



Oil 2019 – Analysis and Forecasts to 2024

IEA Oil Industry & Markets Division

Presentation to the Spanish Energy Club, Madrid, 29 May 2019



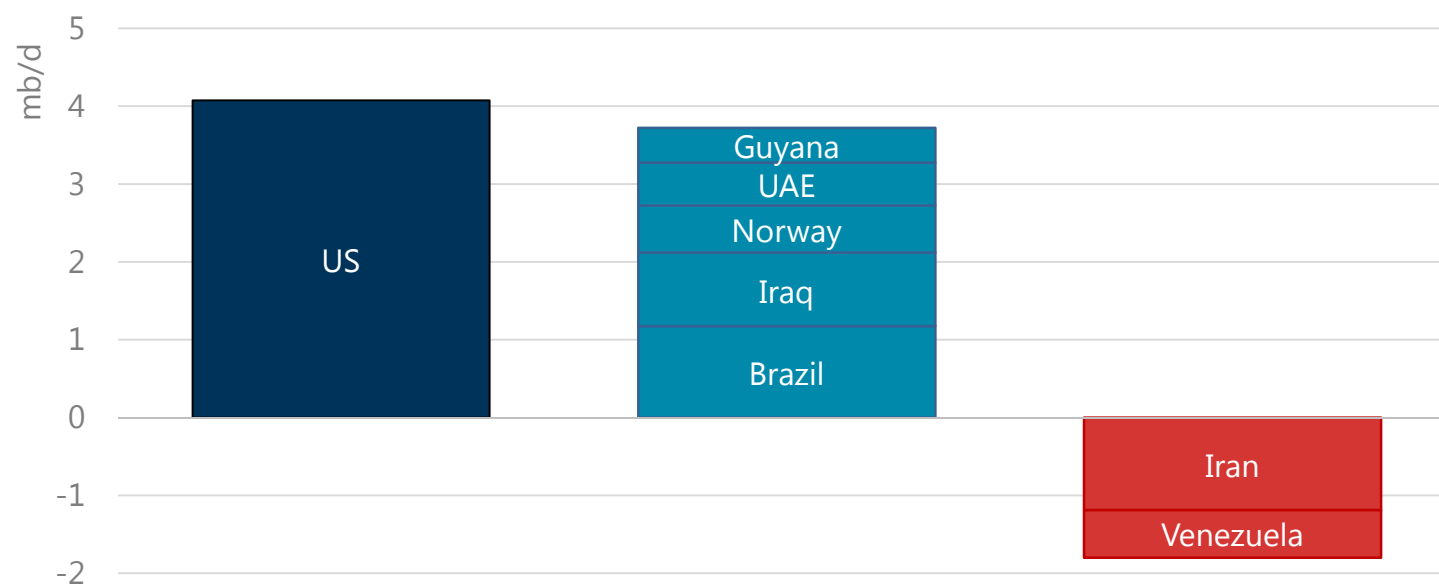


Supply

US leads the way in global supply growth



Change in total oil supply 2018-24

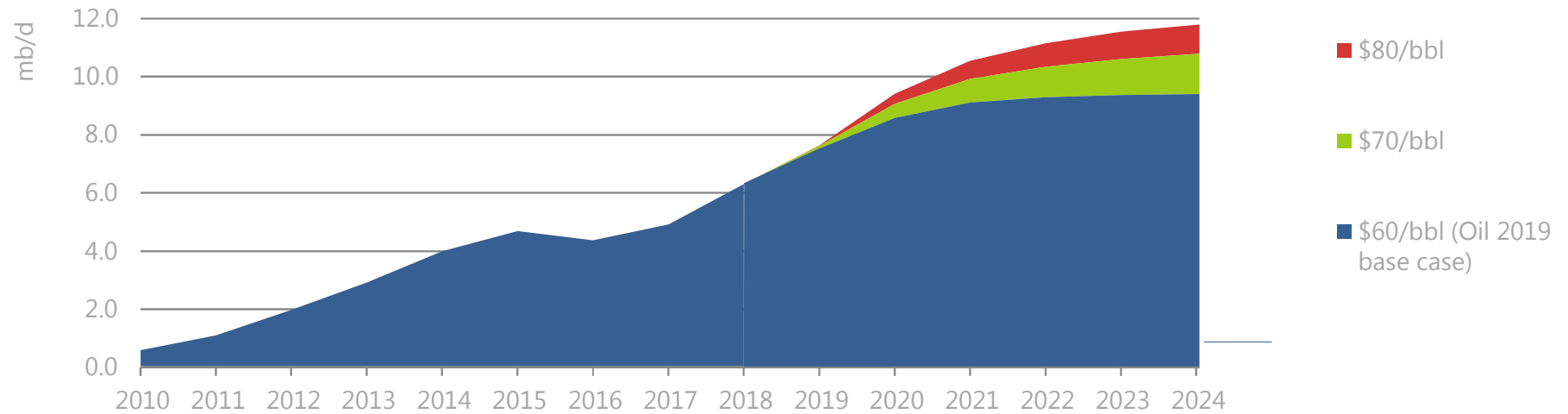


US expansion is 70% of global growth. Gains in Brazil, Iraq, Norway, the UAE and Guyana. Main declines in Iran and Venezuela.

US shale ready to respond to higher prices

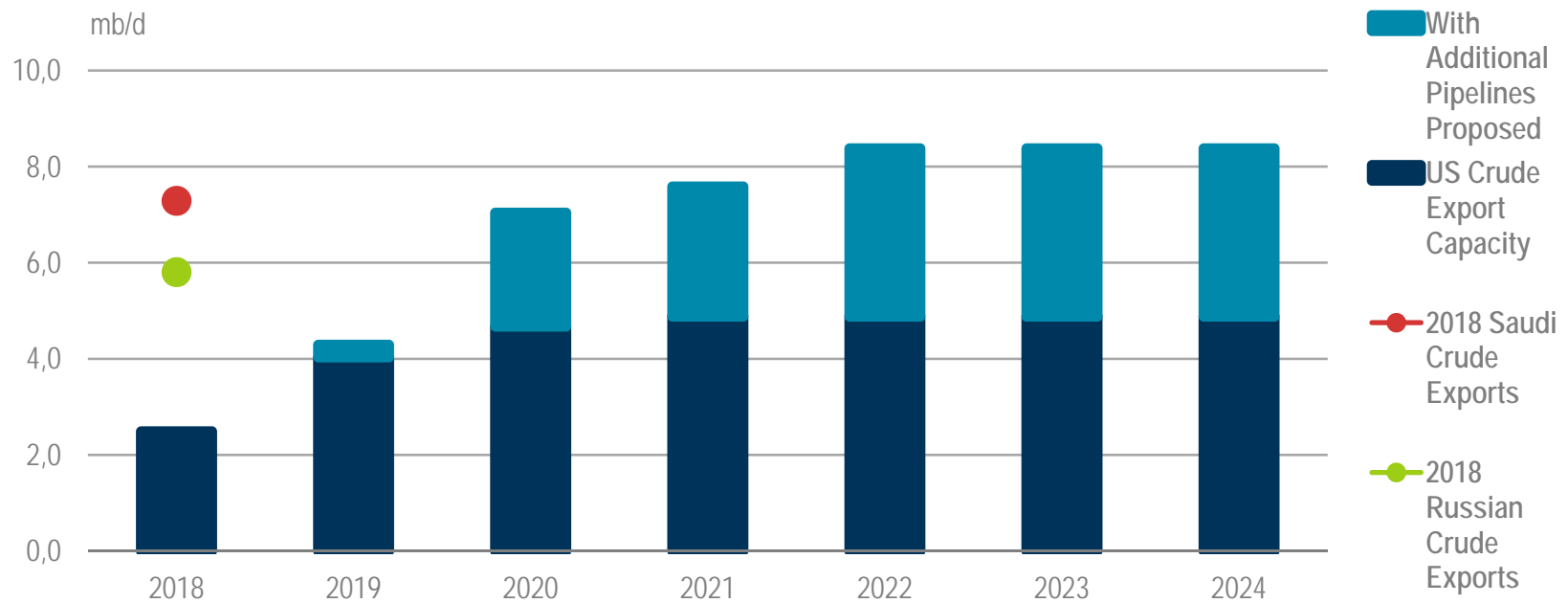


US shale oil prospects



Production up 3.3 mb/d at \$60/bbl, but could be 5.7 mb/d at \$80/bbl.

