

3-2. APERC Oil Report 2020

APERCC Workshop

The 60th Meeting of APEC Energy Working Group (EWG)
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Outline of presentation

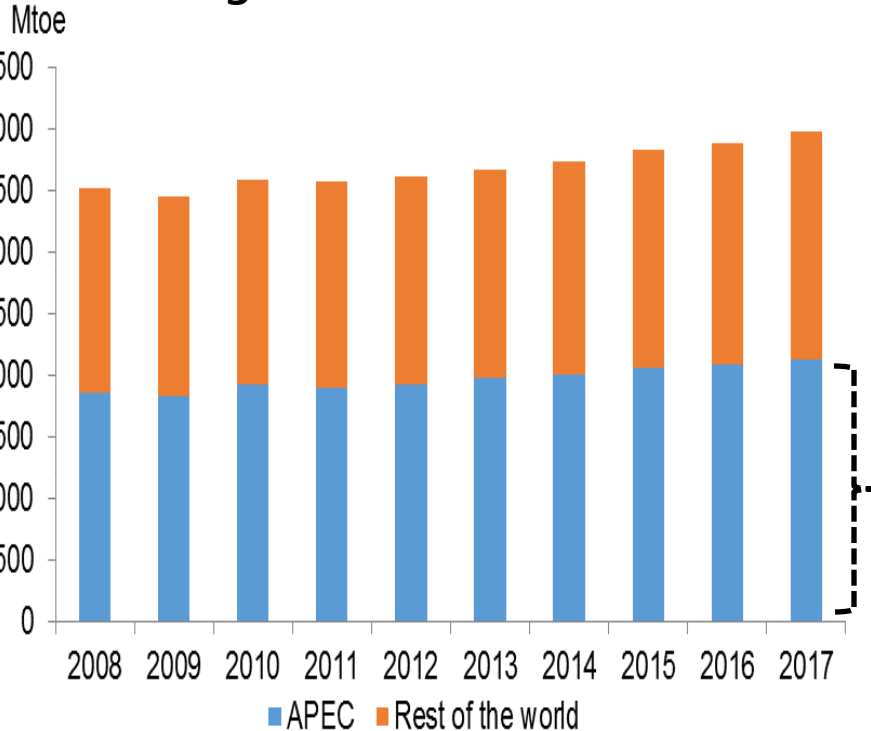
- APEC vs global oil demand
- APEC vs global oil supply
- APEC oil import dependence
- Key factors influencing oil market
 - Falling crude prices
 - Brent-WTI spread
- Oil market highlight: US shale oil expansion vs OPEC+ production cut
- Oil market highlight: Impact of IMO sulfur cap regulation



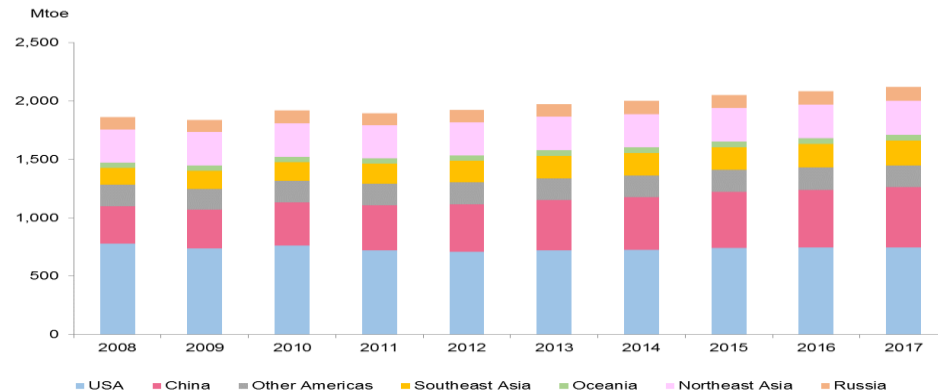
APEC vs global oil demand

APEC oil demand has been growing strongly for the past decade

APEC vs global demand, 2008-2017



APEC demand, by region, 2008-2017



Source: APERC analysis and IEA (2019)

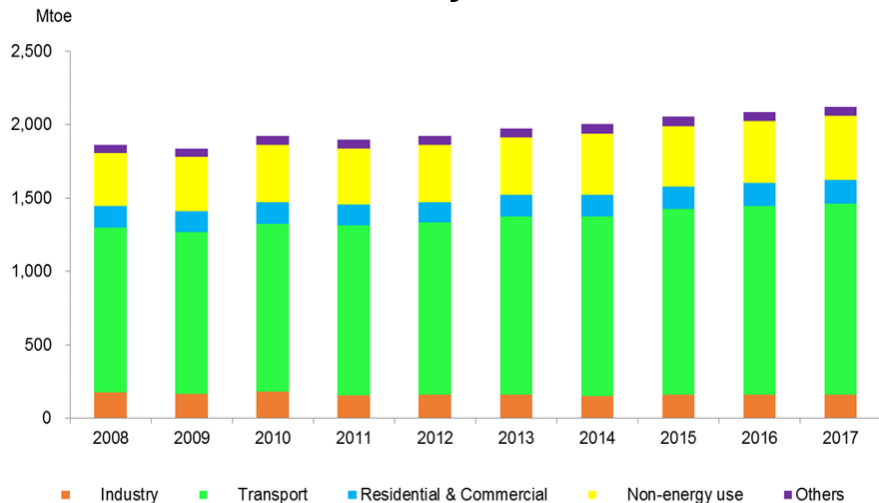
Global oil consumption reached 3,985 million tonnes in 2017.

