumping duty

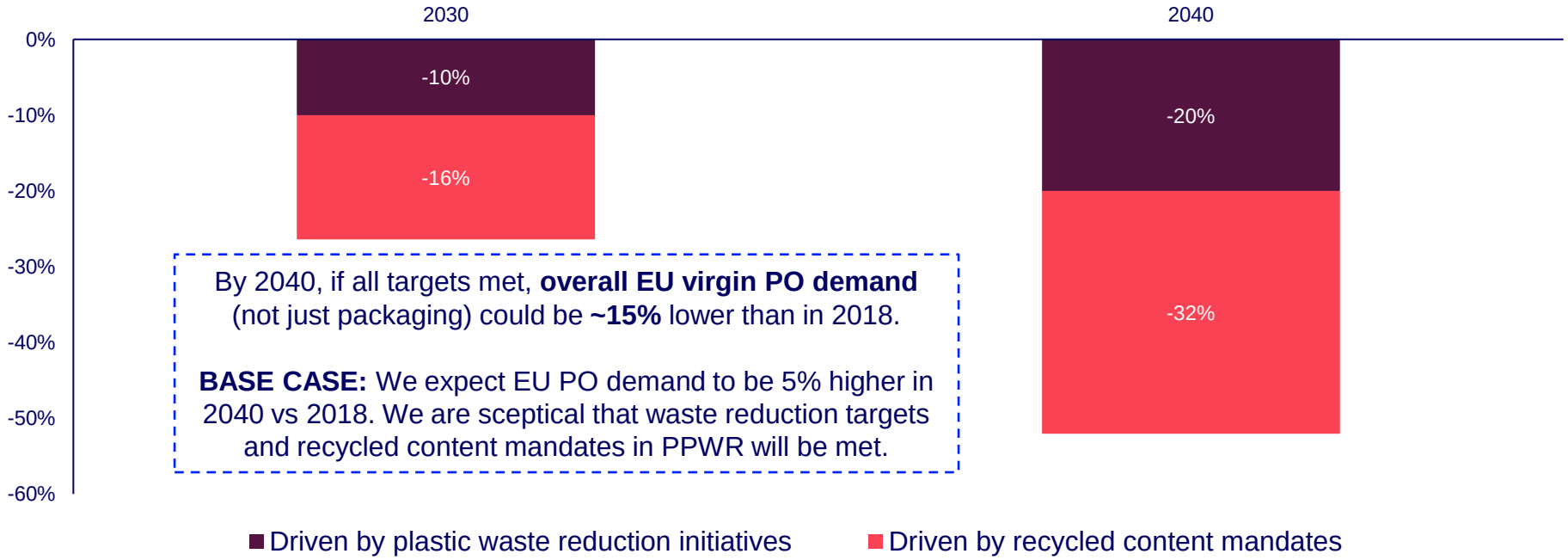
- The self-protective trade policies were introduced more often in recent years amid weaken margins and rising geopolitical tensions, including:
  - Anti-dumping duty
  - Safeguard
  - Import quota
  - Quality control measure
- The legislation on virgin plastic usage and recycled content mandates drive down the demand forecast in the packaging and other application sectors.
- Geopolitical tensions all play a huge role in polyolefins trade, in terms of project progress, demand growth and logistics.

Source: Wood Mackenzie,

Europe's packaging legislation – PPWR – largest risk to virgin PO demand to 2040

EU virgin PO demand in packaging could fall by **~25% by 2030 and ~50% by 2040 vs 2018 levels**

Impact of EU's PPWR on Virgin PO Packaging Demand (vs 2018 levels, assuming all objectives achieved as planned)



Source: Wood Mackenzie

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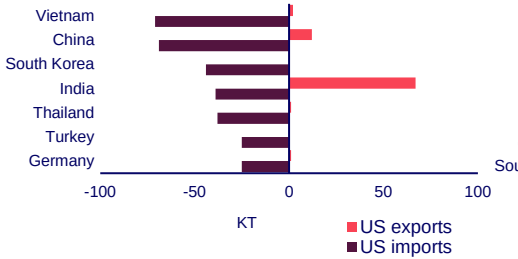
PO