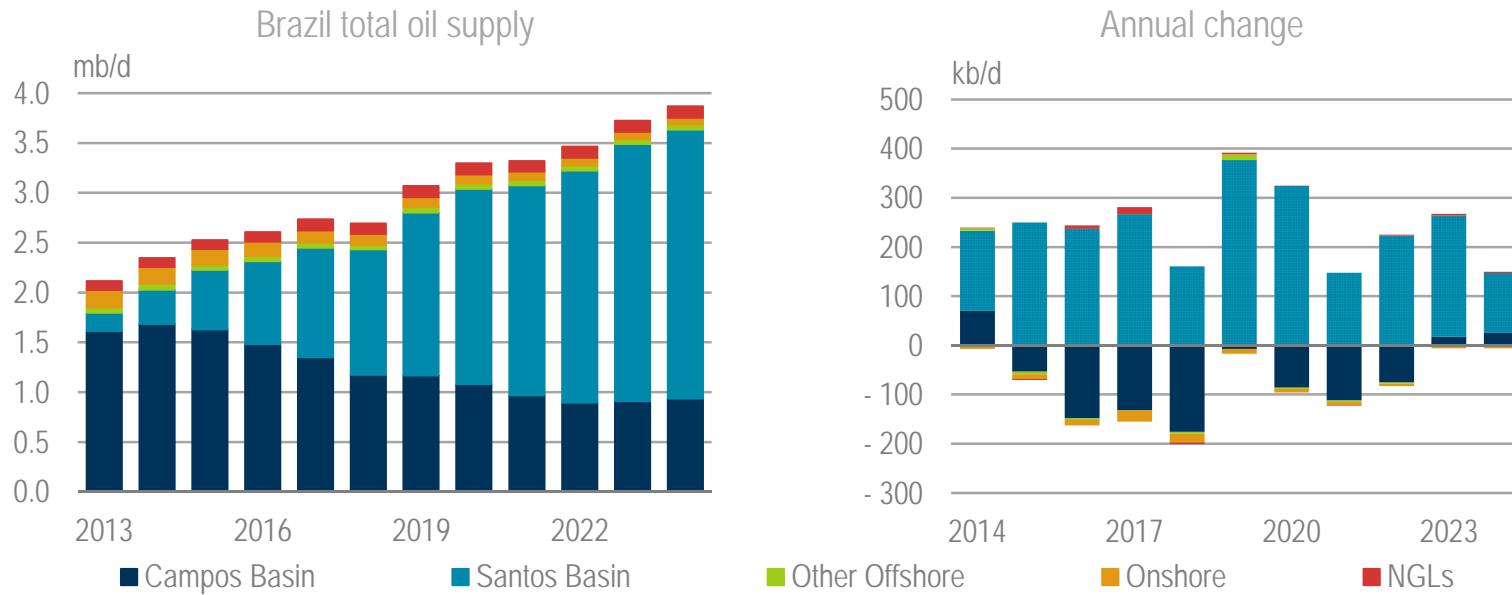
US crude export capacity no longer a constraint



* Based on pipelines currently under construction or in final development stage.

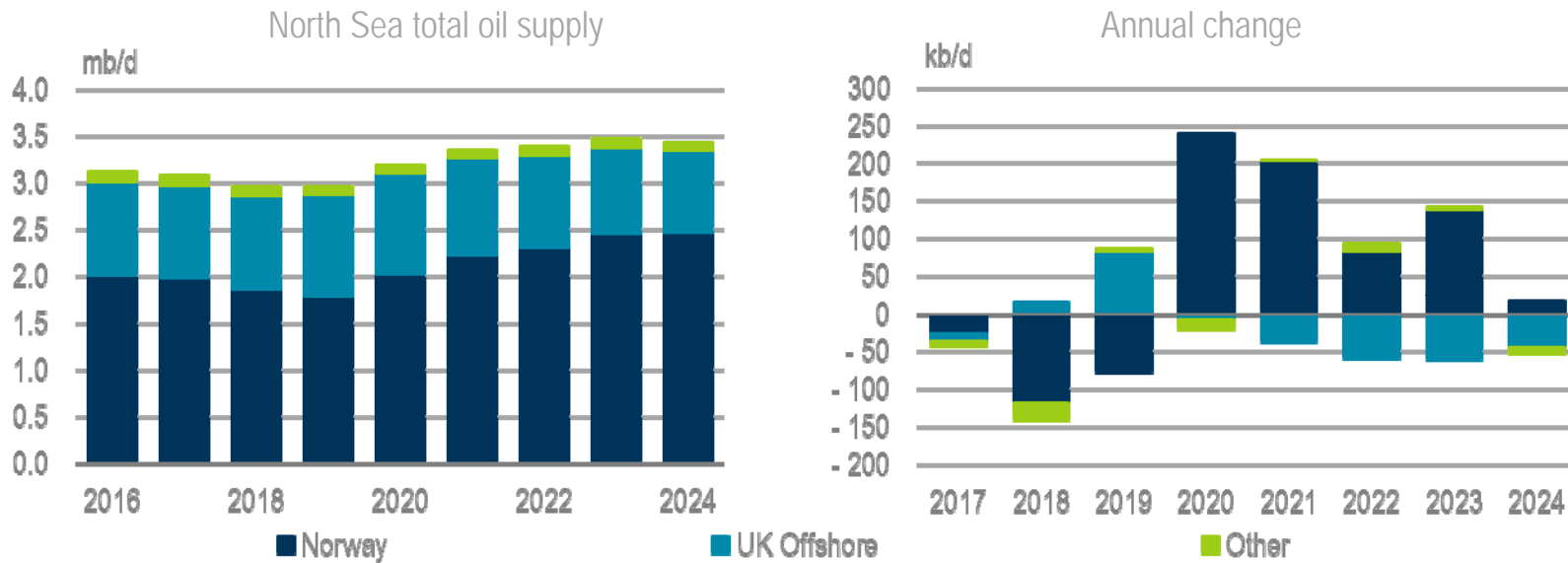
Enough pipelines planned to match Saudi exports, even if not all of them will be built.

Brazilian rebound around the corner – even as mature fields decline



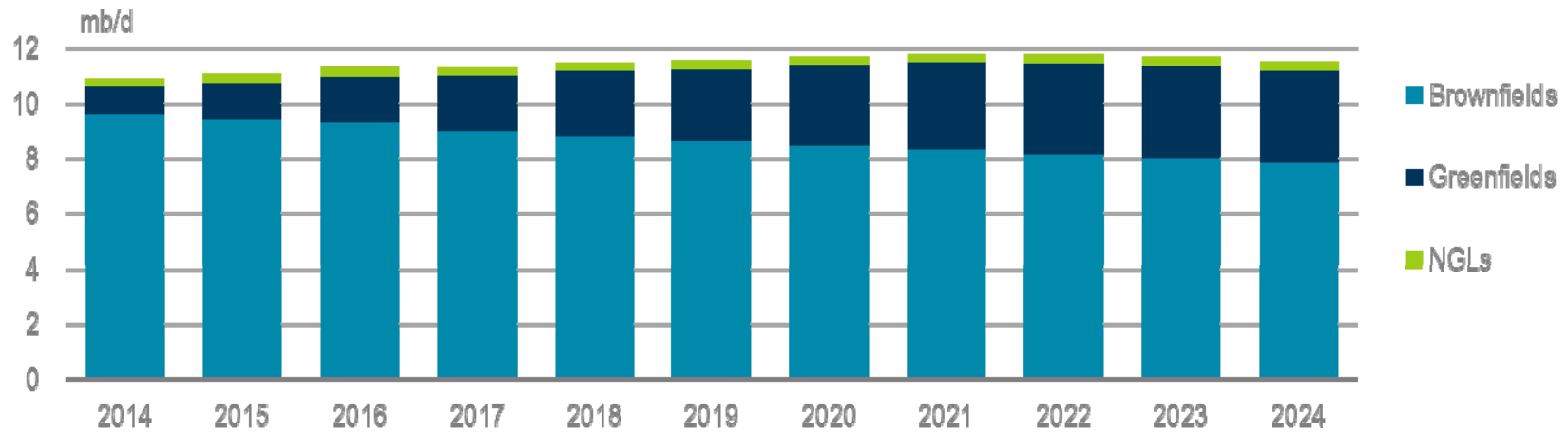
Output set to rise by net 1.2 mb/d, to reach 3.9 mb/d in 2024.