APEC oil demand accounted for 53% of total world demand.

APEC high growth (1.7% annually) was mainly due to the contribution of China and southeast Asia.

Transport sector has the largest share of APEC oil consumption

APEC oil demand, by sector, 2008-2017

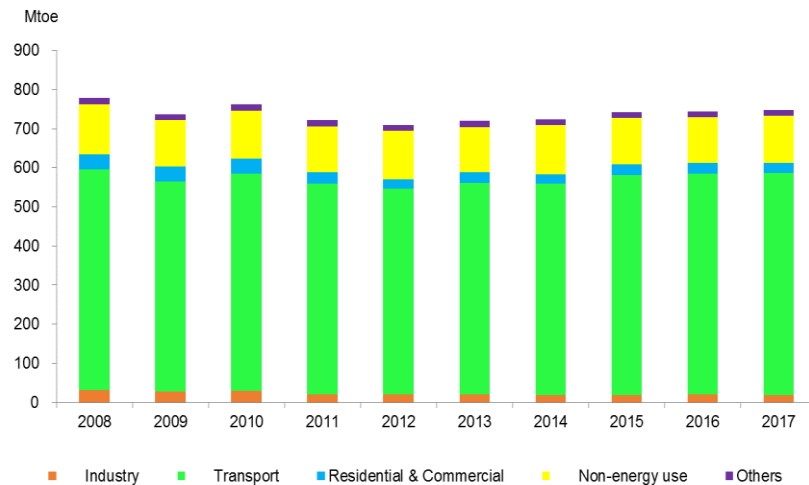


Source: APERC analysis and IEA (2019)

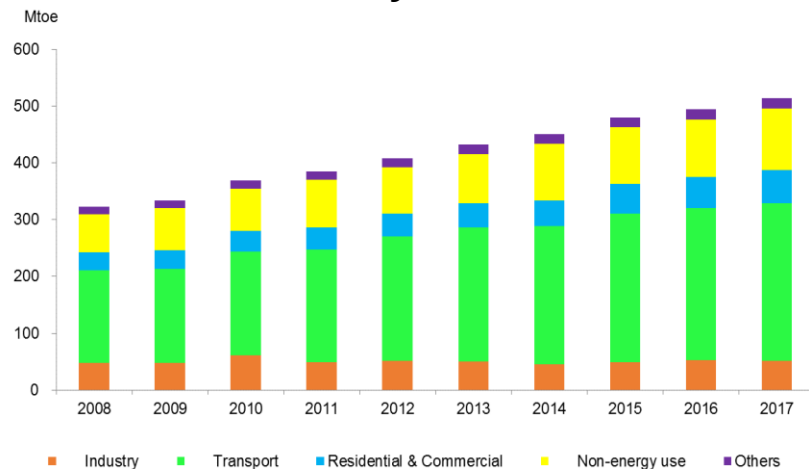
Transportation has been the dominant sector (61%) in APEC during 2008-2017.

APEC demand increases slowly (1.6% annually) due to declining demand in the U.S. (-0.45% annually) while China demand is growing at 6.5% annually.