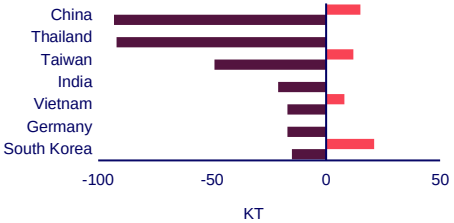
US trade position with key countries pre-High Tariffs

High tariffs on China is expected to shift production to India, boosting its economy

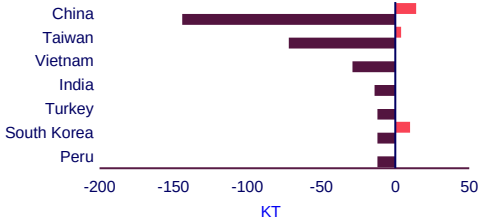
Key trade partners in Agriculture in 2024



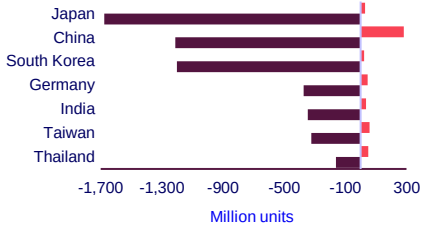
Consumer & institutional



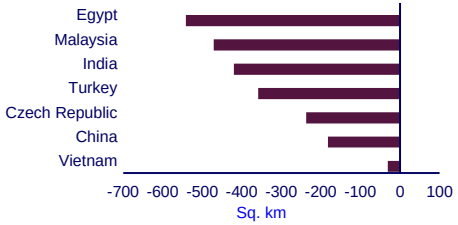
Single-Use Consumer Primary Packaging



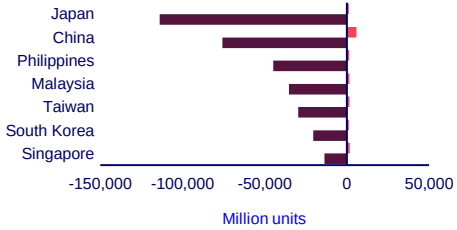
Transport



Textiles & apparels



Other applications



Tariff impact on end-use sectors for key trading countries with US

Countries	Agriculture	Consumer and Institutional	Single Use Consumer Primary Packaging	Transport	Textiles and apparel	Other (electrical)
Germany						
Turkey						
Thailand						
India						
South Korea						
China						
Vietnam						
Taiwan						

High impact
Moderate impact
Low impact

Source: GTT, Wood Mackenzie

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PO

Core Impact of US-China Trade War on Polyolefin Market

1. China Supply Chain Restructuring

PE Import Gap and Shift in Sources

US supply in China PE imports (2024)	17%
US PE export to China	Close to zero
Who will fill in the supply gap?	South Korea and Middle East producers Domestic new capacity (Exxon Huizhou and Yulong Petrochemical)

PP Cost Pressure and PDH Operation Challenges

PDH-based PP capacity in China	22%
Heavily relies on US propane import	59%
If tariffs persist, for PDH-based PP	Existing capacity - very very low o/r New projects - delayed

2. Demand Contraction in PE Products

Direct Tariff Impacts

PE demand lost from Chinese export products	**300,000-350,000** tons per month Mainly in stretch film and tape
PP demand lost from Chinese export products	~50,000 tons per month

The PE demand lost > US PE supply cut	Cut import and accelerate asset rationalization in China
The PP demand lost < PDH-based PP supply cut	Support PP prices Delay China's trade position change to a net-exporter