Norwegian projects fuel North Sea recovery



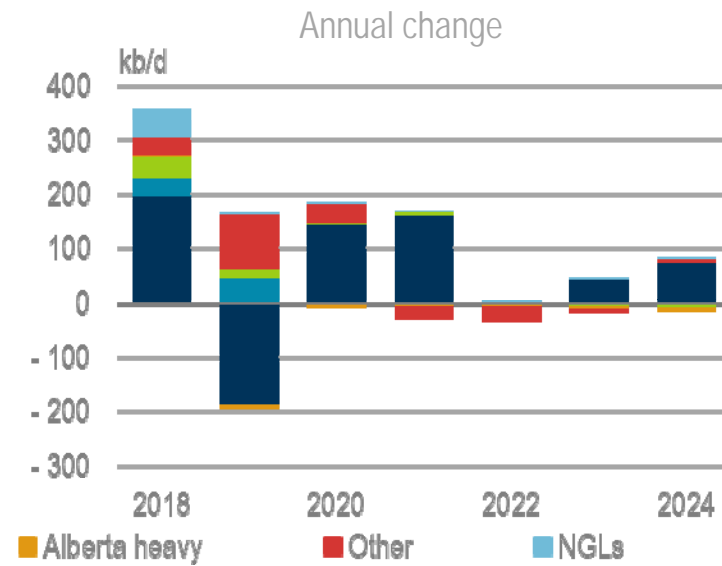
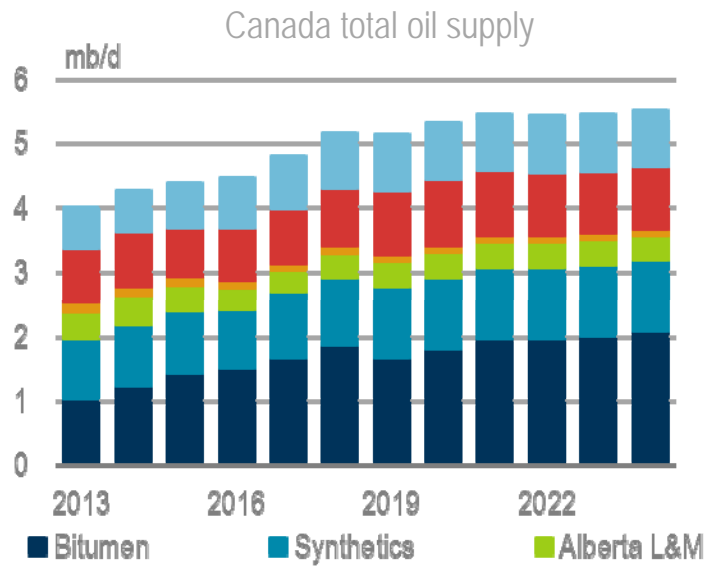
UK gains offset losses in Norway in early part of period. Start-up of Johan Sverdrup, Johan Castberg and expansion projects lift Norway to 2.5 mb/d

Russian production stays at record levels



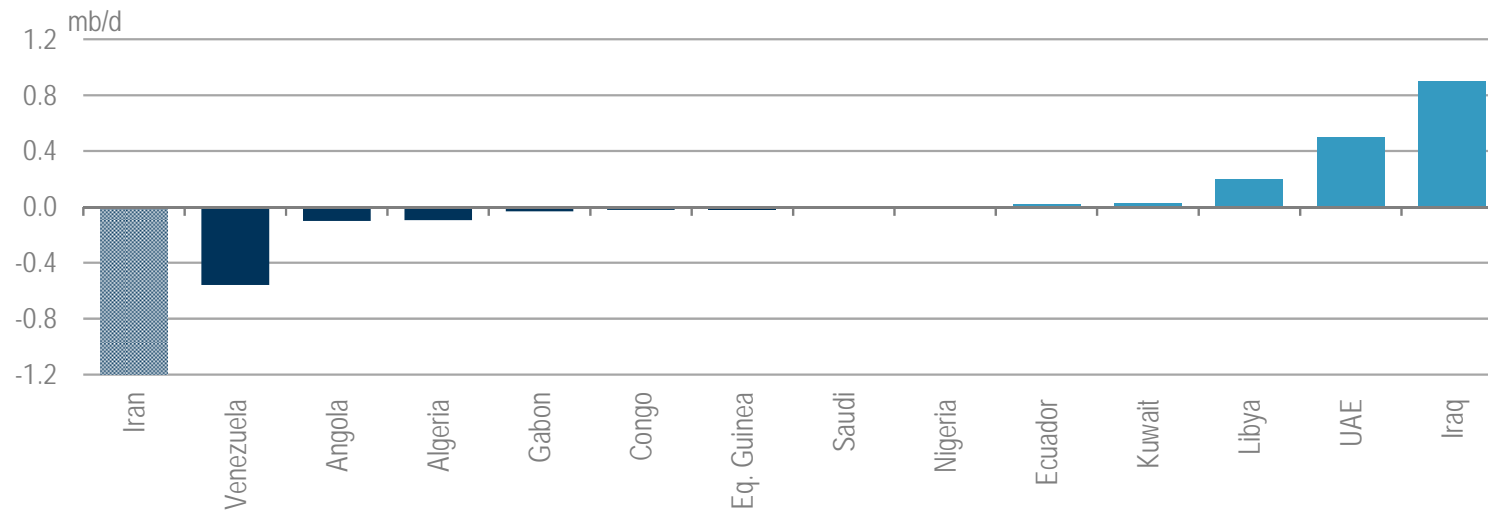
New projects could raise production if Vienna cuts unwound. Longer term, decline is possible unless sanctions and harder-to-develop projects move forward.

Canadian growth expectation eases back



Infrastructure bottlenecks led to mandatory production cuts in 2019. New projects stall.

