Asia-Pacific Economic Cooperation

APERC Asia Pacific Energy Research Centre

1-2. APERC Oil Report 2023

EGCFE 2024 Meeting
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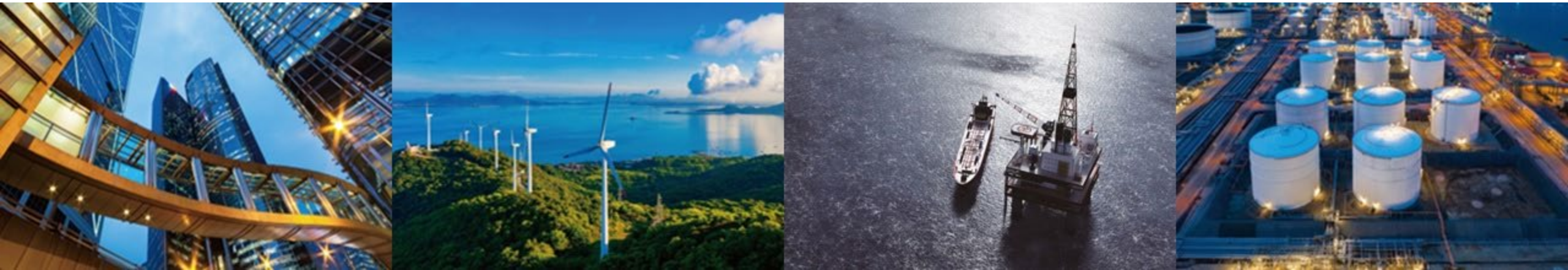
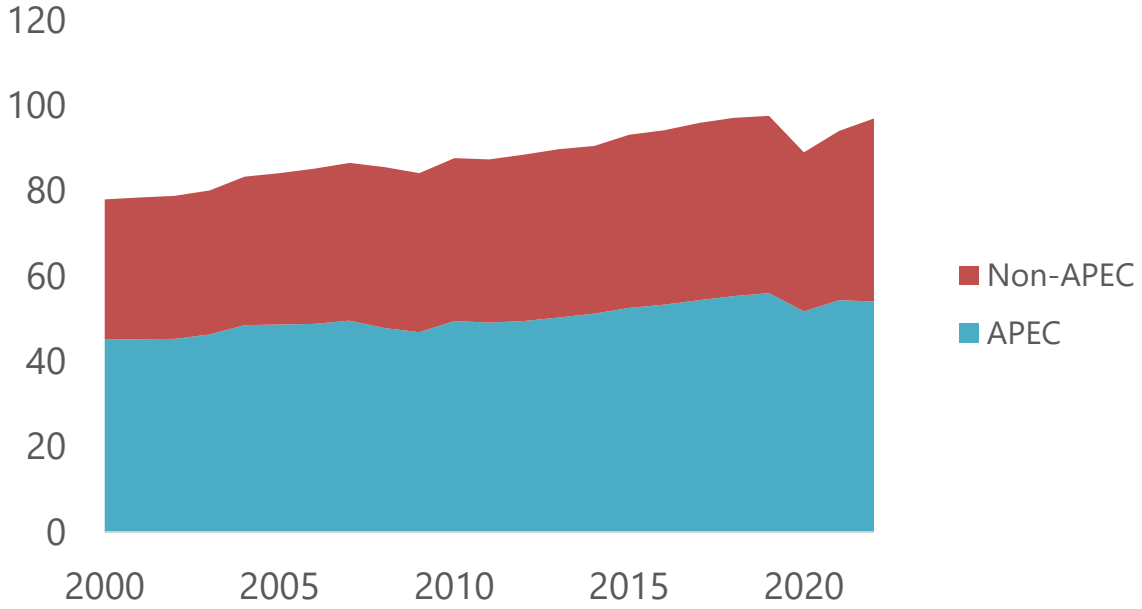


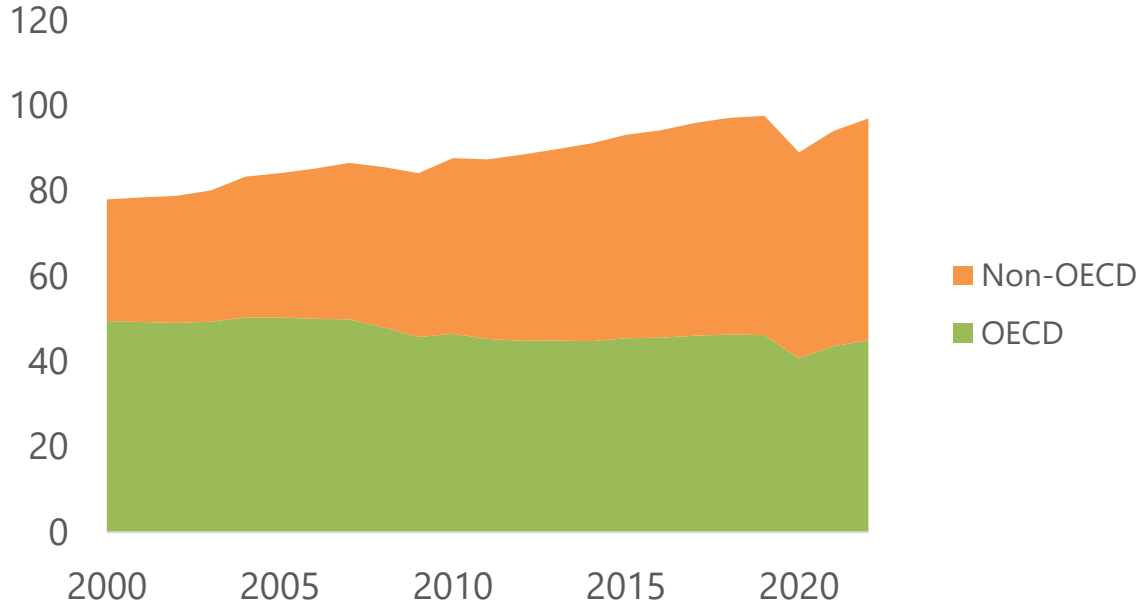
Global oil demand reached pre-pandemic levels

Global oil demand, APEC and Non-APEC, 2000 – 2022 (mb/d)



Source: EGEDA (2023), EI (2023), IEA (2023)

Global oil demand, OECD and Non-OECD, 2000 – 2022 (mb/d)