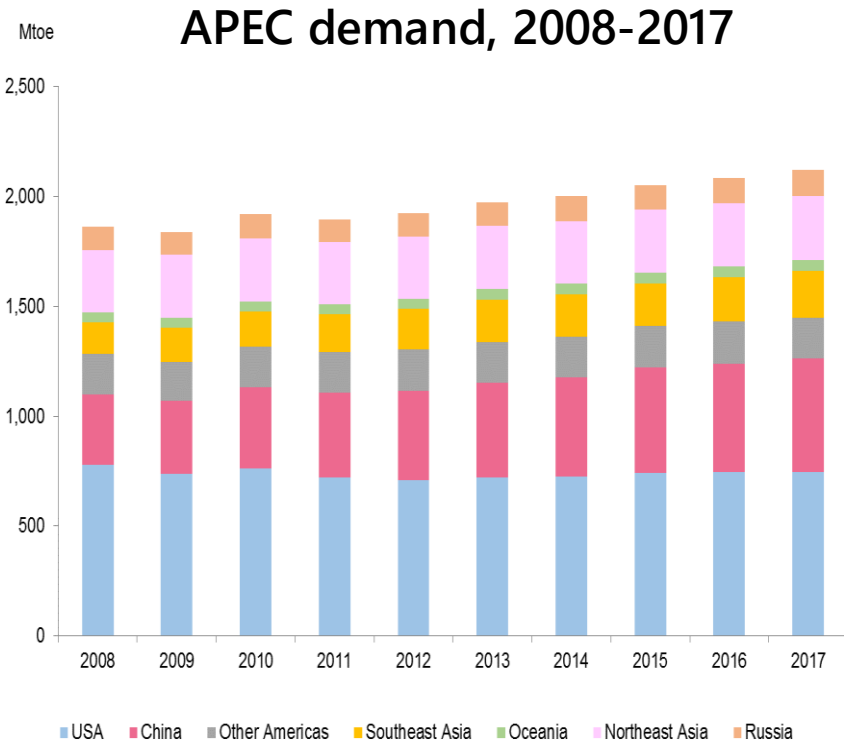
U.S. demand, by sector, 2008-2017



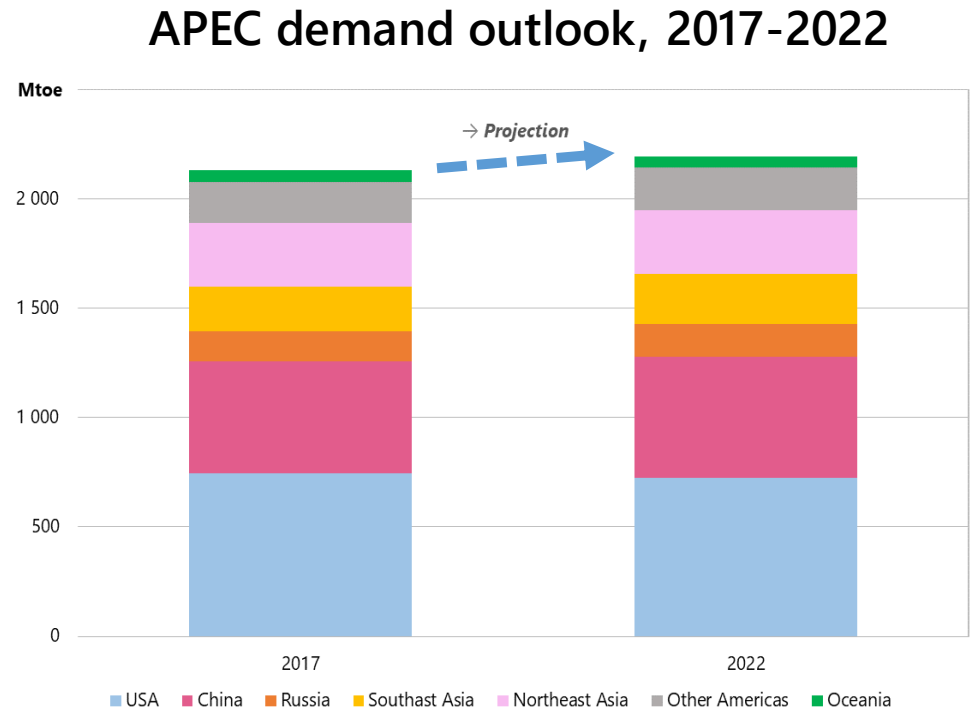
China demand, by sector, 2008-2017



APEC oil demand continues its growth towards 2022



Source: APERC analysis and IEA 2018



China and southeast Asia demand growths are projected to be largest in APEC (1.7% and 2.3% annually towards 2022) contributing to 35% share of APEC.

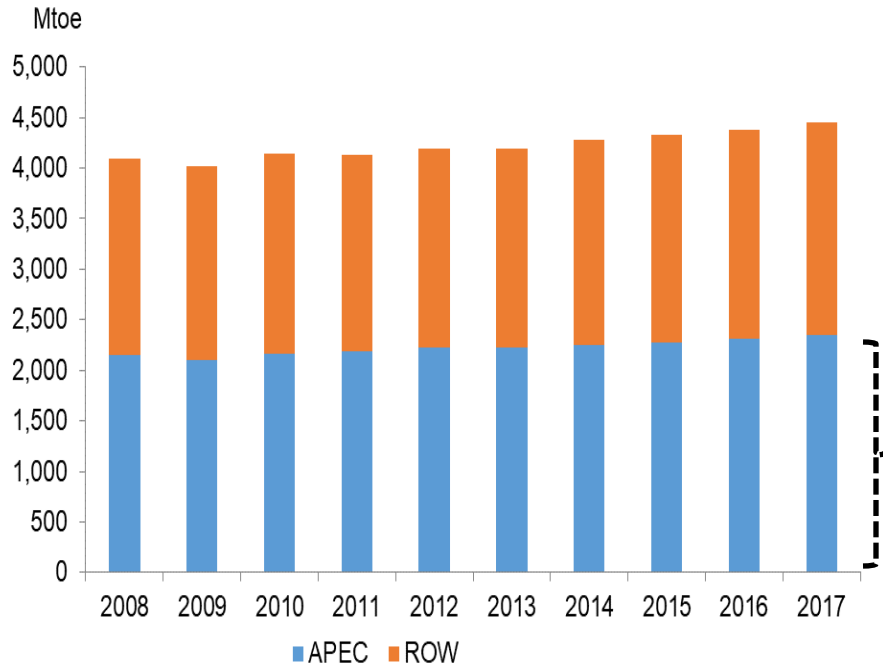
APEC oil demand will shift more to Asia in the coming years.