OPEC effective capacity falls 400 kb/d by 2024

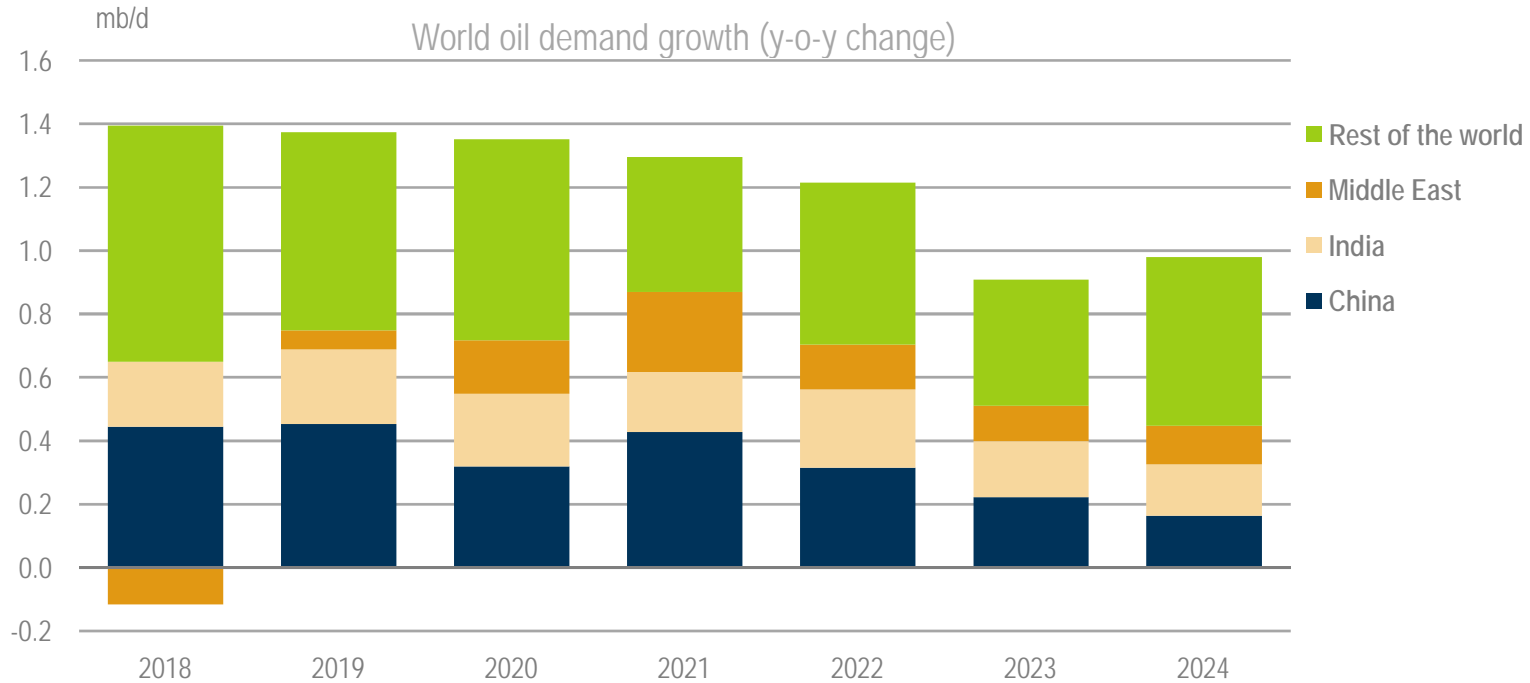


Assumption that Iran and Venezuela are out of market to 2024



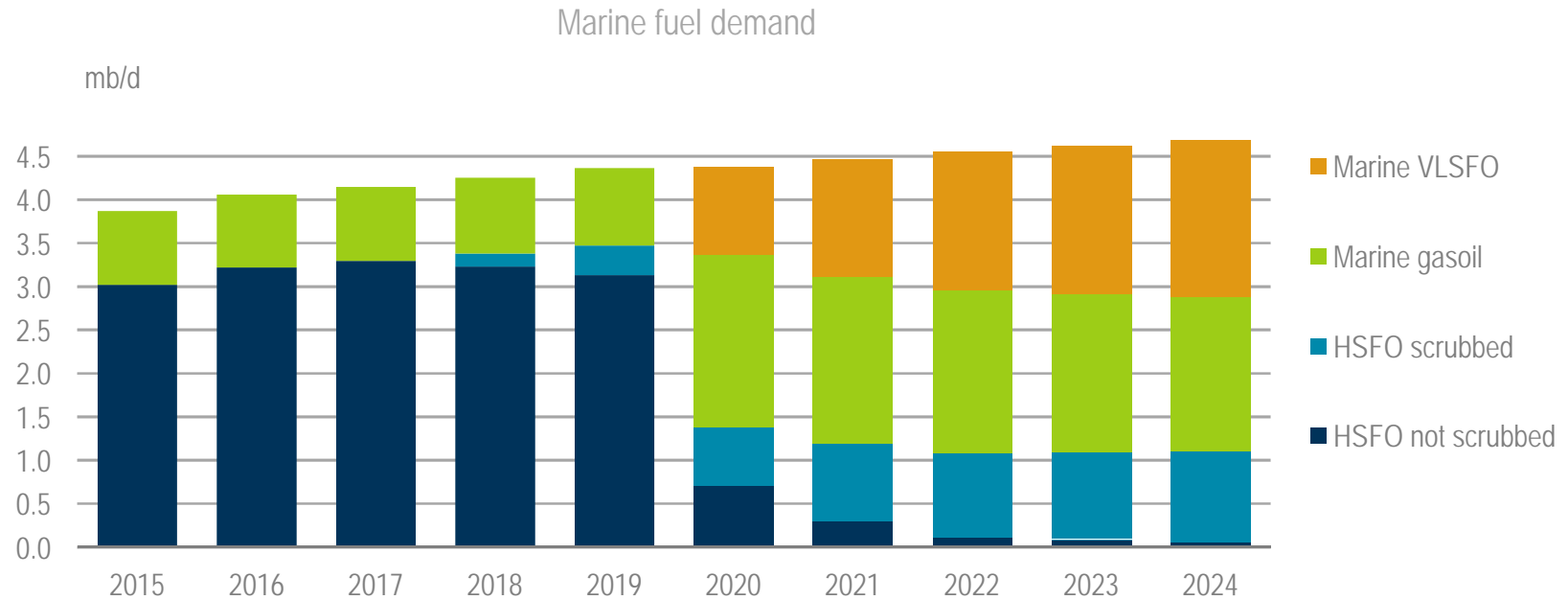
Demand

Medium term demand growth eases, adds 7.1 mb/d, no peak!



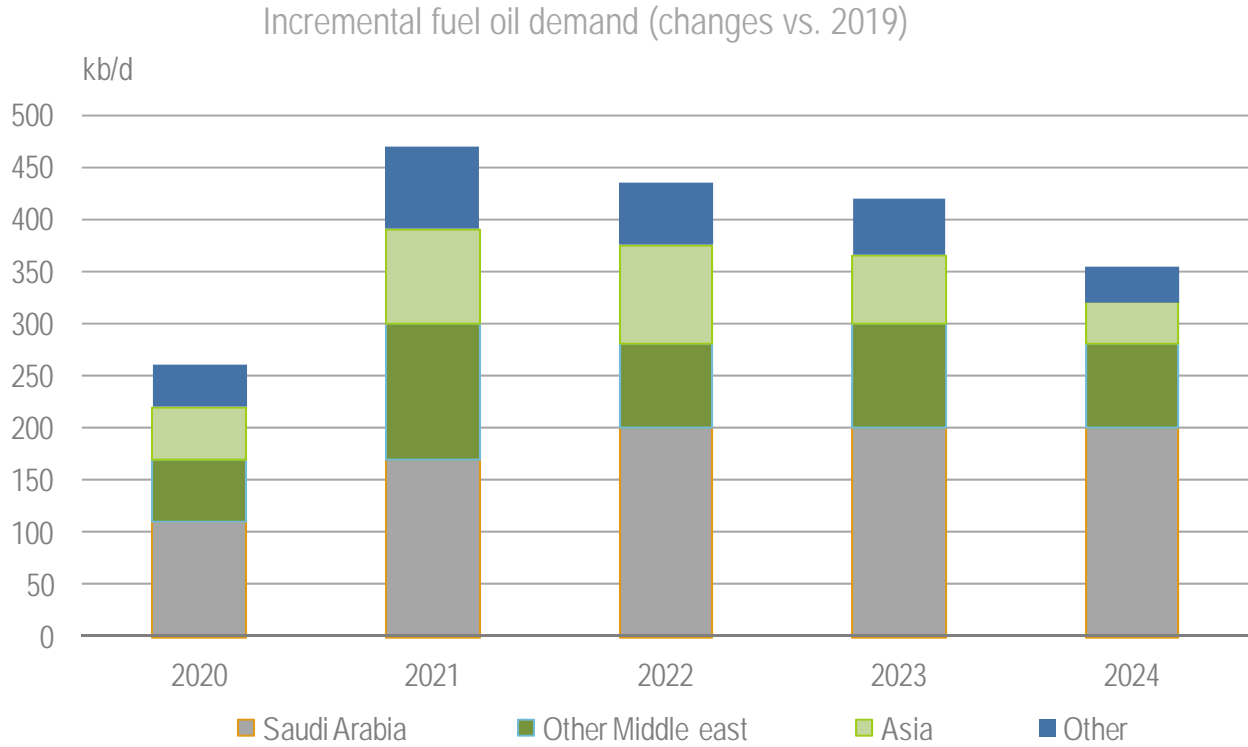
China slowdown reflects structural shift in the economy and environmental policies. Middle East fuel oil demand boosted after IMO 2020. India growth robust: similar to China by 2024.

IMO 2020 triggers massive marine fuel switch



**More than 2 mb/d of high sulfur fuel oil switching to gasoil and low sulfur fuel oil.
Big impact in first year but manageable over time.**

Post-IMO, some HSFO finds its way into the power sector

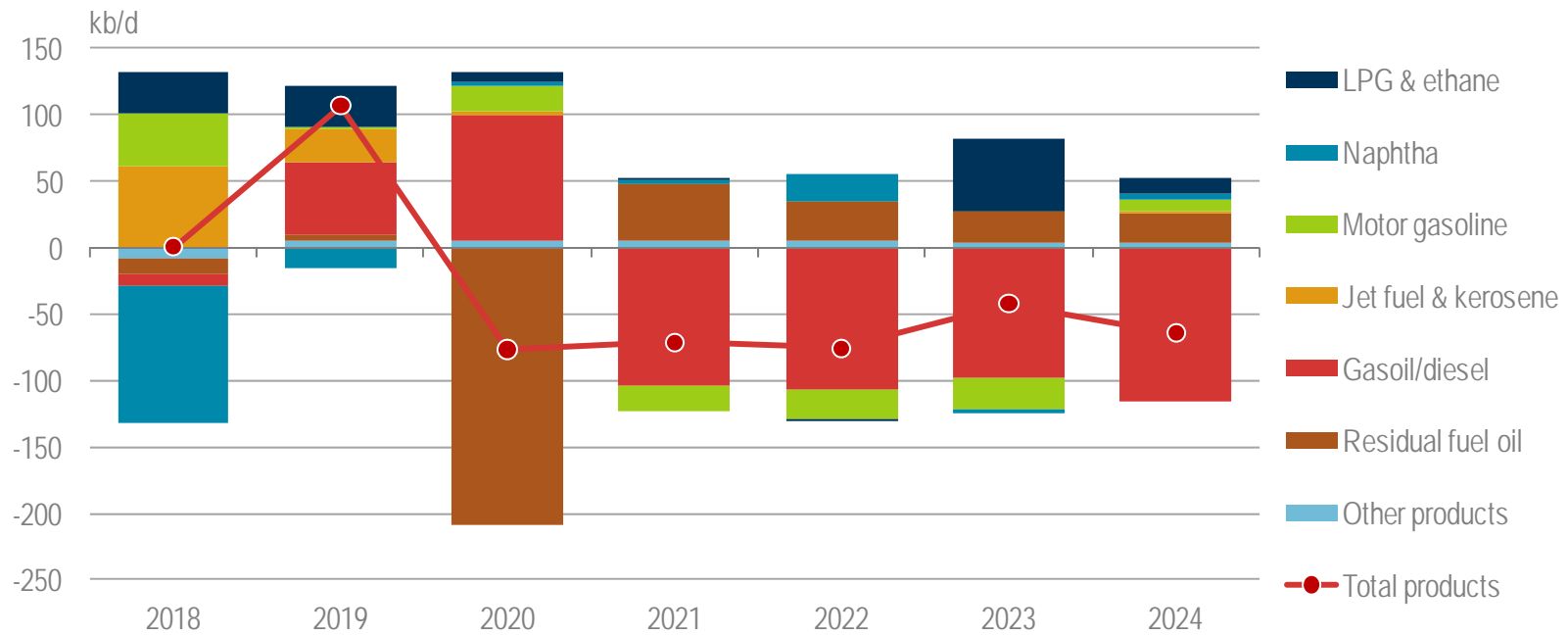


Mainly Middle East – and mainly Saudi Arabia

IMO switch facilitated by weaker Europe diesel demand...