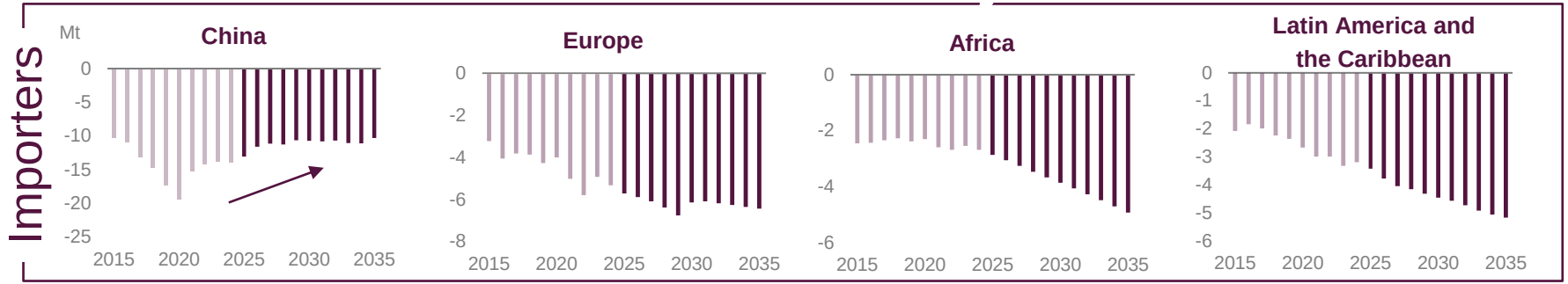
Wood Mackenzie

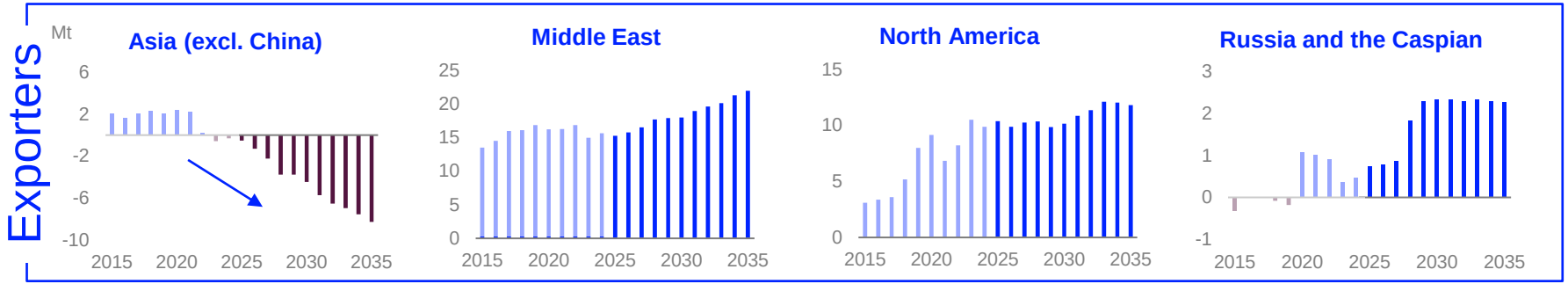
2025-2030 Trade flow forecast

PE

Global Polyethylene Trade

Global trade volume under pressure due to greater self-sufficiency in China, rising geopolitical tensions and protectionist measures across key regions. Asia ex China, Europe, Africa and Latin America to become larger net importers over time.





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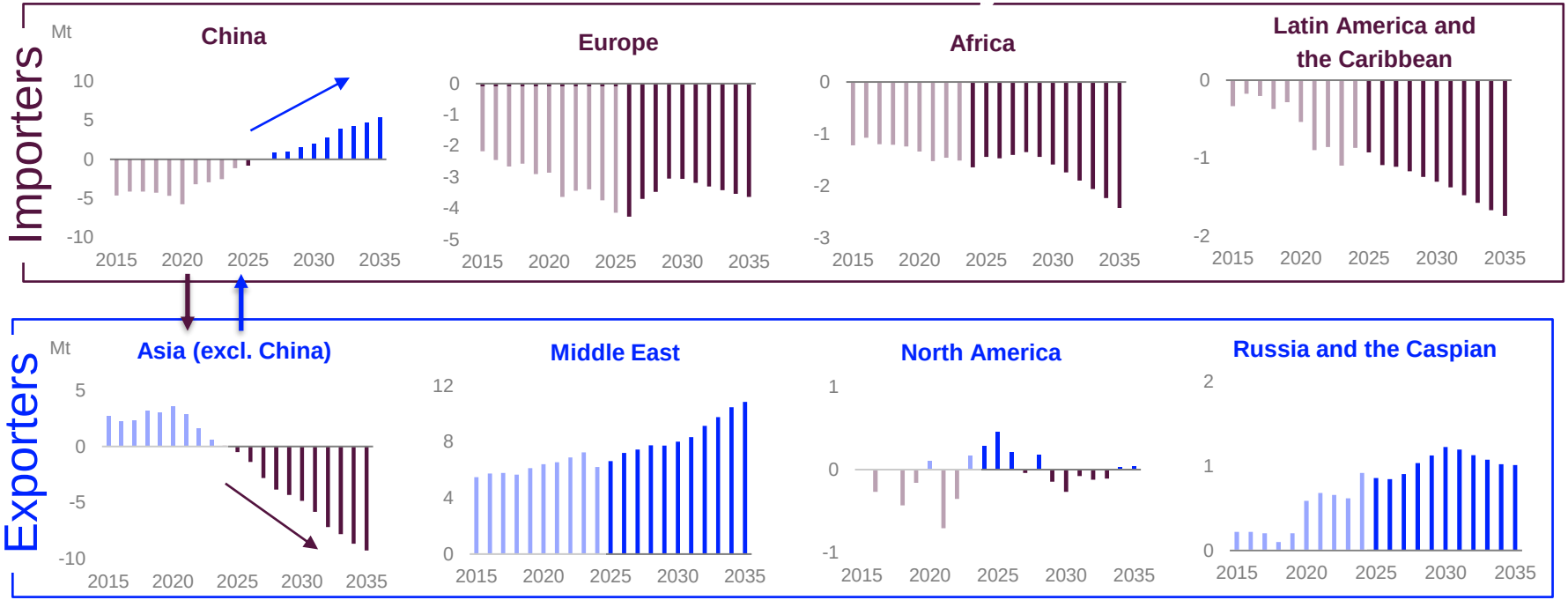
Net import Net export