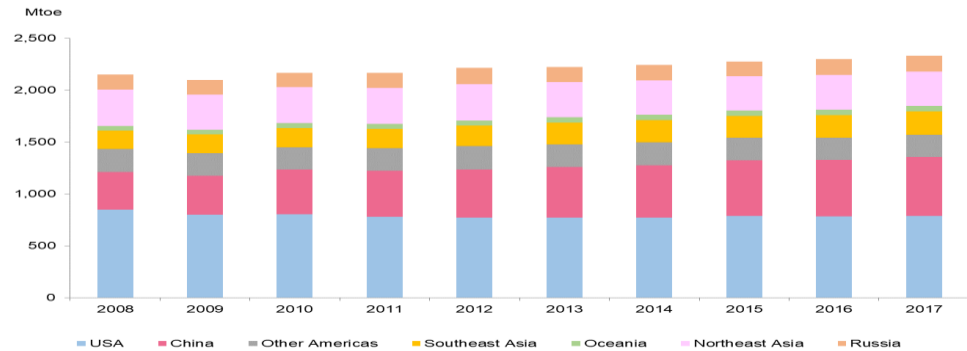
APEC vs global oil supply

APEC accounted for 53% of global oil supply in 2017

APEC versus global supply, 2008-2017



APEC supply, by region, 2008-2017



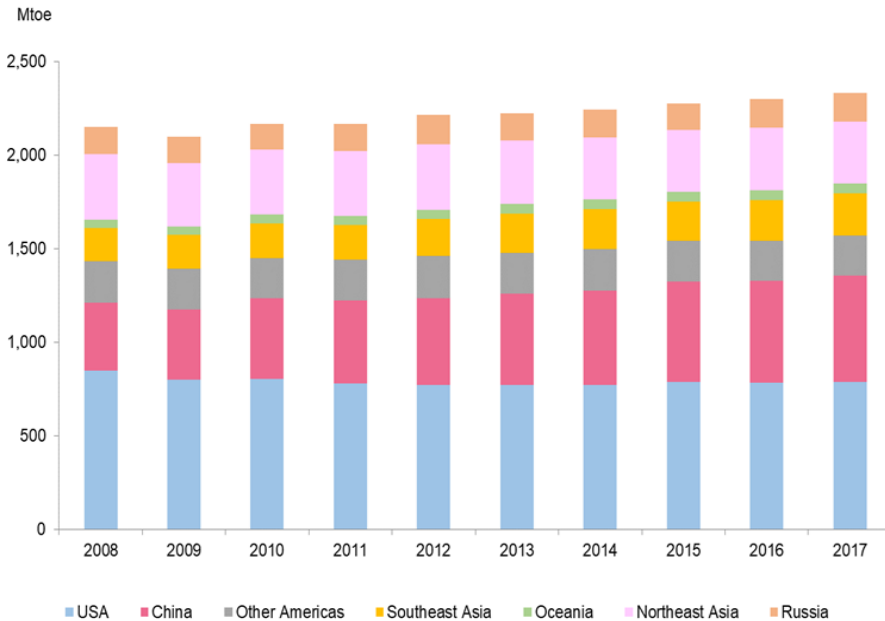
Source: APERC analysis and IEA (2019)

Global oil supply increased faster than demand to reach 4,454 million tonnes in 2017 (0.96% annually).

The U.S. and Russia accounted for 62% of APEC oil production.

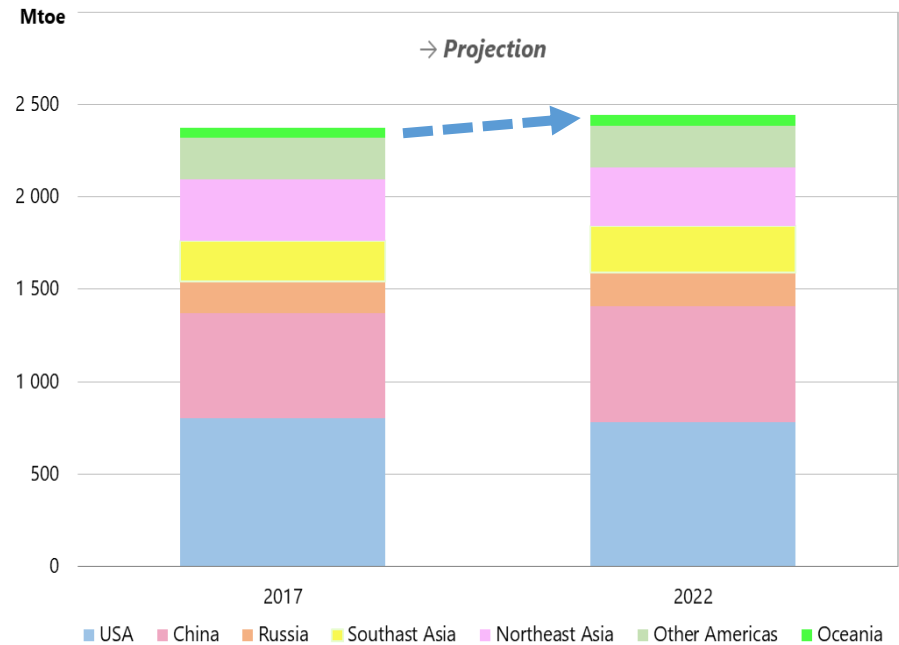
APEC oil supply continues its growth towards 2022

APEC supply, 2008-2017



Source: APERC analysis and IEA 2018

APEC supply outlook, 2017-2022



Before COVID-19 and the resulting drop in oil prices, APEC oil supply was expected to grow by 0.56% annually to reach 2,467 million tonnes in 2022.