Oil demand growth (y-o-y change)

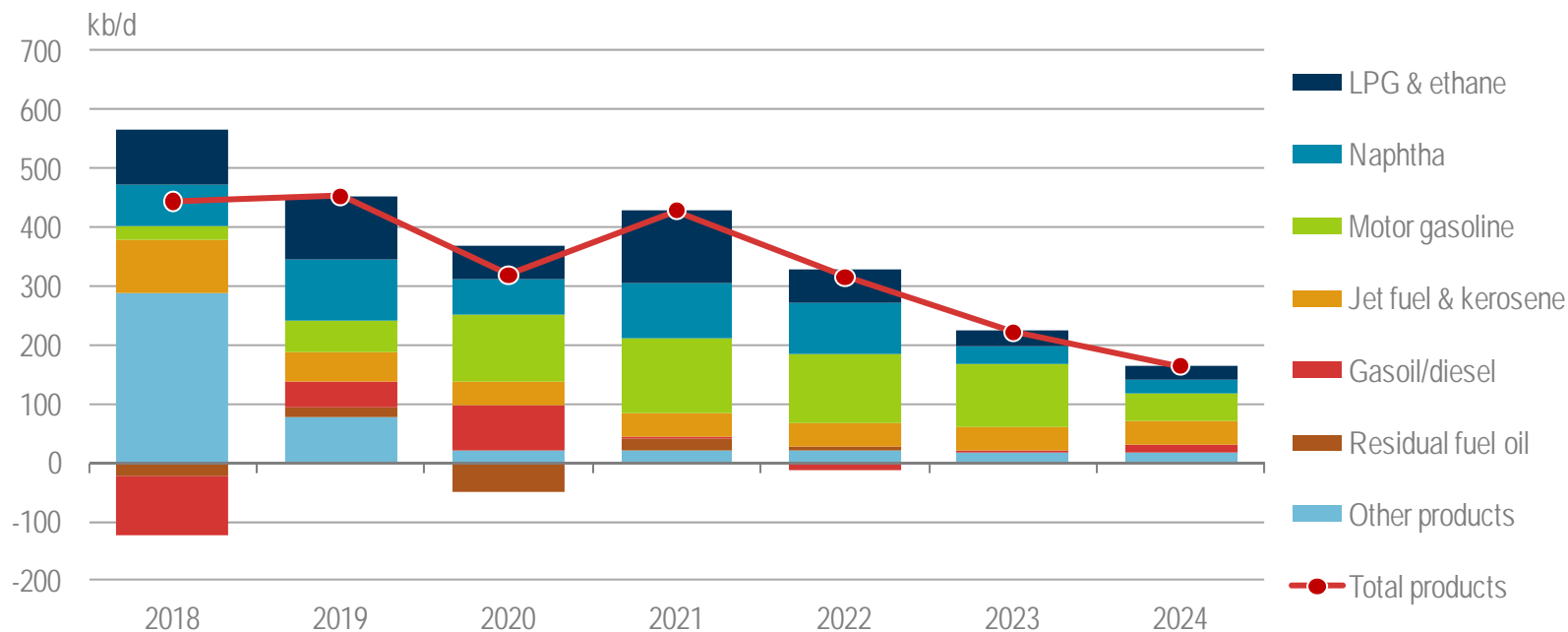


After initial switch to MGO in 2020, gasoil demand slows due to lower inland growth.

...China also helps IMO switch: gasoil demand plateaus after 2020...

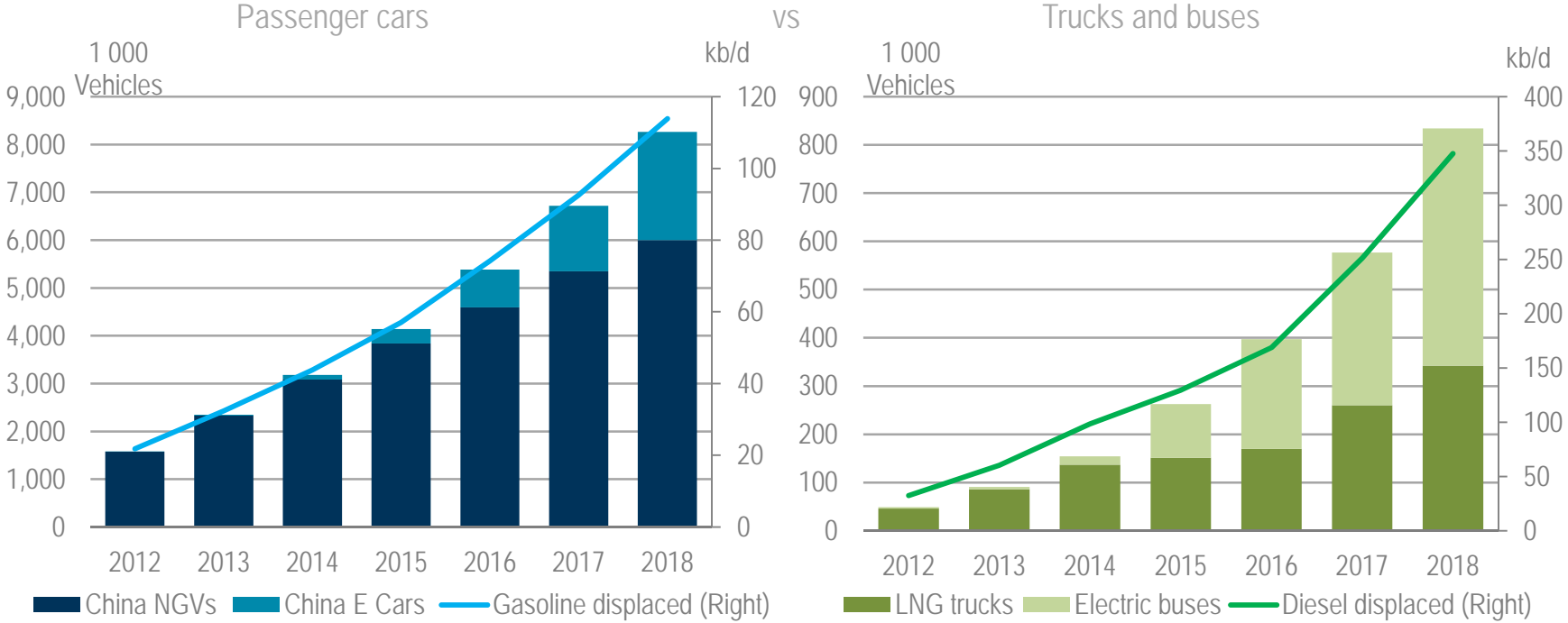


Oil demand growth (y-o-y change)



Gasoil demand plateauing after 2020. Significant slowdown.