PP

Global Polypropylene Trade

China is expected to become a net exporter by 2027, while Asia (excluding China) is projected to shift to a net importer by 2026, driven by strong regional demand growth. Europe, Africa and Latin America to remain net importers.



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Key Takeaways

China's fast-growing capacity reshaping the trade market

- The rapid PE capacity growth in China from 2020 will likely to continue for another 4-5 years.
- Despite the PP new investment slowing down post-2027, China's PP trade position is likely to shift to a net exporter in recent years.
- New investment will largely fall into the MTO/CTO route, with better economic and stable feedstock supply.
- Polyolefins producers in the rest of Asia will face cost competitiveness challenges, with increasing pressure from lower-cost imports.

Asian polyolefins asset rationalization likely to continue

- Weak cost competitiveness, aging assets, and slower demand growth in Asia may force polyolefins producers to shut down existing assets.
- Growing plastic bans and regulations are pushing producers to rethink their product portfolios, with increased focus on recycled content.

Trade war V2

- China is expected to lose 300,000–350,000 tons per month in PE demand and around 50,000 tons per month in PP demand, which will also impact final product demand across the rest of Asia.
- The US PE producers are expected to lose significant market share, creating opportunities for non-tariffed countries to gain ground.

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Thank you

Appendix

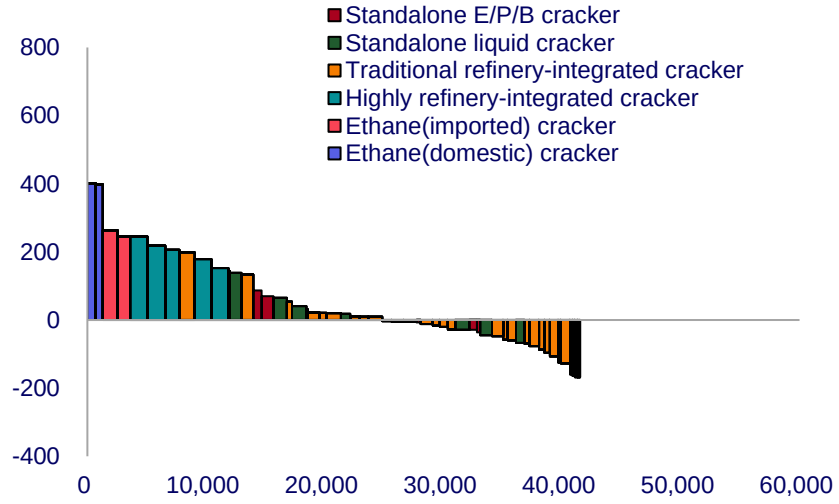
PE

China steam cracker margin curve (2024 / 2029)

In 2024, 57% of China's cracker capacity will suffer negative margins; ethane crackers and highly refinery integrated crackers remain competitive. 2029 will see improved margins with some small crackers still in the red