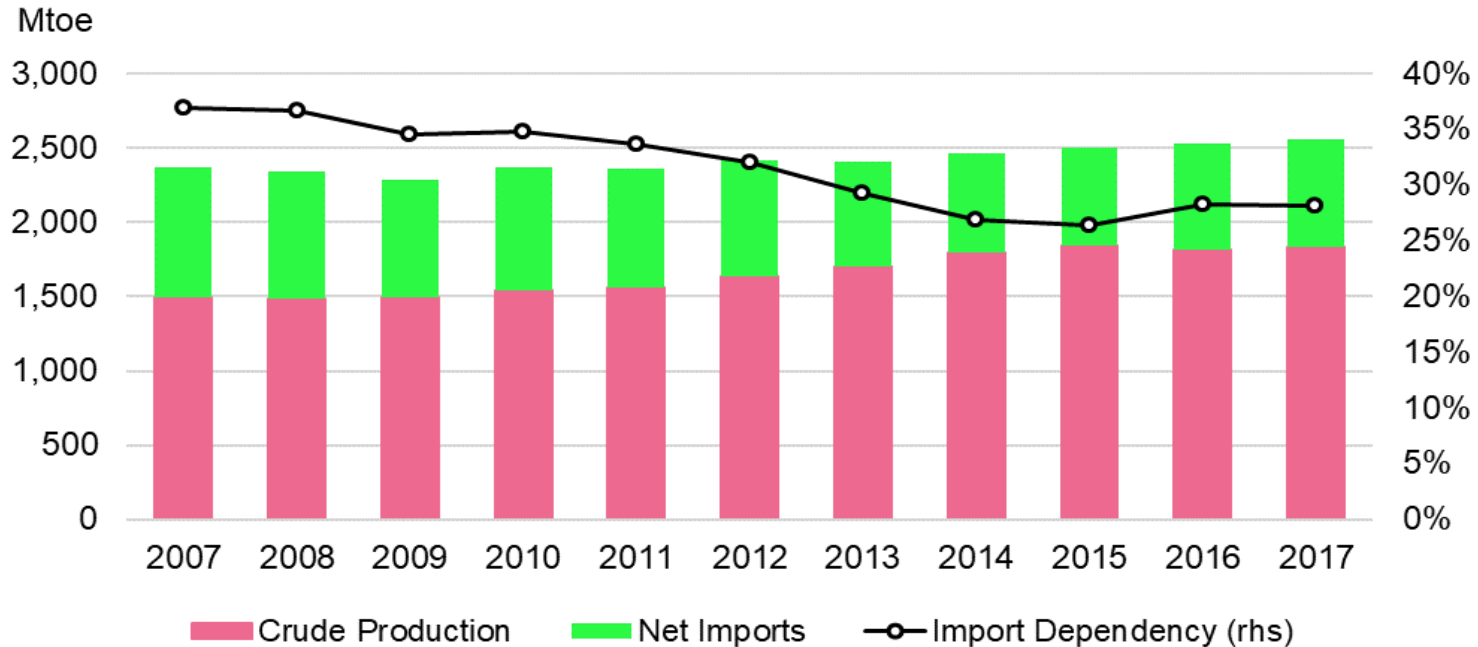
The U.S. was expected to increase its production share while Russia lost share. Given the oil demand reductions and lower oil prices caused by the pandemic, U.S. oil production is now expected to decline in 2021 and 2022.



APEC oil import dependence

APEC crude oil import dependency has improved for the past decade

APEC crude oil import dependency, 2007-2017



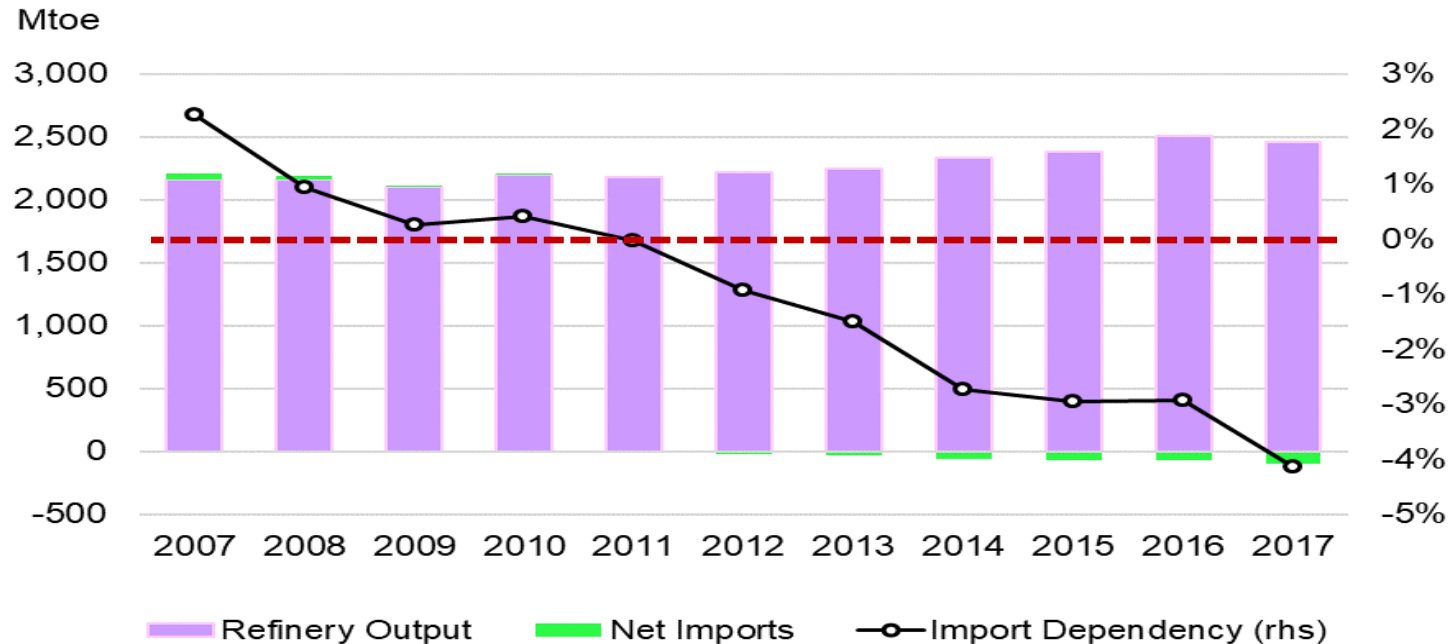
Source: APERC analysis and IEA 2018

Indigenous crude oil production increase by the U.S., Russia, and Canada contributed to APEC better import dependence.