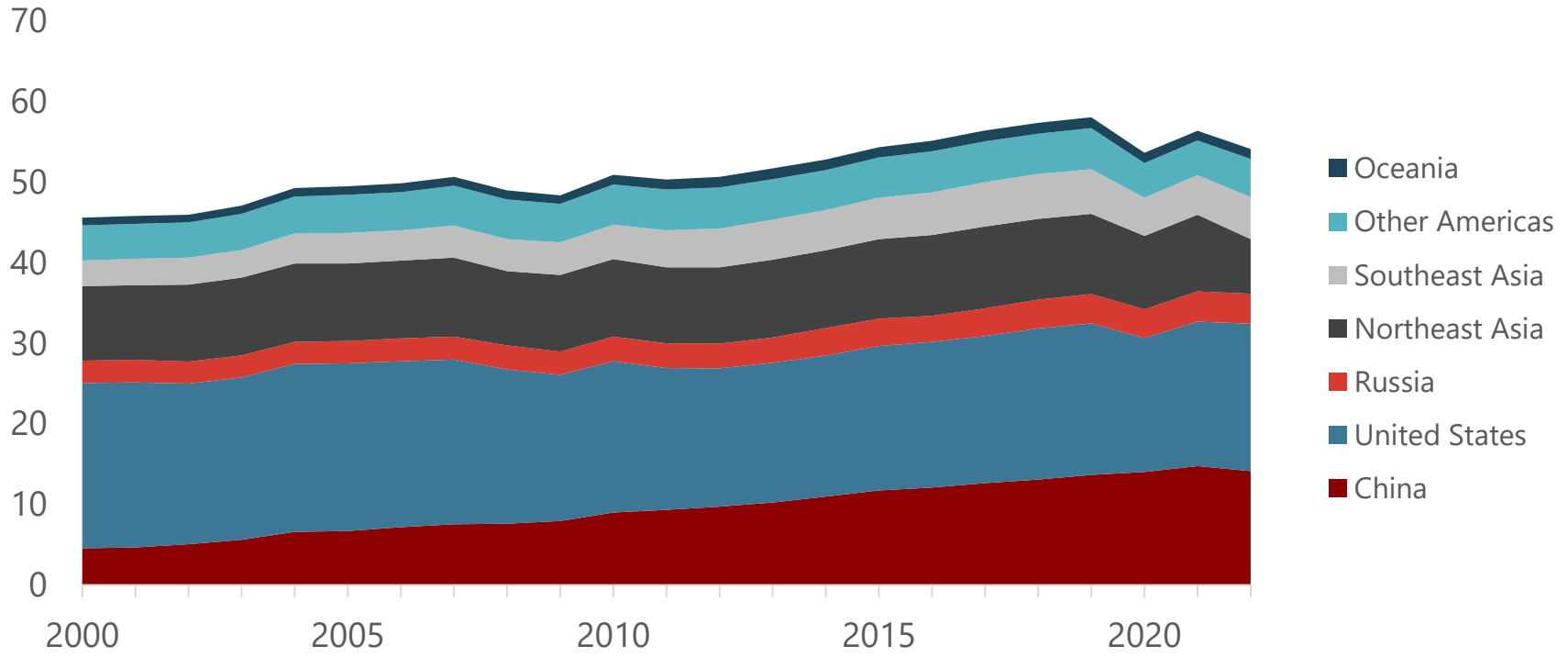


Source: EGEDA (2023), EI (2023)

- Global oil demand grew by 19 mb/d, or 24% from 2000 to 2022.
- Resumption of economic activities post-COVID19 pandemic saw the demand rebounded to 94 mb/d in 2021 and then 97 mb/d in 2022.
- Non-OECD demand increased by 24 mb/d, or 83% from 2000 to 2022.
- Conversely, OECD's demand declined by almost 5 mb/d, or 9% between the same period, driven by efficiency improvements.

China led the increase in APEC oil demand over the last two decades

APEC oil demand, 2000 – 2022 (mb/d)

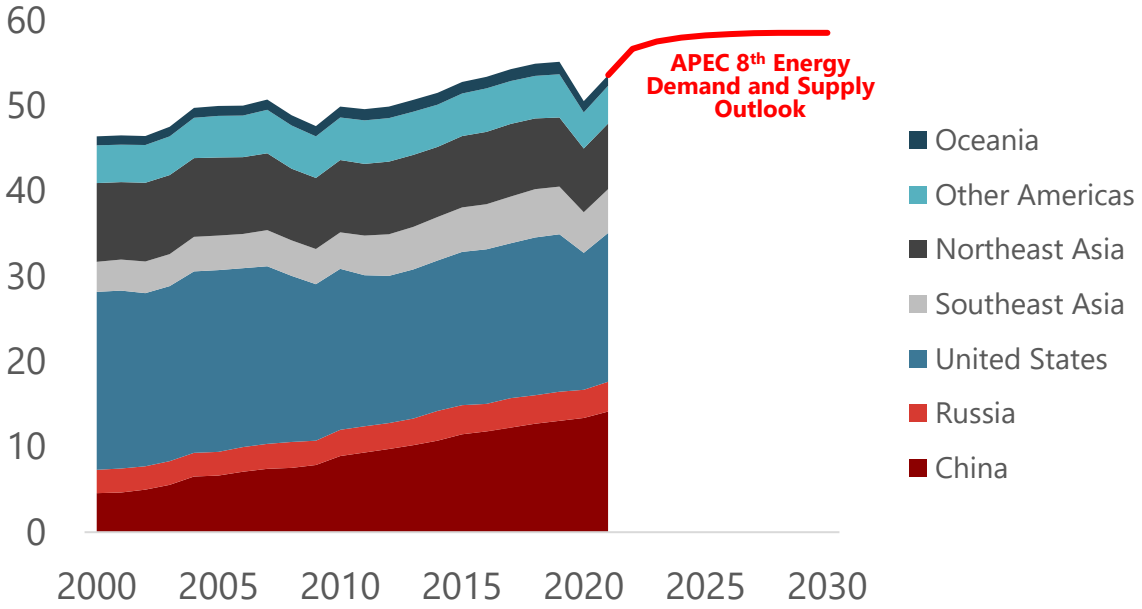


Source: EGEDA (2023), EI (2023)

- APEC oil demand increased by 9 mb/d, or 20% from 2000 to 2022.
- China and Southeast Asia demands rose the most by 9.5 mb/d and over 2 mb/d, respectively.
- Declines were seen in Northeast Asia and United States, at 2.4 mb/d and 2.2 mb/d, respectively.