2024 China Ethylene Margin Curve

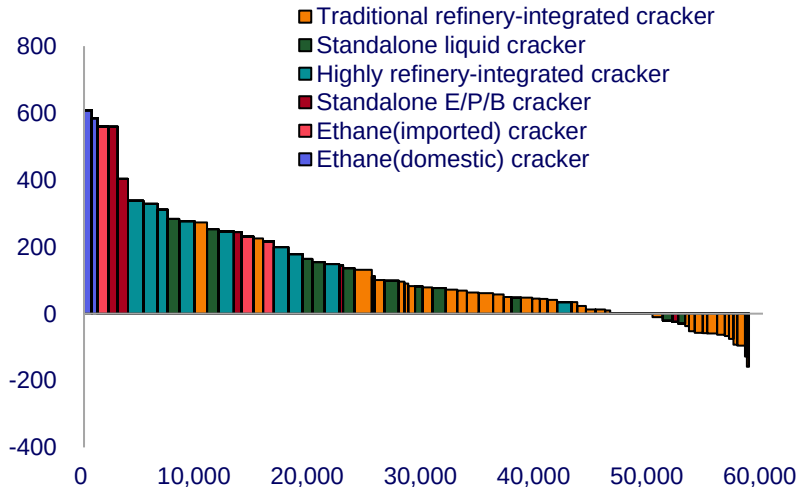
$/ton, China Ethylene Margin



Thousand Tons, 2024 Ethylene Production

2029 China Ethylene Margin Curve

$/ton, China Ethylene Margin



Thousand Tons, 2029 Ethylene Production

Source: Wood Mackenzie Chemicals Ethylene Asset Benchmarking Tool (H2 2024). Values in Nominal Dollars.

Note: E - ethane, P – propane, B - butane

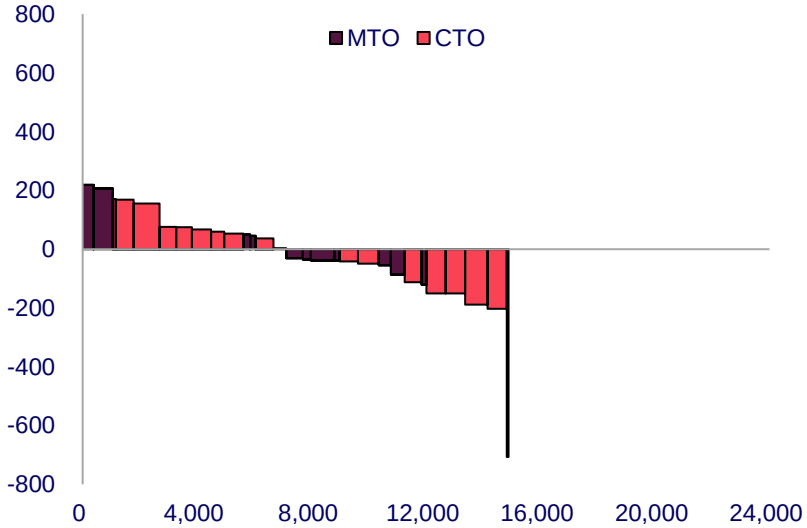
PE

China CTO/MTO margin curve (2024 / 2029)

52% of CTOs and MTOs suffered negative margins in 2024 with olefins prices capped by overbuild. CTO margins are expected to largely improve in forecast years with decreasing coal prices and increasing olefin prices. MTO remains uncompetitive with rising methanol prices amid limited methanol investments