Import dependence started to increase in recent years because of the production declines in the U.S. and China along with low crude oil prices.

APEC product import dependency has been self-sufficient since 2011

APEC oil products import dependency, 2007-2017



Source: APERC analysis and IEA 2018

APEC has been self-sufficient and a net-exporter of oil products since 2011. Massive crude producers like the U.S. and Russia are primarily oil-exporters. On the other hand, Australia and Mexico are highly dependent on imports.



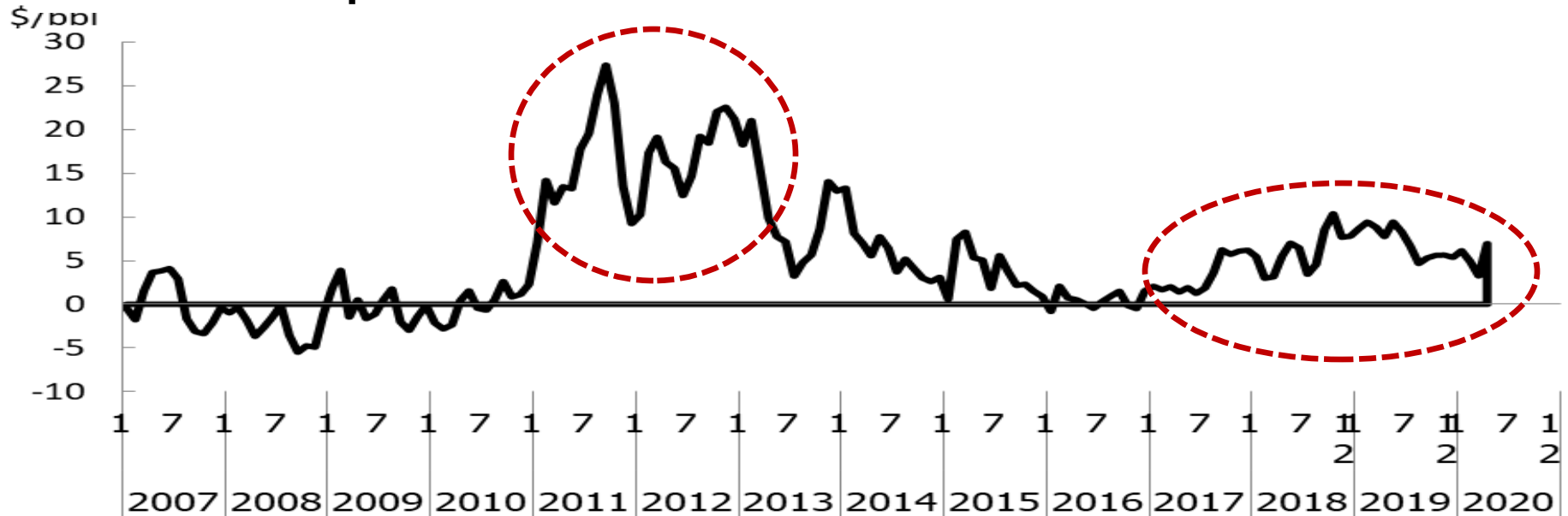
Key factors influencing oil market:

Falling crude prices

Brent-WTI spread

Brent-WTI has varied substantially since 2011

Brent-WTI spread, 2007-2018



Source: IEA (2020)

The Brent-WTI spread in 2011-2013 is largely explained by a build-up of crude oil stocks in the U.S. (shale revolution/limited takeaway capacity) and Arab Spring.

Brent-WTI spread once again has fluctuated since 2017 because of temporary shortage of pipelines to carry oil out of the Permian basin in West Texas, U.S.A.

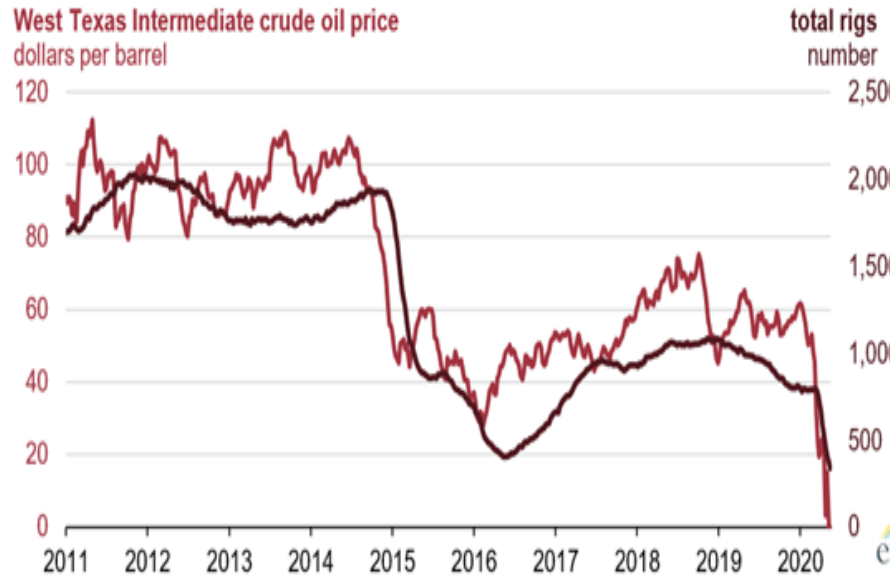
The pipeline bottleneck was relieved in 2020 by a combination of new pipeline capacity and reduced oil production in the Permian Basin.