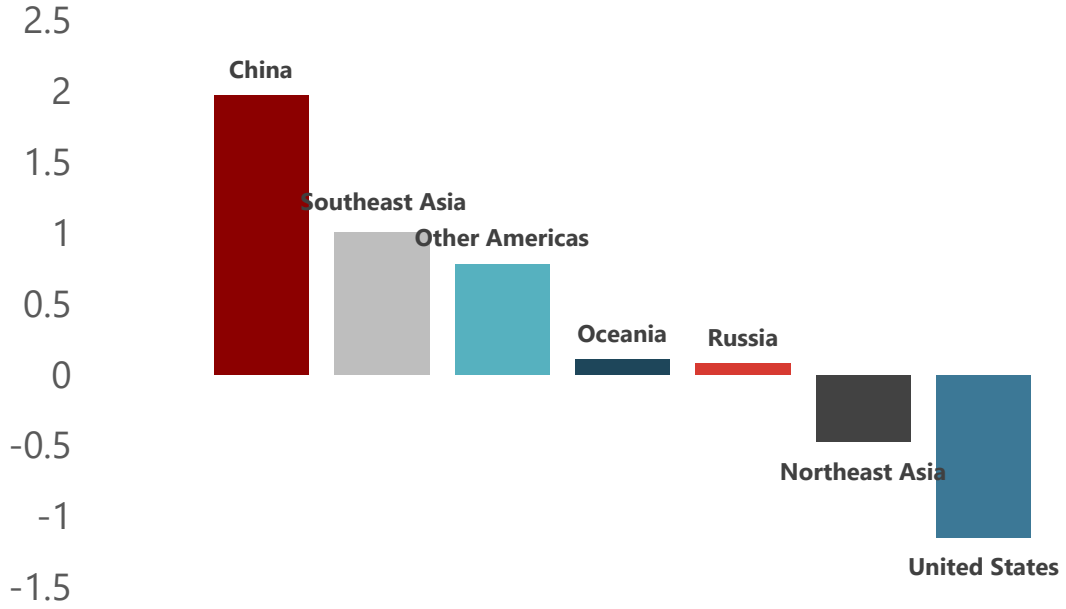
China, SEA and OAM dominate demand growth outlook, while US and NEA demands decline

APEC oil demand outlook, 2000 – 2030 (mb/d)



Source: EGEDA (2023), APERC (2022)

Change in oil demand outlook in APEC, 2021 – 2030 (mb/d)

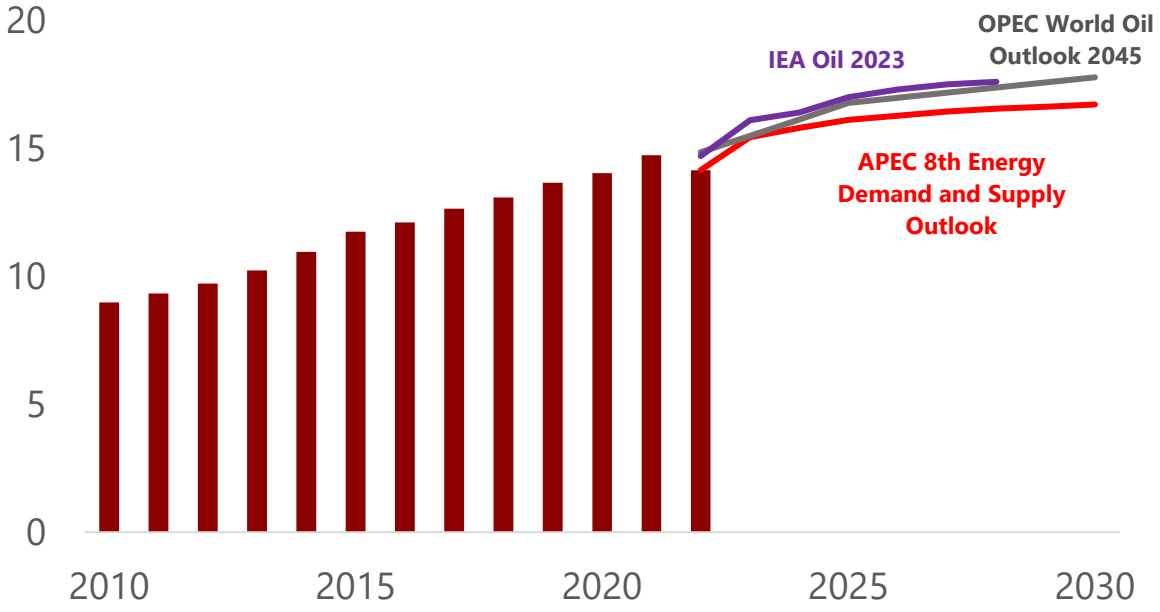


Source: EGEDA (2023), APERC (2022)

- APEC total demand is expected to grow by 9% above 2021 levels, to 58.5 mb/d by 2030.
- China dominates the growth (1.9 mb/d increase), followed by Southeast Asia (1.4 mb/d), and Other Americas (0.78 mb/d)
- The United States and Northeast Asia are the only subregions that see a decline in demand, by 1.1 mb/d and 0.47 mb/d, respectively.

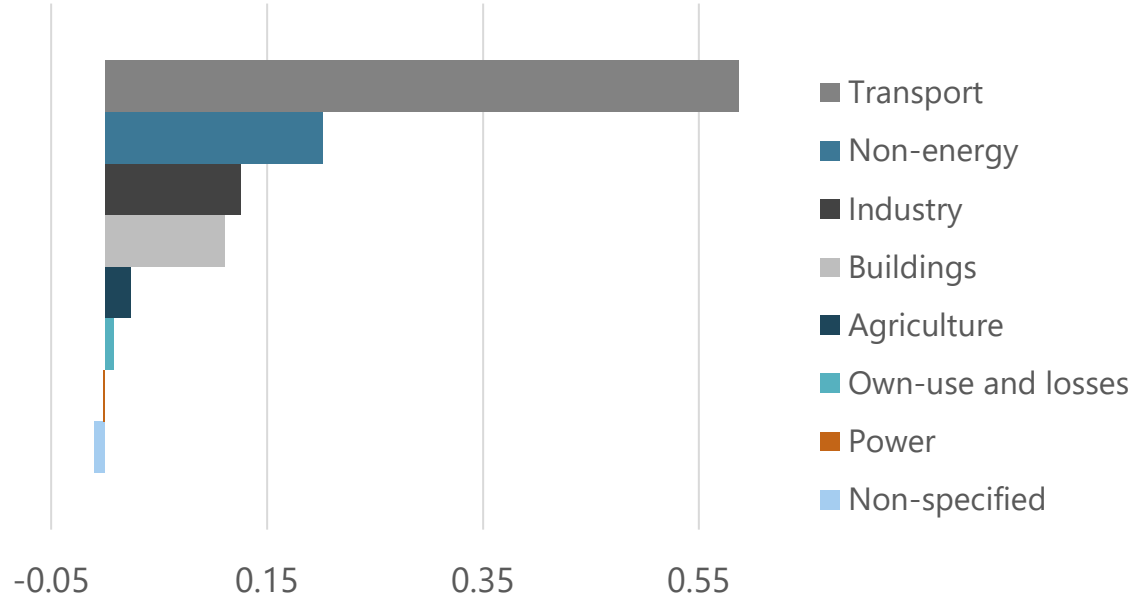
Divergent views on China demand outlook. Transport sector drives SEA demand growth