2024 China CTO/MTO Olefins Margin Curve

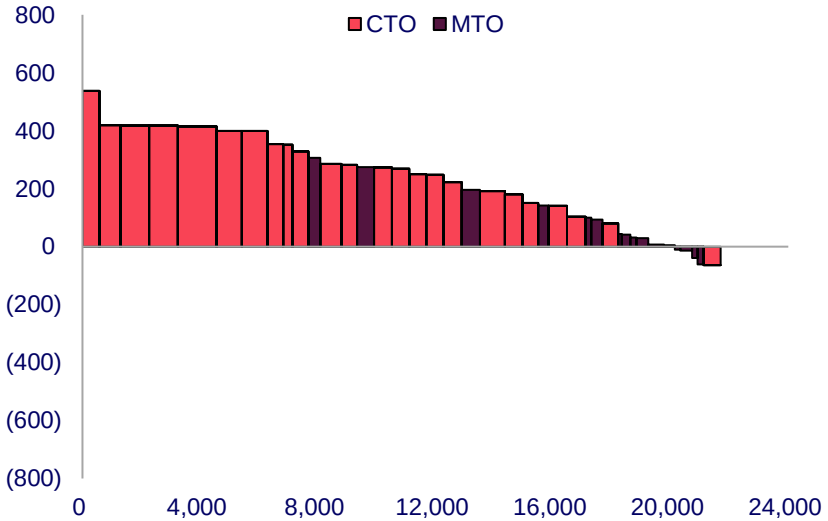
$/ton olefins, China Olefins Margin



Thousand Tons, 2024 Olefins Production

2029 China CTO/MTO Olefins Margin Curve

$/ton olefins, China Olefins Margin



Thousand Tons, 2029 Olefins Production

Source: Wood Mackenzie Chemicals Ethylene Asset Benchmarking Tool (H2 2024). Values in Nominal Dollars.

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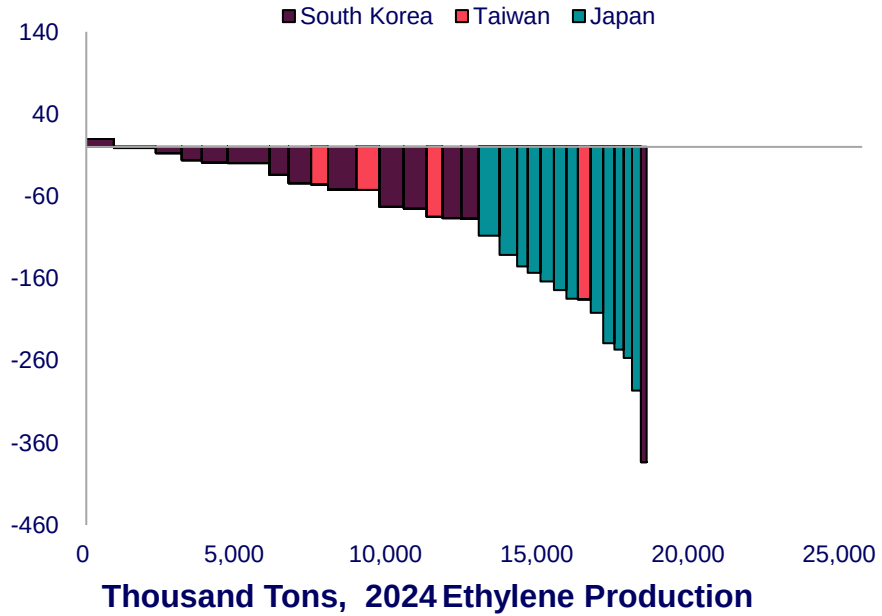
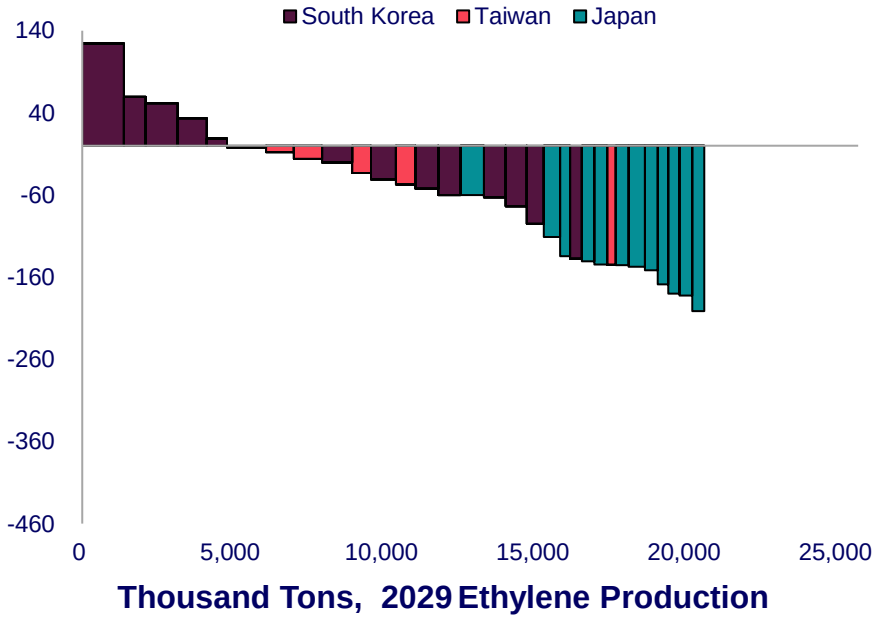
Northeast Asia (ex-China) ethylene margin curve (2024 / 2029)