Oil market highlight: US shale oil expansion vs OPEC+ production cut

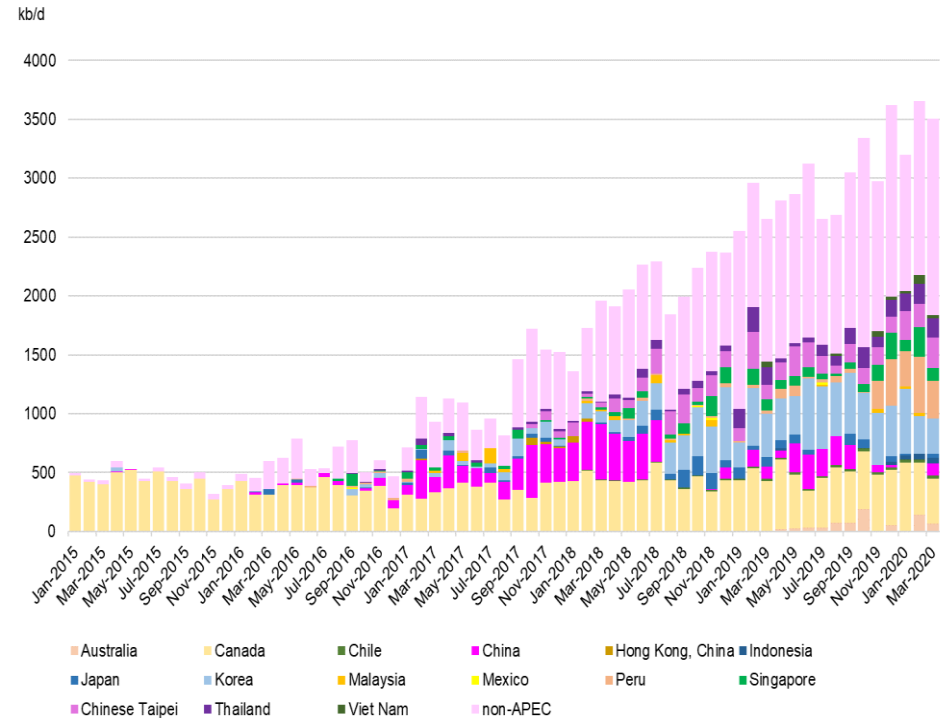
U.S. shale oil production increases and influences crude price down

WTI price and total rig count, 2011-2020



Source: Statista (2017)