China oil demand outlook, 2010 – 2030 (mb/d)



Source: EGEDA (2023), APERC (2022), IEA (2023), OPEC (2023)

Change in Southeast Asia sectoral oil demand, 2021 – 2030 (mb/d)

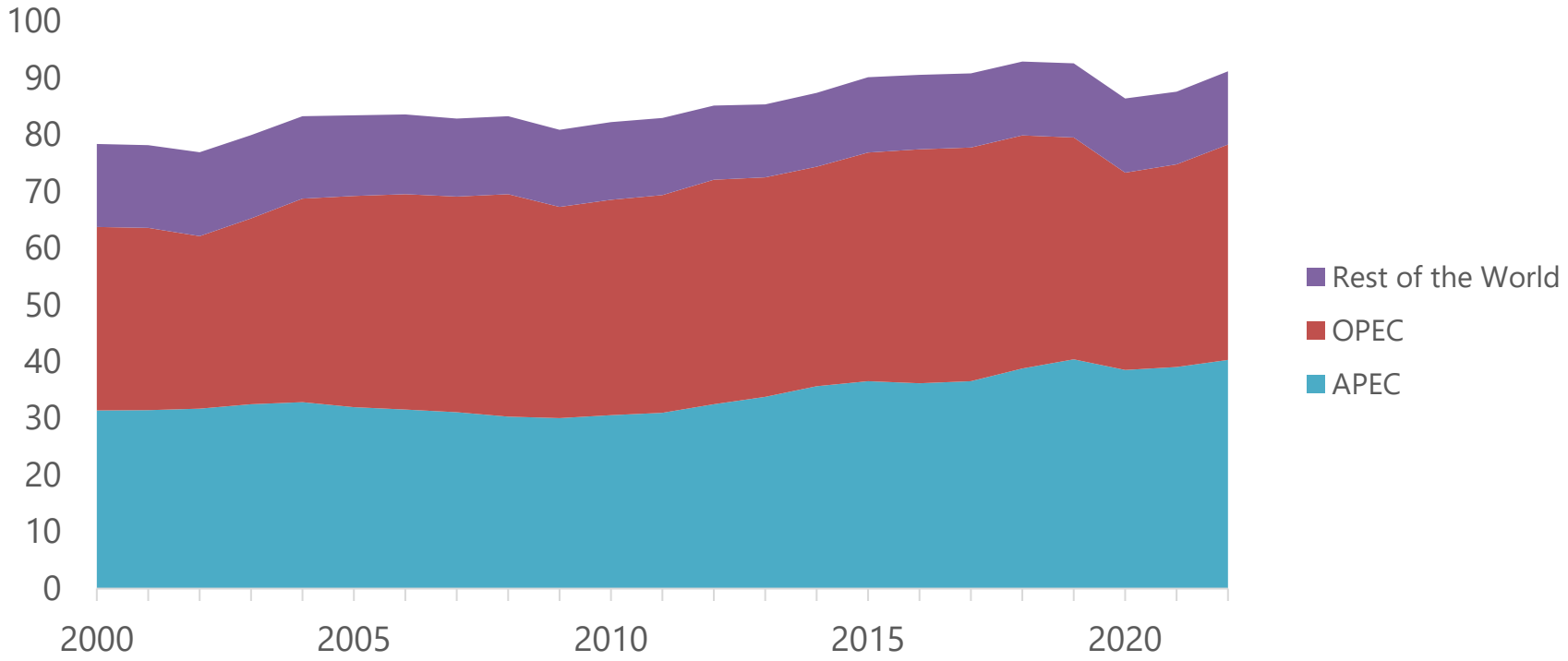


Source: EGEDA (2023), APERC (2022)

- China demand in 2030 reaches between 16 and 18 mb/d.
- OPEC is bullish on China demand (at 18 mb/d), citing dominance in ICE vehicles albeit rising EVs. In addition, demand for aviation fuels remains strong.
- Southeast Asia transport sector demand grows by 0.59 mb/d, as light ICE vehicles reaches 63 million by 2030.
- Rapid industrialisation across SEA sees growth in industry (by 0.13 mb/d) and non-energy sectors (by 0.20 mb/d) demand by 2030.

Since 2019, APEC oil production grew more than OPEC

Global oil production, 2000 – 2022 (mb/d)