Margin recovery remains elusive for most producers in Taiwan and Japan by 2029, amplifying rationalisation pressure on the laggards

2024 NE Asia (ex-China) Ethylene Margin Curve
$/ton, NEA ex-China Ethylene Margin



2029 NE Asia (ex-China) Ethylene Margin Curve
$/ton, NEA ex-China Ethylene Margin



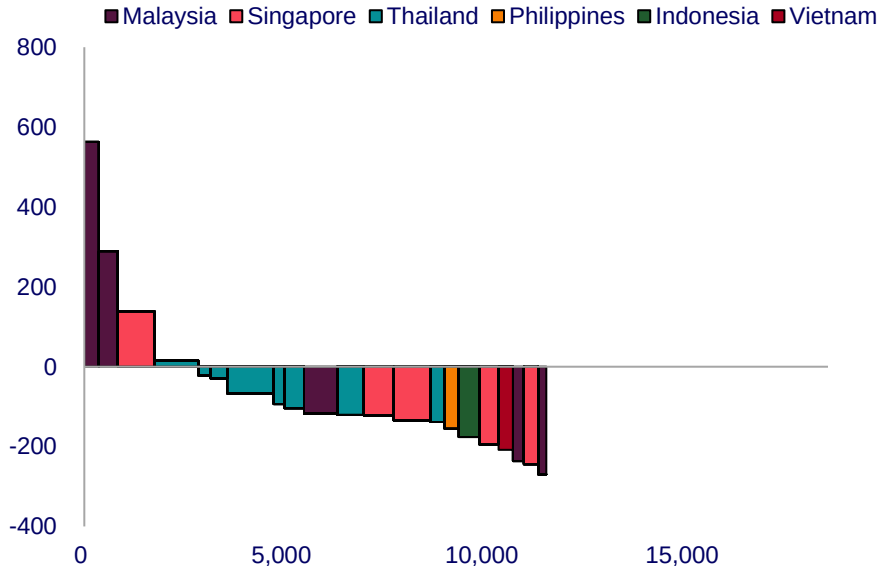
Source: Wood Mackenzie Chemicals Ethylene Asset Benchmarking Tool (H2 2024). Values in Nominal Dollars.

Southeast Asia ethylene margin curve (2024 / 2029)

Despite near-term challenges, ethane and crude oil-to-chemicals crackers will dominate the first quartile when the industry begins to recover in 2029