US crude exports, 2015-2020

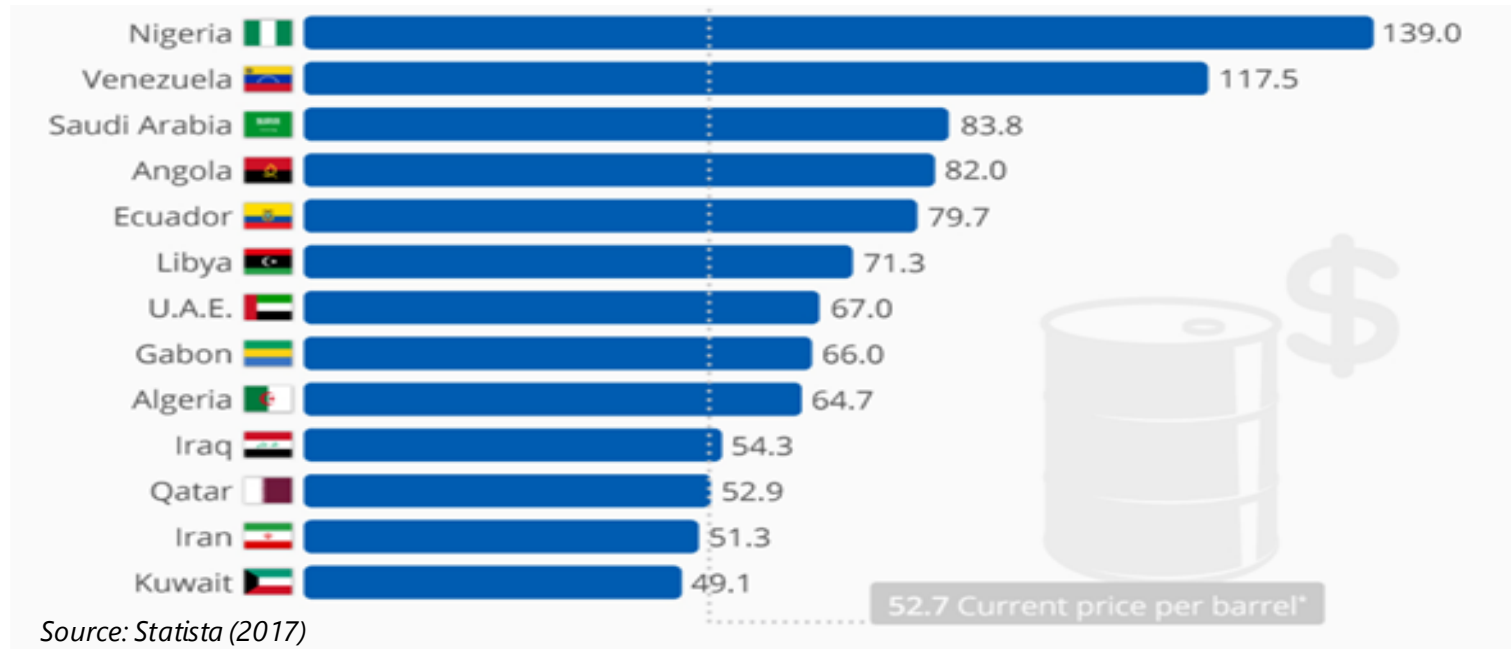


U.S. crude oil production in 2019 hit 12.2 mb/d with the number of operating rigs hovering around 1,000 and its export increased to 3.0 mb/d.

Given the reduced demand for oil and resulting low oil prices, EIA projects that U.S. crude oil production will fall to 11.4 mb/d in 2020 and 11.1 mb/d in 2021.

OPEC+ cut production to counter oil price drops

Oil prices (USD/bbl) needed for OPEC to balance their budgets



OPEC+ have been hit hard by demand drop and oil prices collapse.

Facing such pressure, OPEC+ agreed to cut their production by 9.7 mb/d to stabilize the oil market.

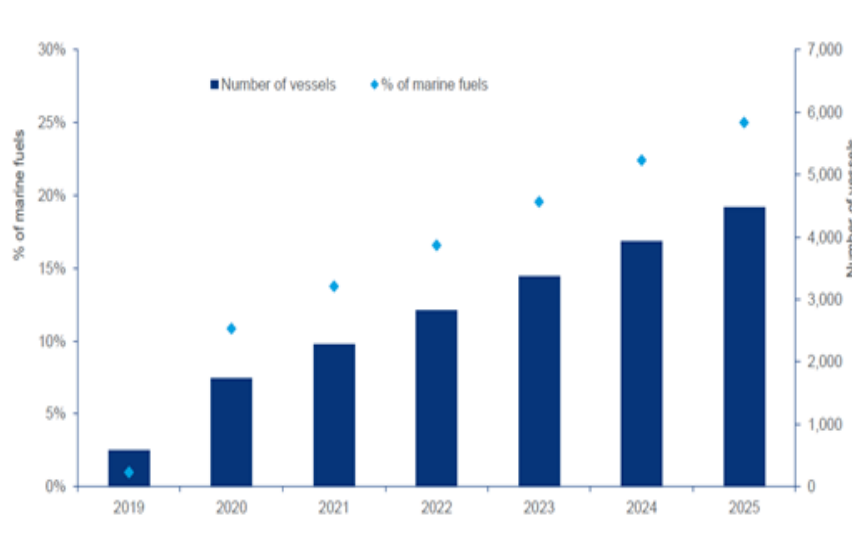
Crude oil prices higher than USD 50/bbl are typically the minimum requirement for most OPEC countries to balance their budgets.



Oil market highlight: Impact of IMO sulfur cap regulation

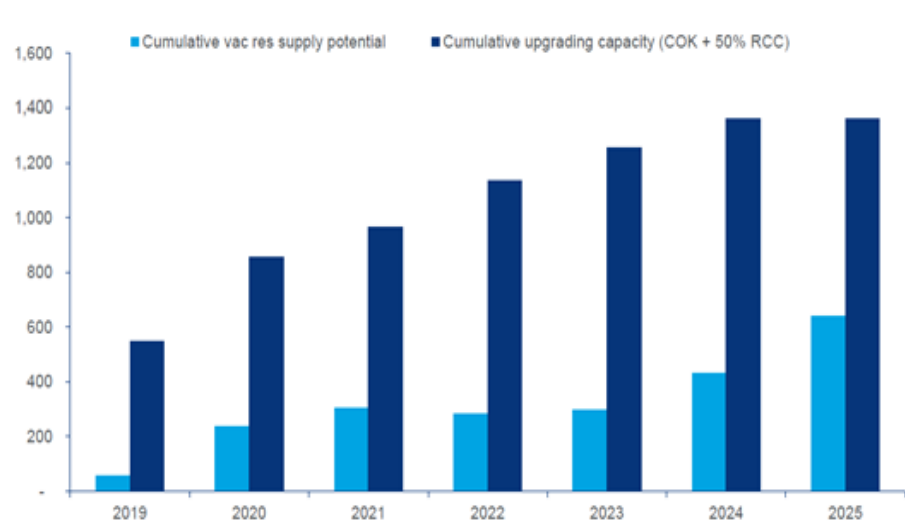
IMO presents significant changes in VLSFO market and prices in 2020

Scrubber installations, 2019-2025



source: wood mackenzie (2019)

Vacuum residue vs capacity to upgrade it, kb/d



International Maritime Organization (IMO) tightened the bunker standard with the aim to mitigate the environmental impact.

Before implementation, Wood Mackenzie projected a USD 30/ton premium for 0.5% S blend versus a 3.5% blend, the cost of which would be borne by refiners, crude producers, ports, and ship owners.

Refinery upgrades before implementation and the drop in oil demand due to COVID-19 essentially eliminated the premium for VLSFO in the first half of 2020.



Thank you for your kind attention

<https://aperc.or.jp/>

https://aperc.or.jp/file/2020/9/28/APERC_Oil_Report_2020_v8+-20200925.pdf