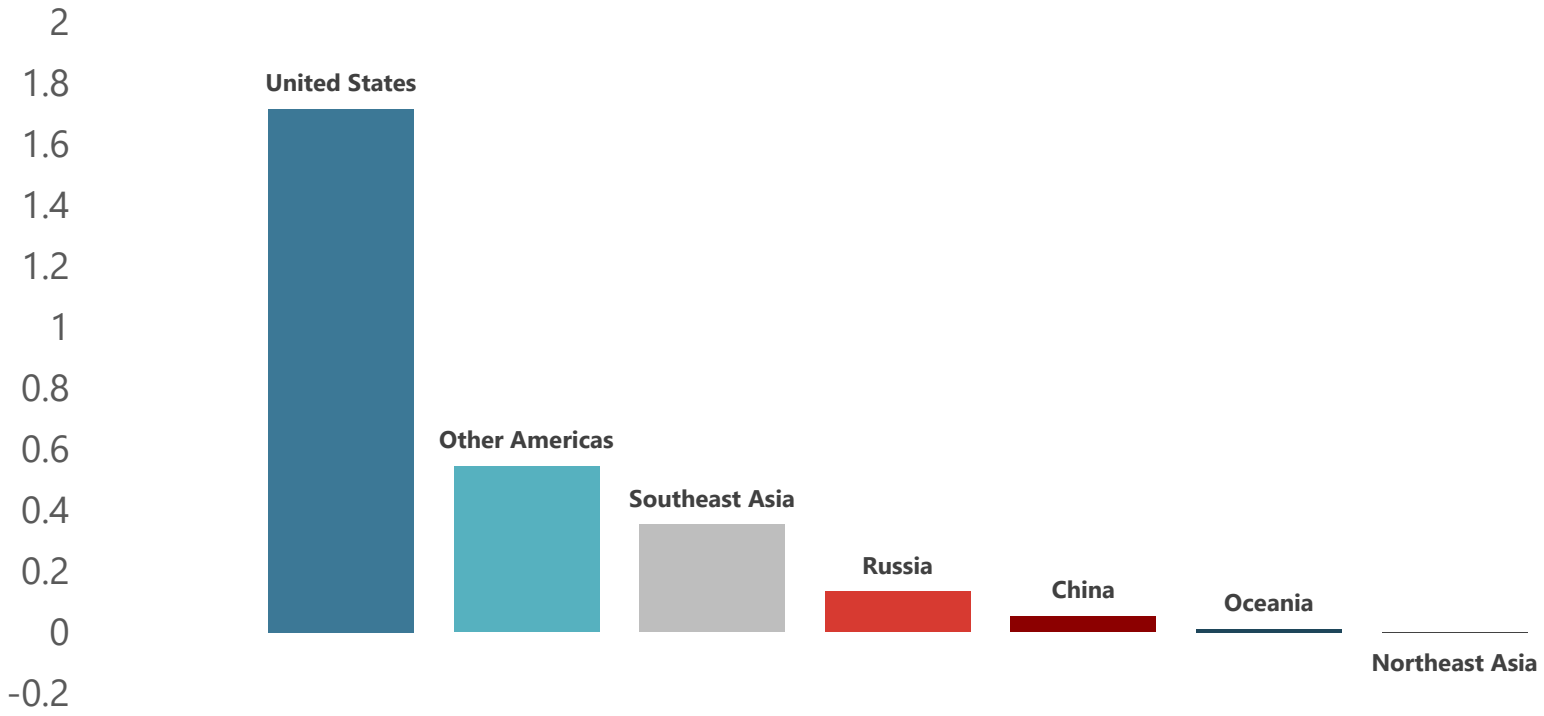


Source: EGEDA (2023), EI (2023)

- Global oil production increased from 77.8 mb/d to 91.2 mb/d from 2000 to 2022.
- Output from APEC and OPEC grew by 9.5 mb/d and 5.6 mb/d, respectively from 2000 to 2022.
- APEC accounted for 44% of the world's production in 2022, up from 40% in 2000. This increase in share has been largely driven by the United States.

United States drives APEC crude oil production increases by 2030

Growth in APEC crude oil production, 2021 – 2030 (mb/d)

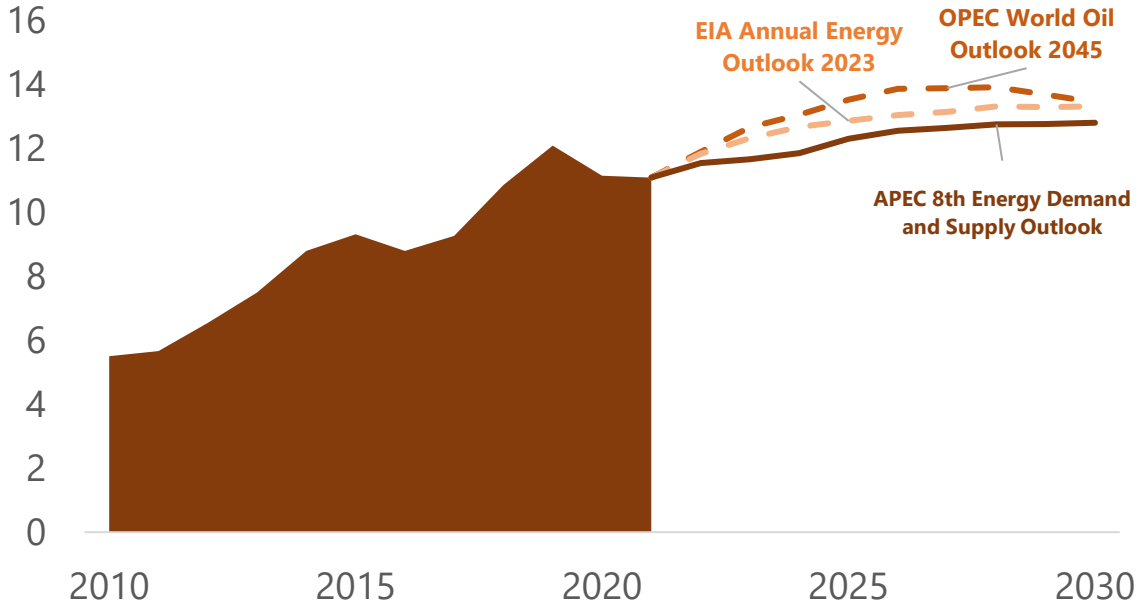


Source: APERC (2022)

- APEC crude oil production is expected to grow by 2.8 mb/d in 2030 from 2021 levels, with US output expanding by over 1.7 mb/d.
- Other Americas' 0.54 mb/d growth from 2021 to 2030 is contributed mainly by Canada.
- Optimisation of existing oilfields in the Southeast Asia will also see some growths in barrels.

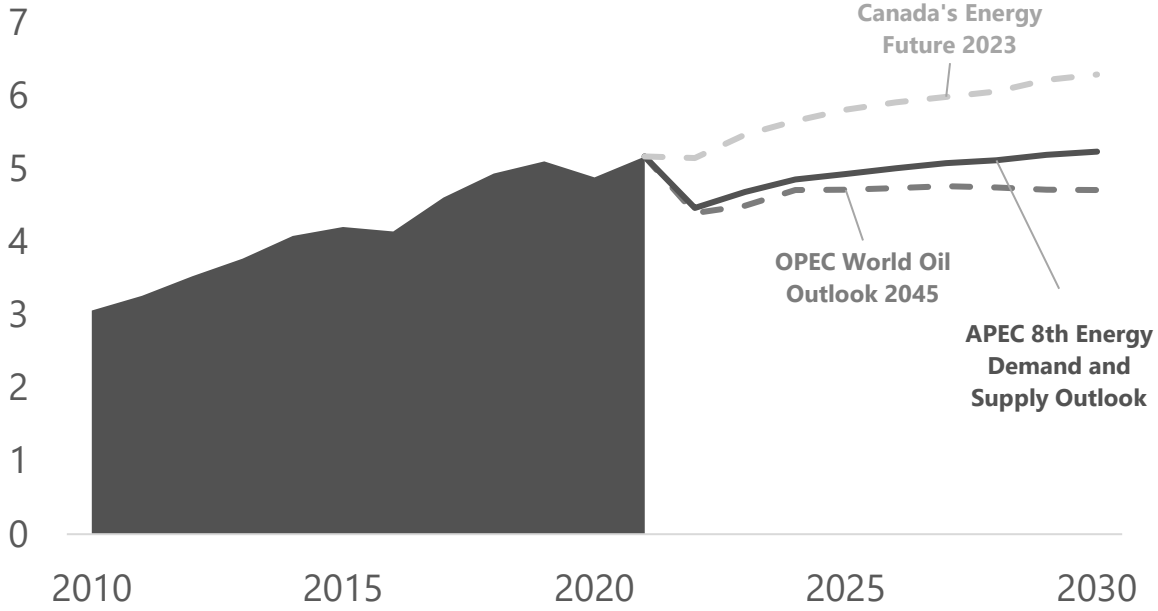
Shale oil and oil sands expected to be key components of USA and Canada oil production, respectively.