2024 Southeast Asia Ethylene Margin Curve

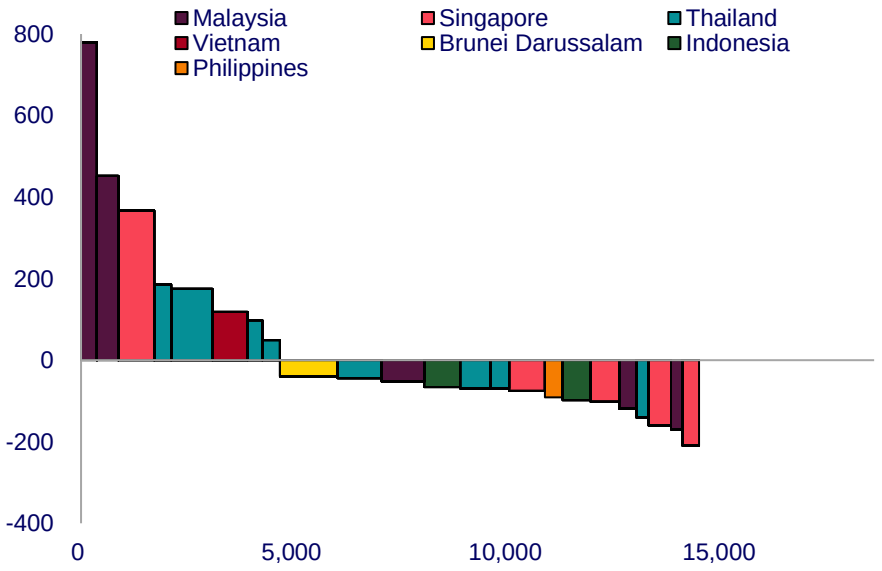
$/ton, Southeast Asia Ethylene Margin



Thousand Tons, 2024 Ethylene Production

2029 Southeast Asia Ethylene Margin Curve

$/ton, Southeast Asia Ethylene Margin



Thousand Tons, 2029 Ethylene Production

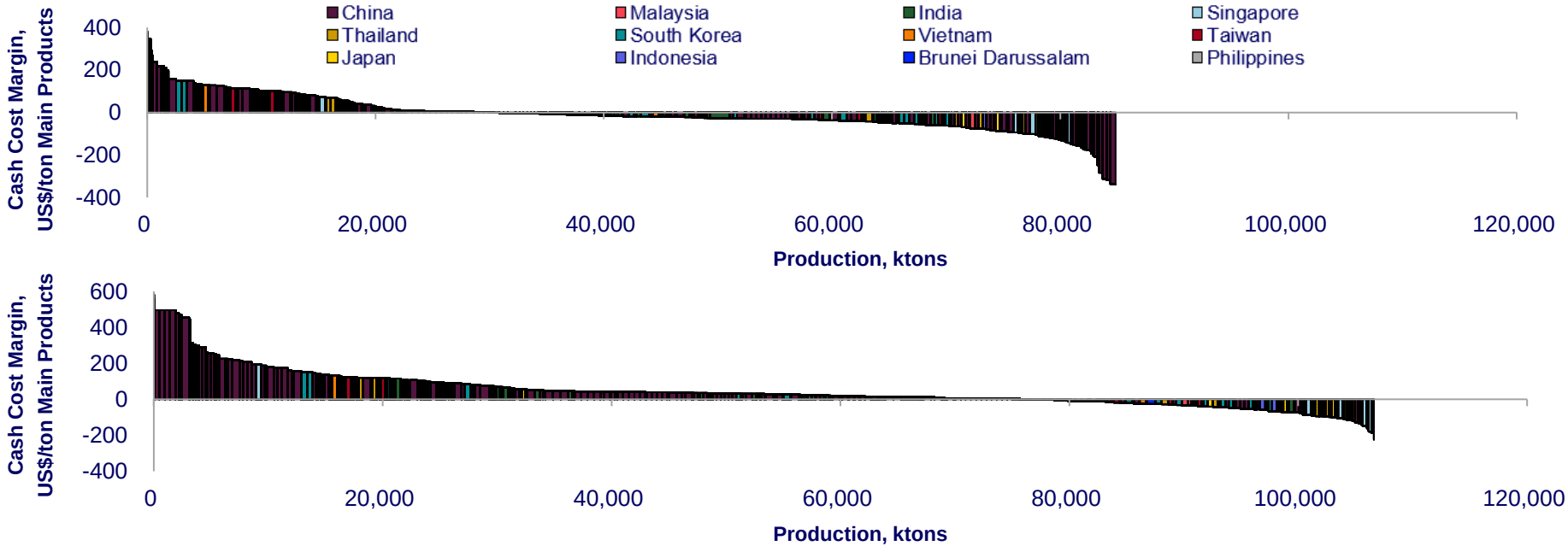
Source: Wood Mackenzie Chemicals Ethylene Asset Benchmarking Tool (H2 2024). Values in Nominal Dollars.

PP

Asia propylene margin curve (2024 / 2029)

2/3 Asia assets suffered negative margins in 2024, Japan and some China assets dominated the negative-margined assets. In 2029 only a limited ratio of assets will have negative margins with industry recovering

Asia propylene margin curve by country, 2024 (top) vs. 2029 (bottom)



Source: Wood Mackenzie Propylene Asset Benchmarking Tool, H2 2024

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Senior Analyst, Asia Polyolefins

Biography

Chris joined Wood Mackenzie's Chemicals Research team as a senior analyst in October 2022. He is responsible for polyolefin product analysis in Asia and update Asset Benchmarking Tools for polyethylene and polypropylene.

Prior to Wood Mackenzie, He worked for S&P Global Platts for 3 years, where he was an editor for various petrochemical products, He was responsible for price assessment, publish news, expand benchmark usage, develop and launch new price assessment. Product coverage include ethylene, polyethylene terephthalate, ethylene dichloride, vinyl chloride and styrene monomer.

Chris graduated from the Iowa State University with a Bachelor's degree in Chemical Engineering.

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