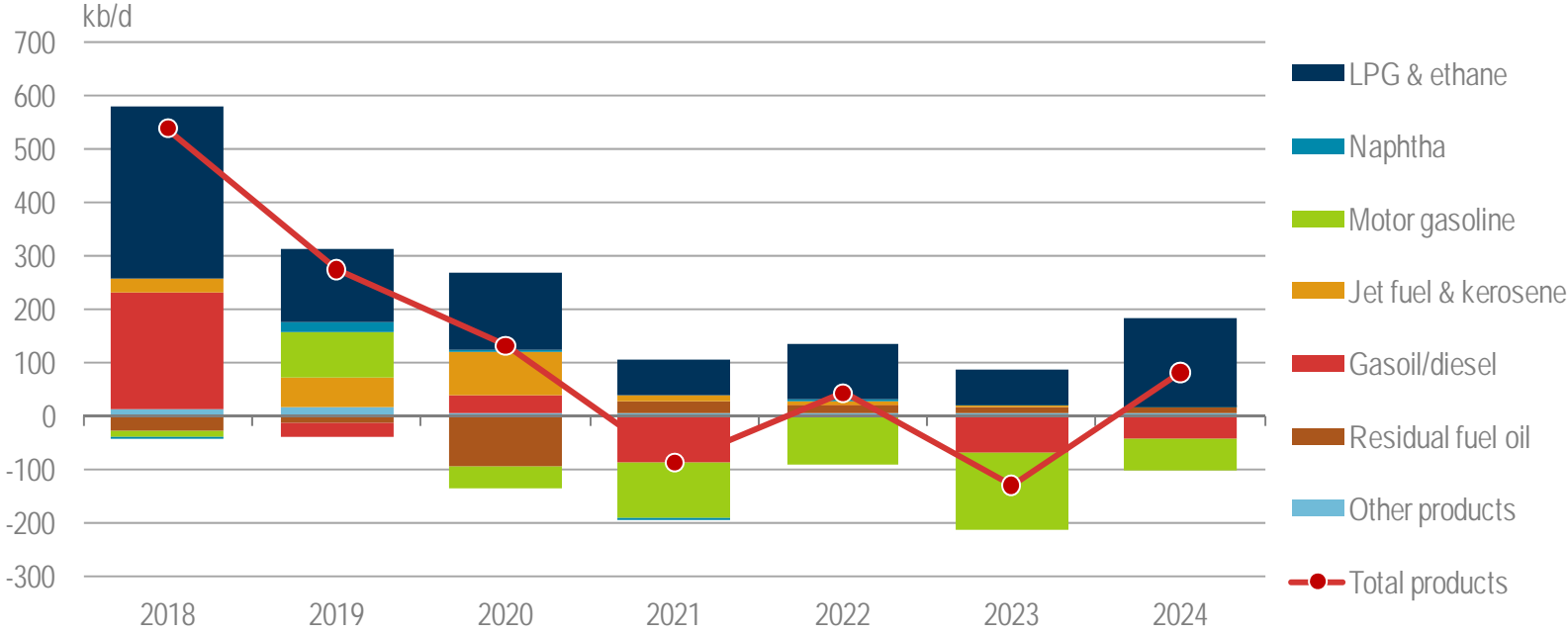
... helped by electrification of China's vehicle fleets...



Policy decisions supporting alternative energies for trucks and buses. -

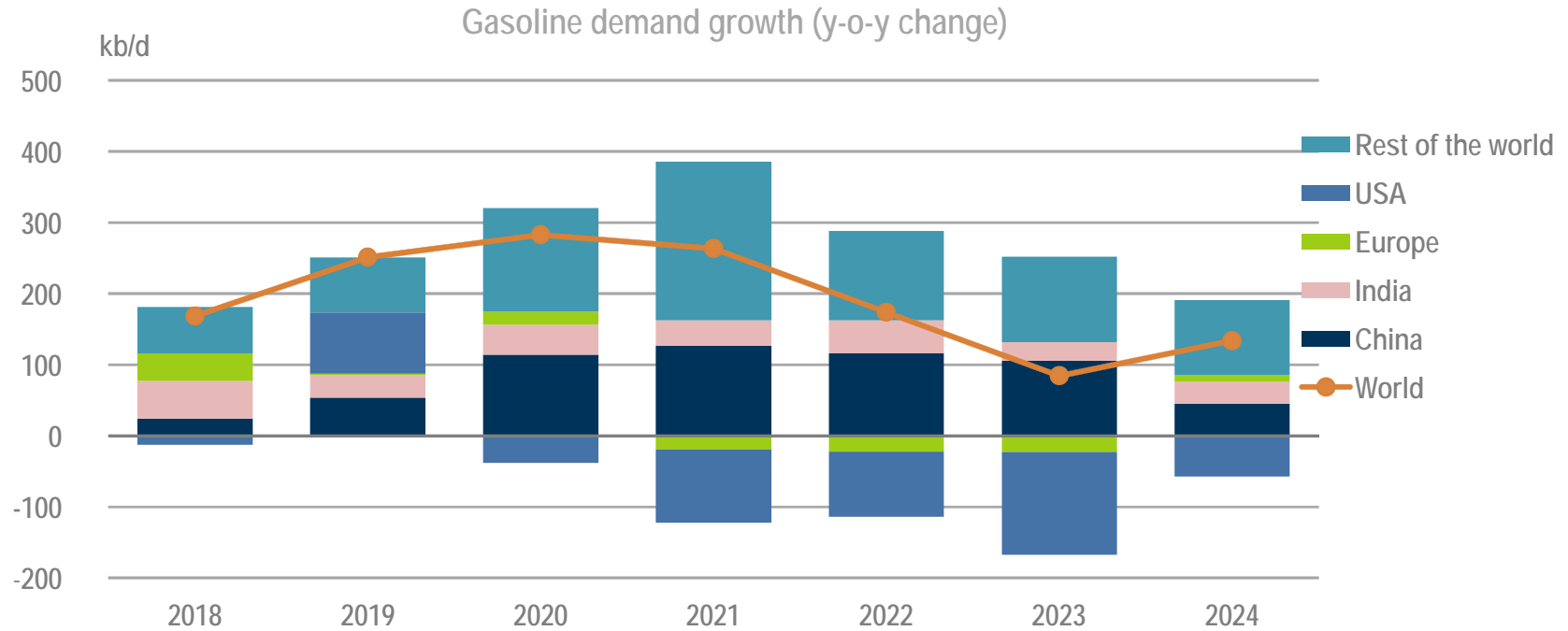
...US gasoil demand also expected to weaken

Oil demand growth (y-o-y change)



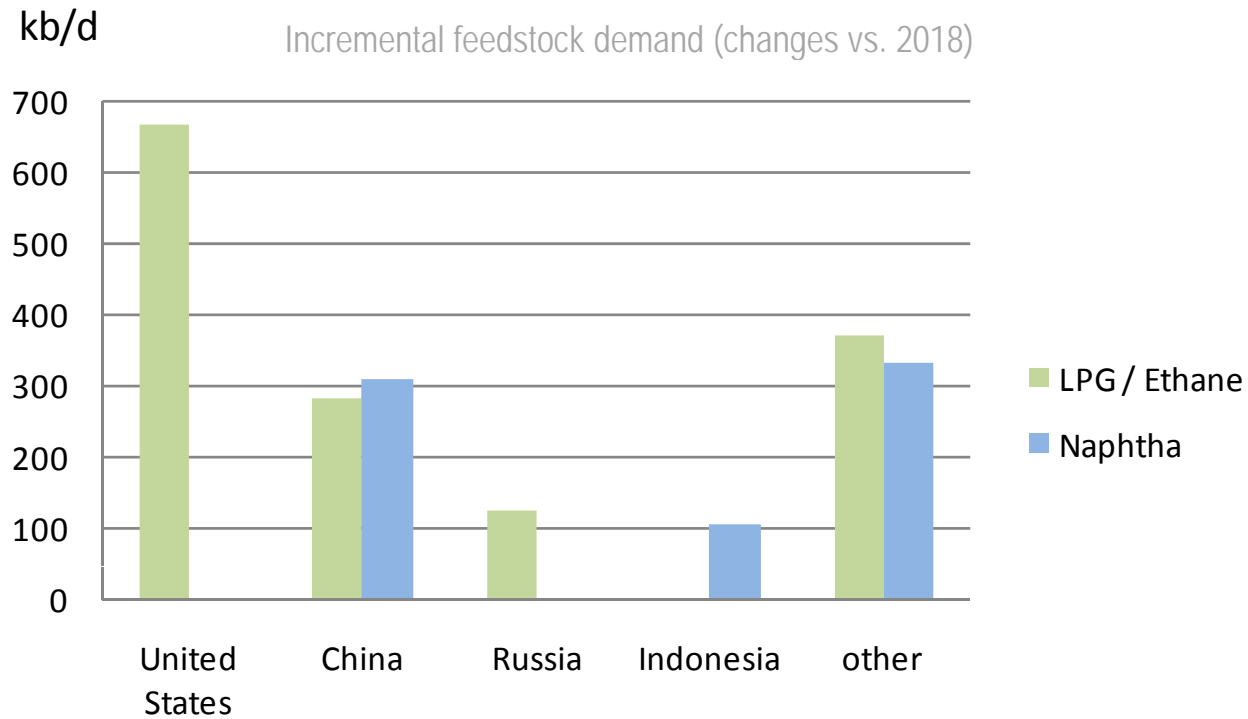
Less support from shale industry, slower trade growth, slower industrial production growth.