United States crude oil production, 2010 – 2030 (mb/d)



Source: EGEDA (2023), APERC (2022), EIA (2023), OPEC (2023)

Canada crude oil production, 2010 – 2030 (mb/d)

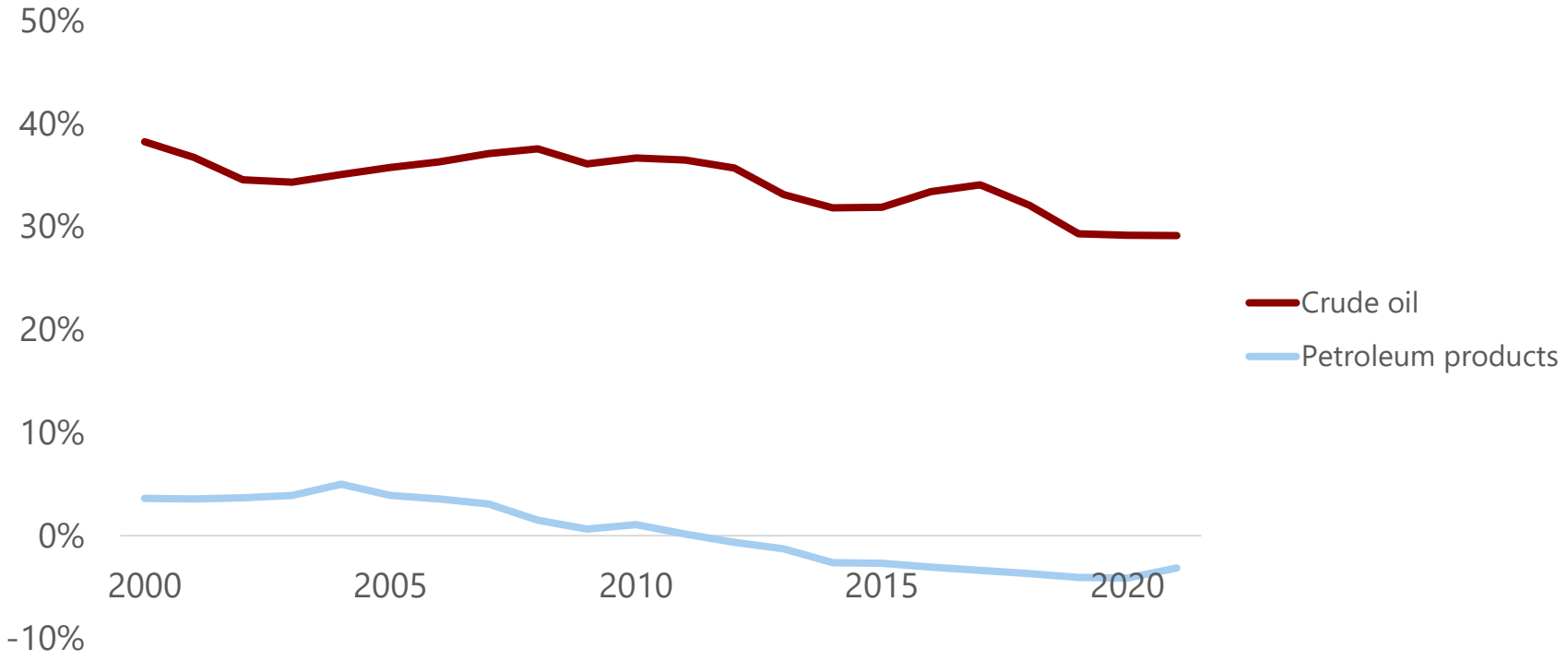


Source: EGEDA (2023), APERC (2022), CER (2023), OPEC (2023)

- USA production reaches over 13 mb/d in 2030, driven by shale oil development within Permian Basin.
- Canada's 2030 production range is between 4.7 and 6.3 mb/d, on the back of capacity expansions and debottlenecking of pipelines at existing oil sands facilities.

Declining oil import dependence trend in APEC

APEC crude oil and petroleum products import dependence, 2000 – 2021 (%)

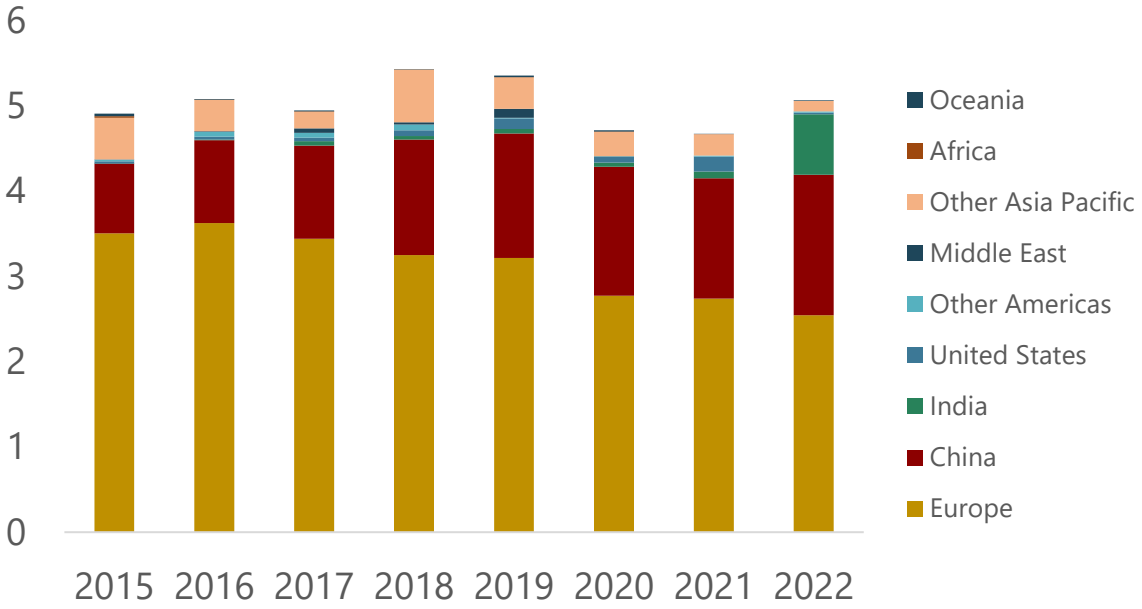


Source: EGEDA (2023)

- Between 2000 and 2021, APEC crude oil import dependence declined from 38% to 29%, while that of petroleum products also declined from 4% to -3%.
- The increase in tight oil production in the United States and oil sands production in Canada contributed to a decline in APEC's oil import dependency.

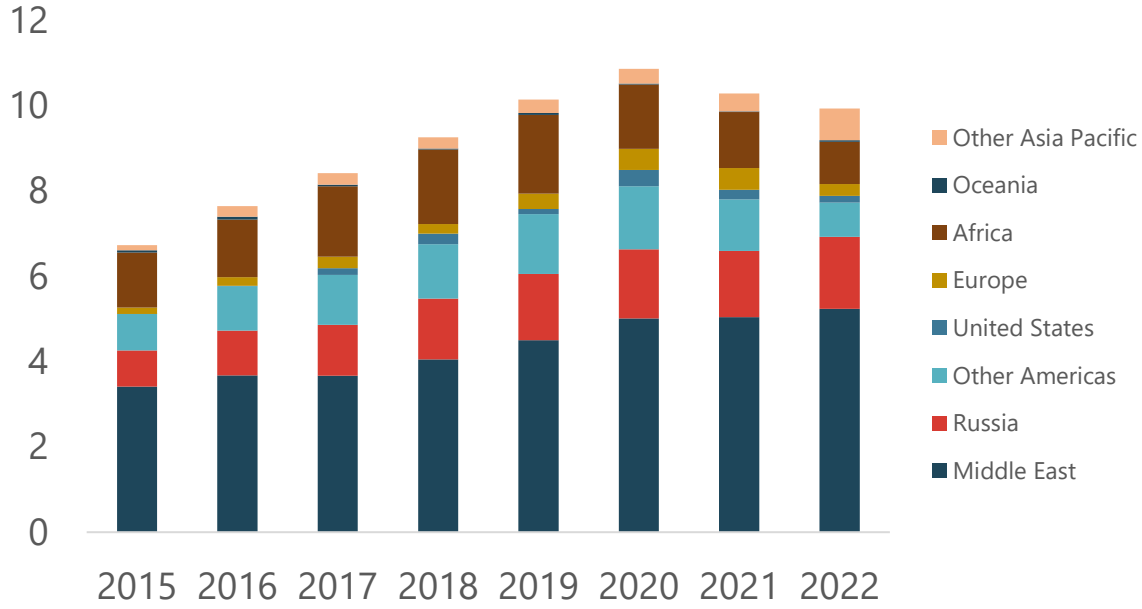
Russian crude oil shifted to Asia market, while China crude oil imports dropped in 2021 and 2022

Russia crude oil export, 2015 – 2022 (mb/d)



Source: EGEDA (2023), EI (2023)

China crude oil import, 2015 – 2022 (mb/d)

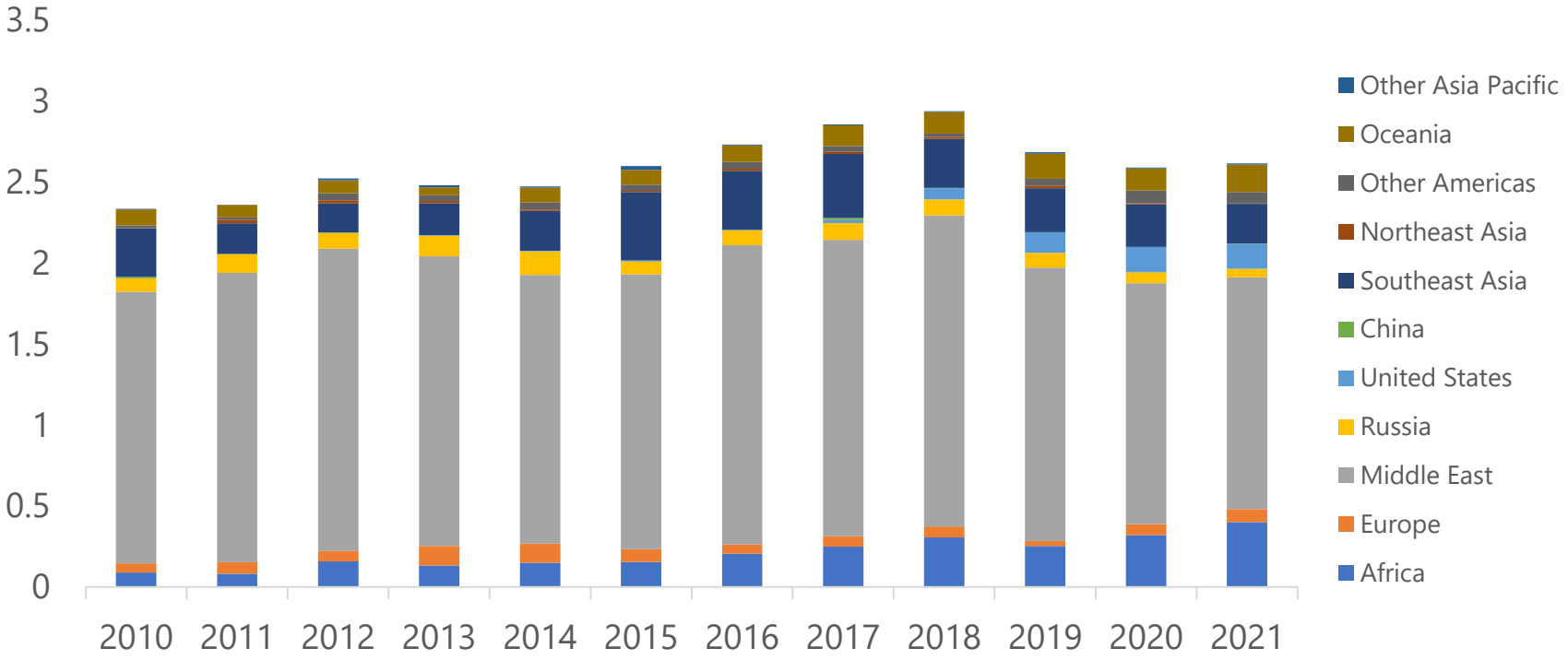


Source: EGEDA (2023), EI (2023)

- Europe remained the largest buyer of Russian crude and petroleum products from 2015 to 2022, albeit declining shares.
- China more than doubled its Russian crude import, from 0.82 mb/d to 1.65 mb/d. India also upped its import from negligible amount to 0.71 mb/d from 2015 to 2022.
- China's overall crude import settled at 9.9 mb/d in 2022, down from 10.9 mb/d in 2020 due to increased domestic production and lower consumption from strict COVID-19 measures.