Global gasoline demand growth eases



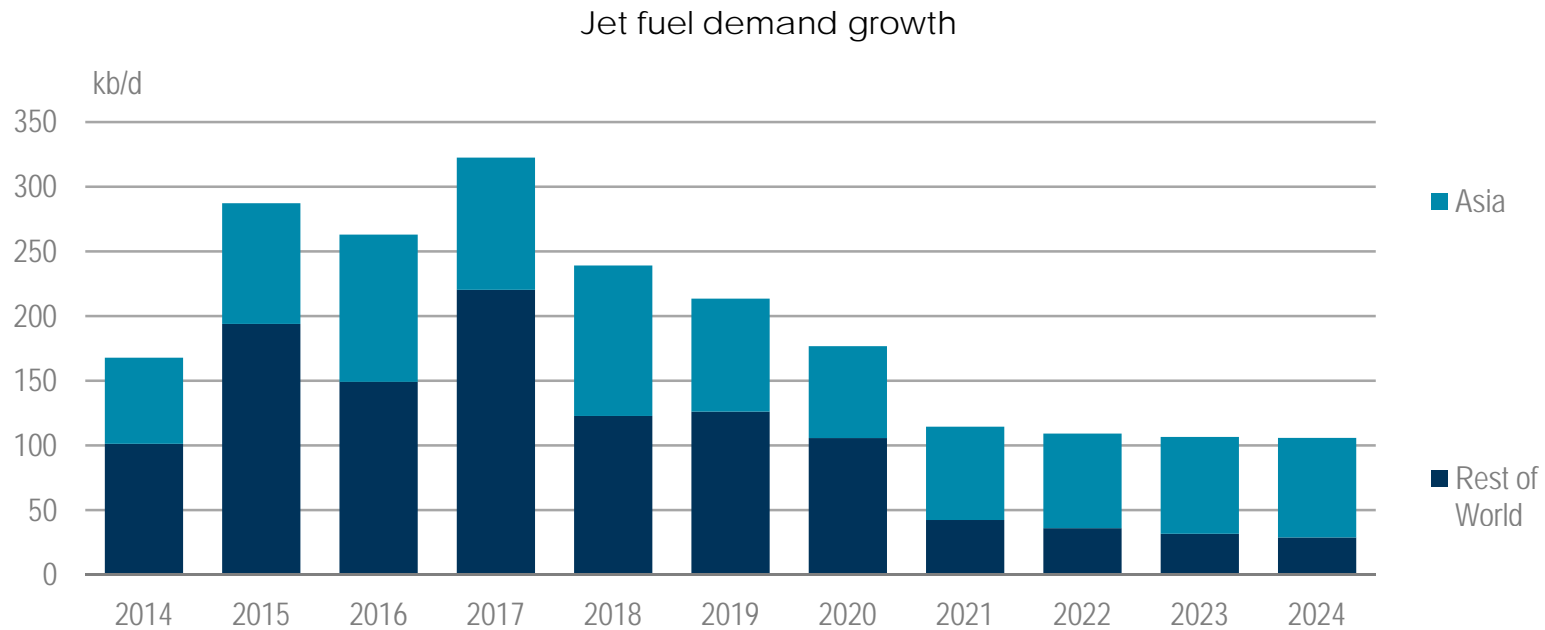
Efficiency improvements and electric vehicles will reduce gasoline demand growth.

> 50 projects spur global petrochemical feedstock demand



Petrochemicals demand accounts for 30% of total oil demand growth

Aviation industry booms but fuel growth slows

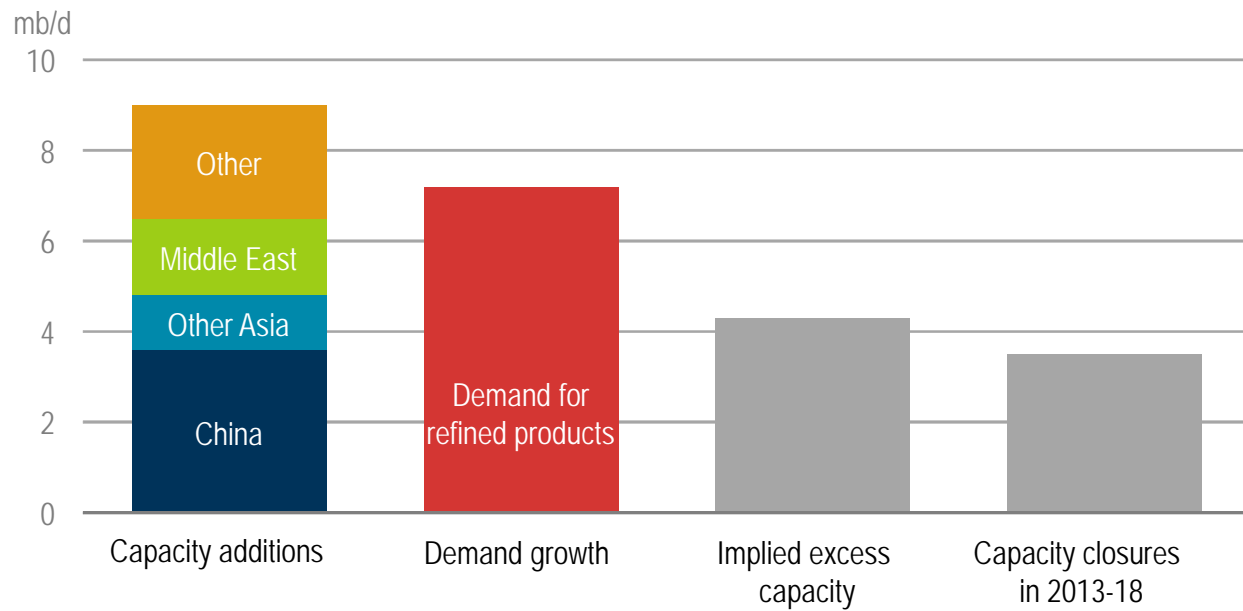


Although passenger volumes grow strongly, efficiency improvements see the pace of jet fuel demand growth halve. Asia accounts for 75% of demand growth by 2024.



Refining & Trade

Downstream capacity additions challenge refiners

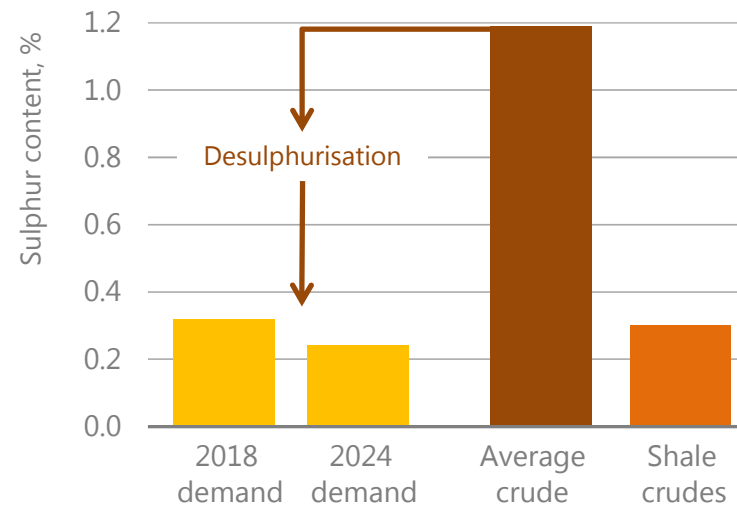
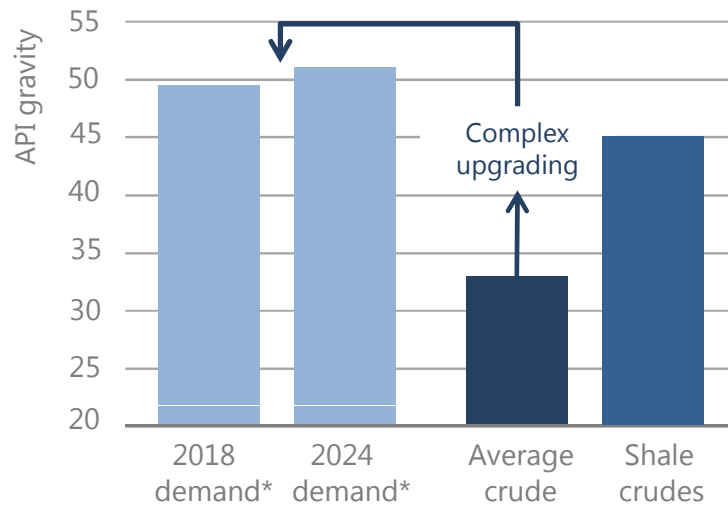


Global capacity growth to 2024 far exceeds refined products demand growth.