Southeast Asia dependence on Middle East crude oil

Southeast Asia crude oil imports, 2010 – 2021 (mb/d)

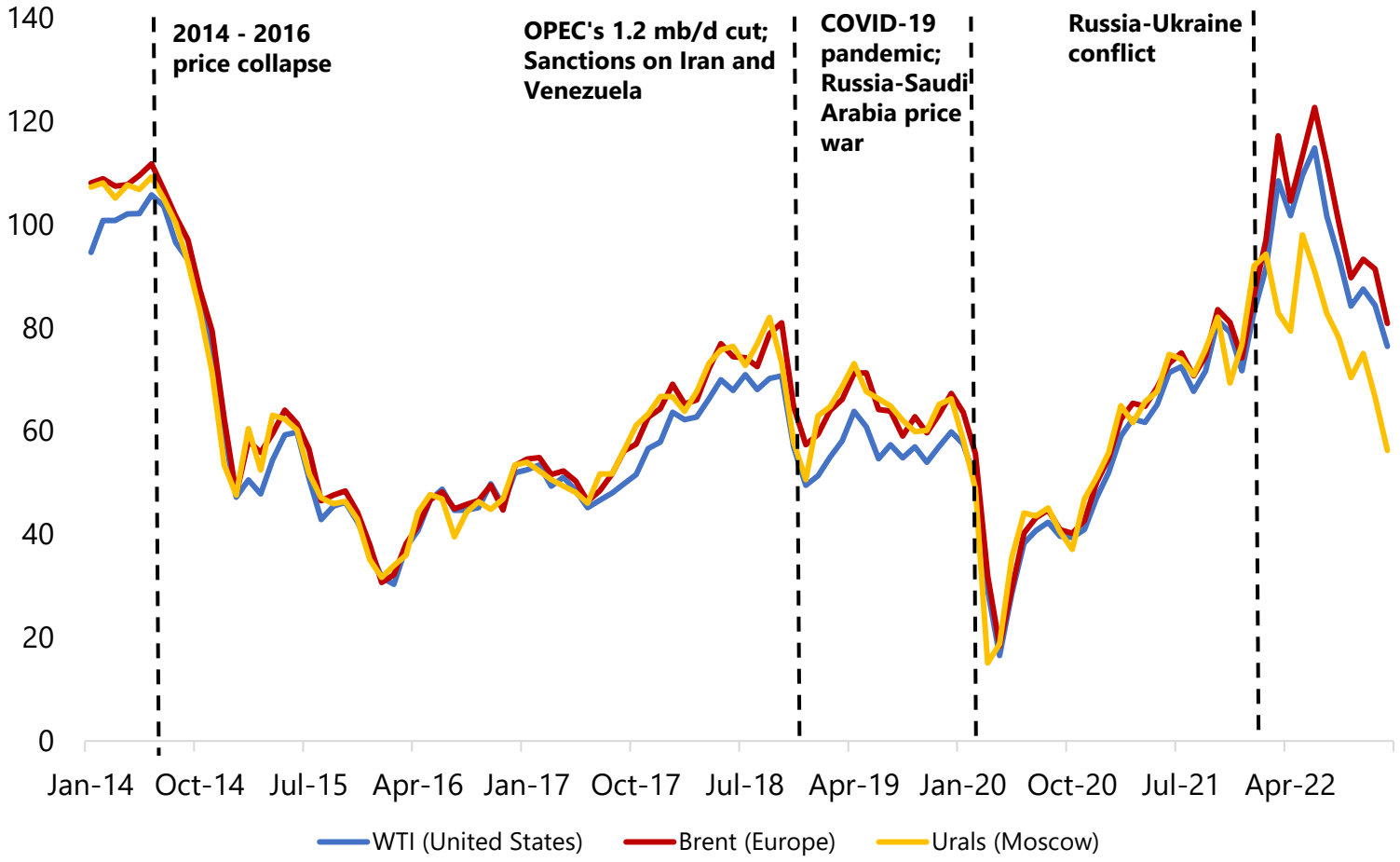


Source: EGEDA (2023), UN Comtrade (2023)

- Middle East has been the major supplier of sour-grade crude for Southeast Asia, although its share declined from 72% in 2010 to 55% in 2021.
- Inflow of crude oil from Africa (especially Angola and Nigeria) and the US to Southeast Asia rose significantly.
- Singapore and Thailand were the largest recipient of the lighter and sweeter U.S. crude oil.

Oil prices peaked in 2022

Crude oil prices, 2014 – 2022 (USD per barrel)



- US shale oil boom and weakening economic activity resulted in substantial price collapse in 2nd half of 2014.
- Rebound in oil demand increased the price from 2016 to 2018, with prices settling in at USD 80/barrel.
- China-US trade frictions resulted in oversupply, causing prices to fall to USD 64/barrel in late 2018.
- OPEC output cuts and Iran/Venezuela sanctions propped up prices to USD 67/barrel towards end of 2019.
- COVID-19 pandemic saw prices fell to below USD 20/barrel, after which it recovered due to loosening of restrictions.
- Russia-Ukraine conflict coupled with tight supplies drove the price to over USD 120/barrel in June 2022.

Source:

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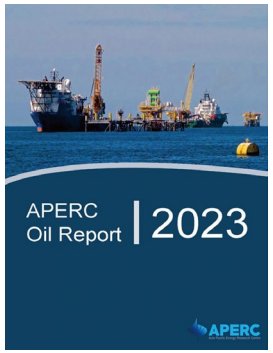
Key takeaways

- Global oil demand grew by 19 mb/d, or 24% between 2000 and 2022, with APEC's demand growing by 9 mb/d.
- APEC oil demand increases to 58.5 mb/d in 2030, with China taking the lead. Divergence of views on China's demand: 16 – 18 mb/d in 2030.
- Global oil production increased to 91.2 mb/d in 2022, with APEC accounting for 44% of the global total. By 2030, APEC is expected to grow its output by an additional 2.8 mb/d.
- Growth in domestic production in US and Canada contributed to a decline in APEC's oil import dependency from 2000 to 2021.
- Russian crude oil shifted to Asia market, while China crude oil imports dropped in 2021 and 2022.
- A confluence of events (Russia-Ukraine conflict, tight supplies) elevated crude oil and petroleum products prices to high levels in 2022. The prices have since moderated.



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