US shale fits the new demand landscape



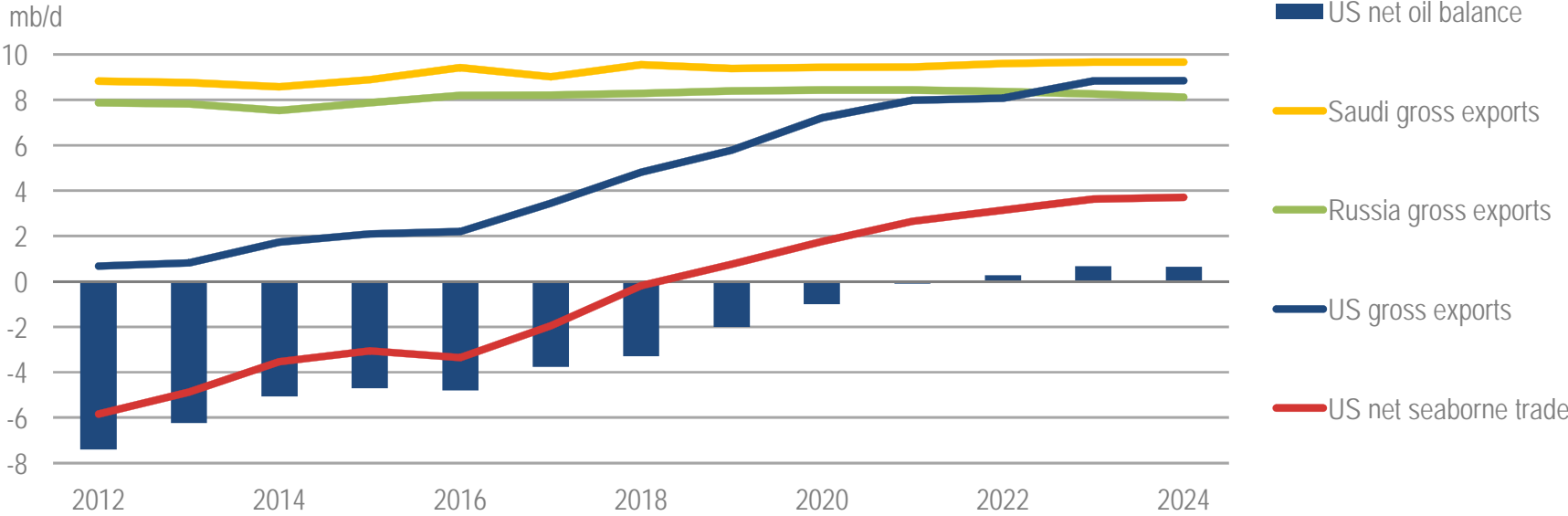
Global refined product barrel vs crude barrel



*excludes natural gas liquids and other non-refinery products

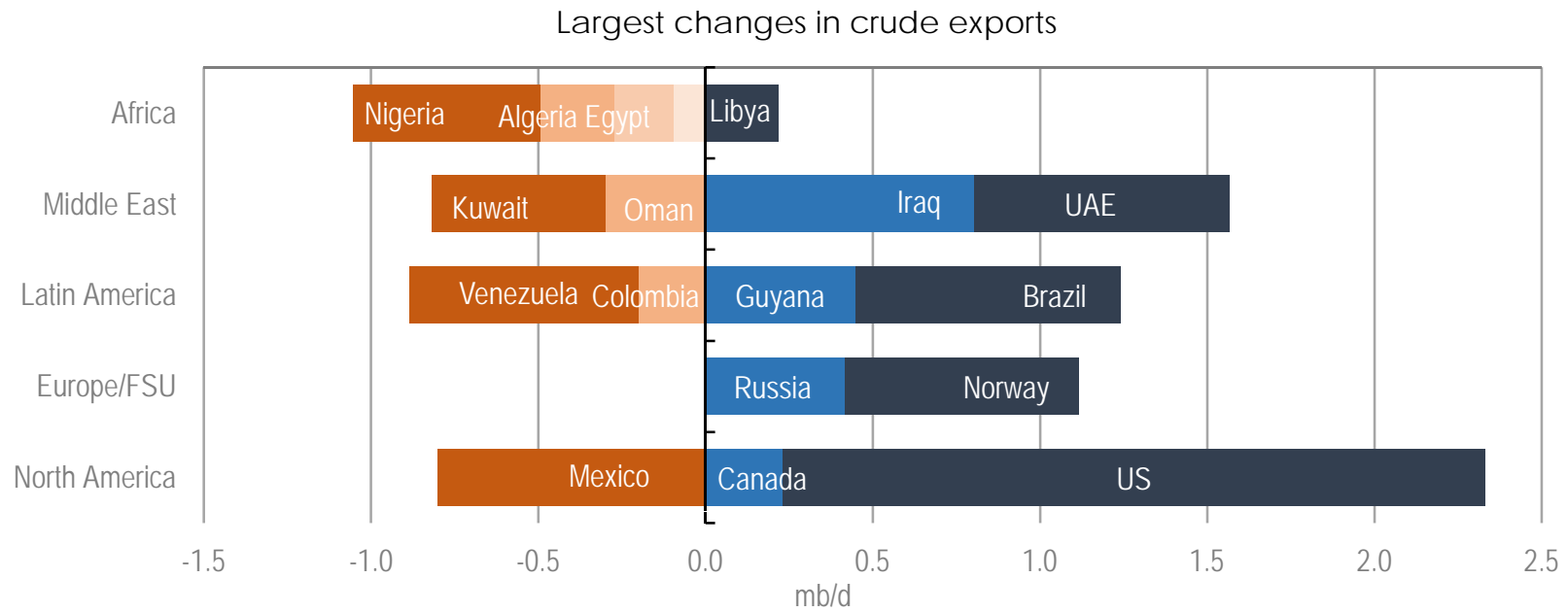
Shale crudes reduce need for complex refining, first reversal of the historical trend.

US gross exports overtake Russia, close in on Saudi Arabia



US is net oil exporter in 2021 after 75 years of import dependency. US exports add to market flexibility.

Crude export growth is in the Atlantic Basin...

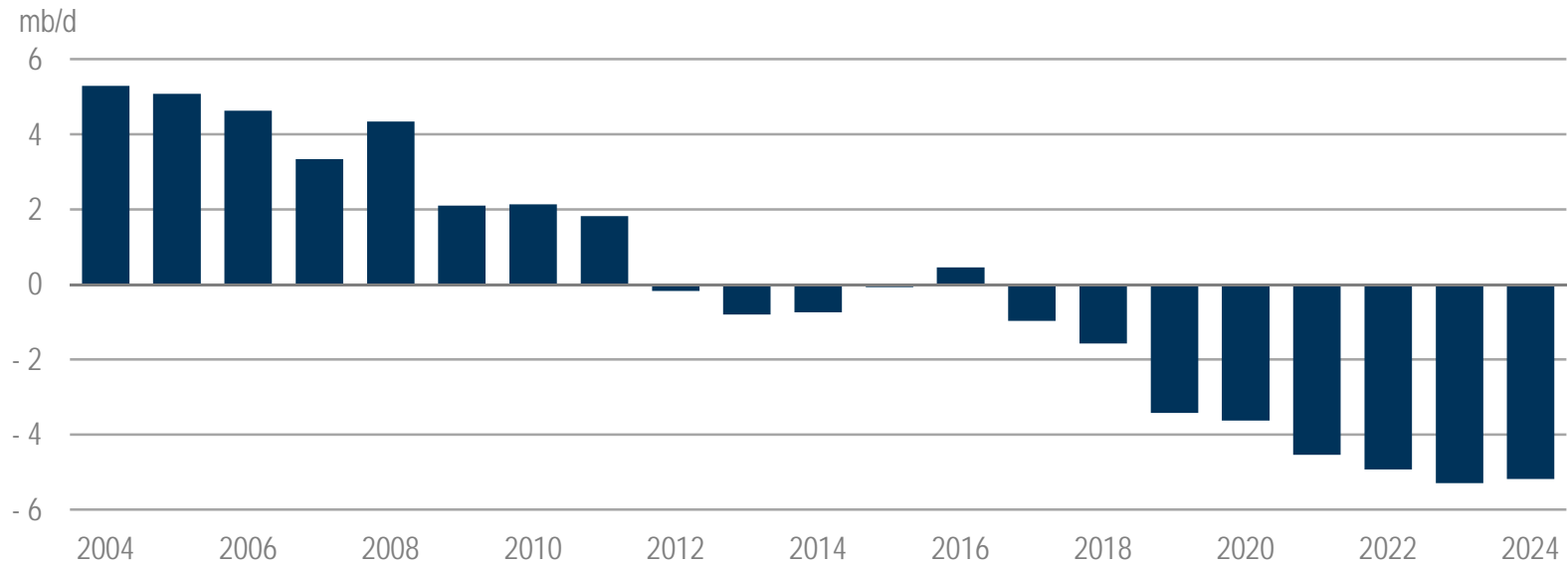


US, Brazil, Norway and Iraq lead crude exports growth.

The centre of gravity of the crude trade shifts to Asia



East of Suez crude oil balance



Diversification beyond Middle East sources now a necessity rather than choice.

Conclusions



- The United States to provide 70% of the increase in global oil supply over next five years, with Iraq, Brazil, Norway & Guyana other major contributors
- Global oil demand growth to slow modestly, but still average 1.2 mb/d, with petrochemicals a key driver
- While there may be teething problems, refiners & shippers are relatively well prepared to implement the new IMO bunker fuel regulations
- The 2nd wave of the US shale revolution is coming – it will shake-up international oil & gas trade flows, with profound implications for the geopolitics of energy
- Up to and beyond 2024: oil industry must do more to cut its carbon footprint, e.g. flaring & methane leakages, and use of CCUS, EOR, hydrogen & renewables.



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