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Oil and gas projection towards 2050 in Outlook 7th Edition

Dr. Ruengsak Thitiratsakul
Research Fellow, APERC



Topics of Presentation

APEC total primary energy supply 2050

APEC oil 2050

Demand, supply production, and refinery capacity

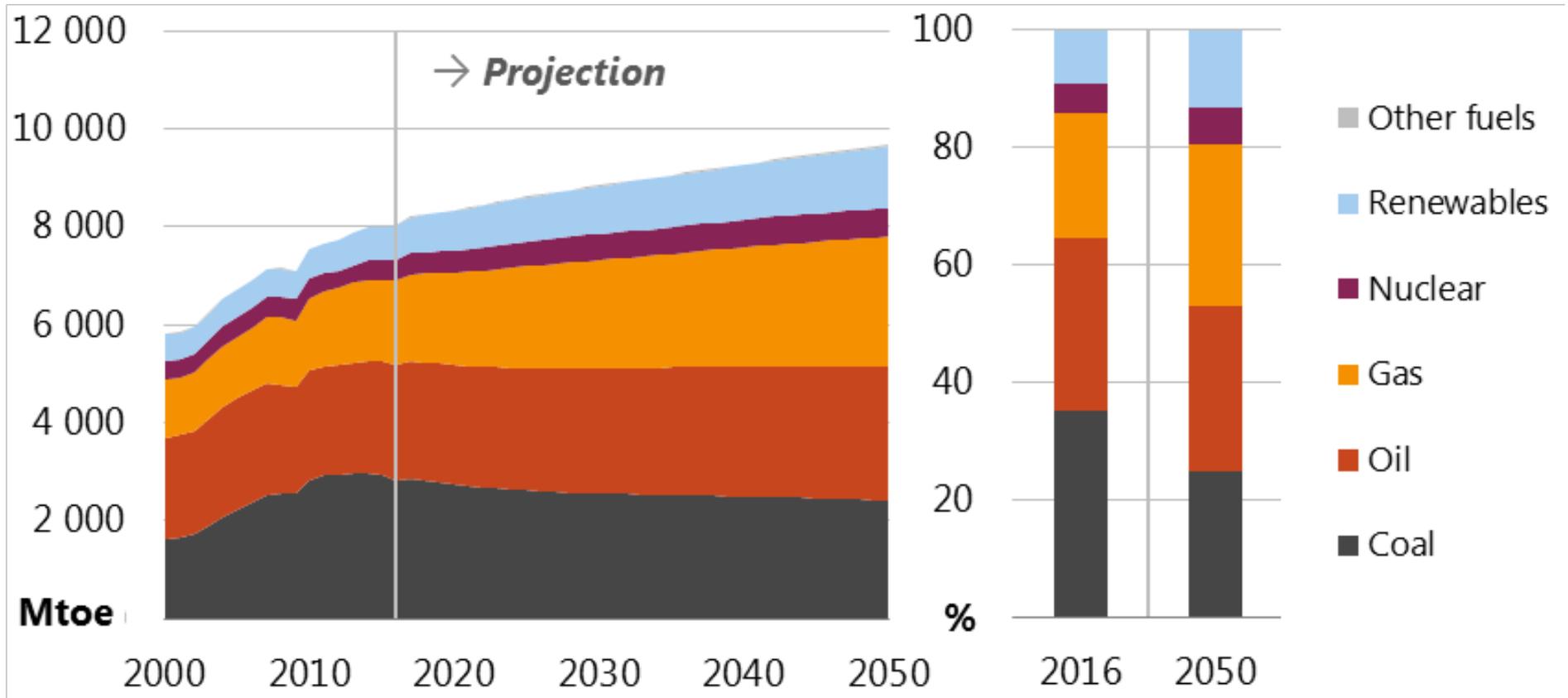
APEC natural gas 2050

Demand, supply production, and refinery capacity

Challenge and opportunity in intra-APEC oil and natural gas trade

Fossil fuels dominate at 80% of APEC's fuel mix in 2050

APEC total primary energy supply, 2000-2050

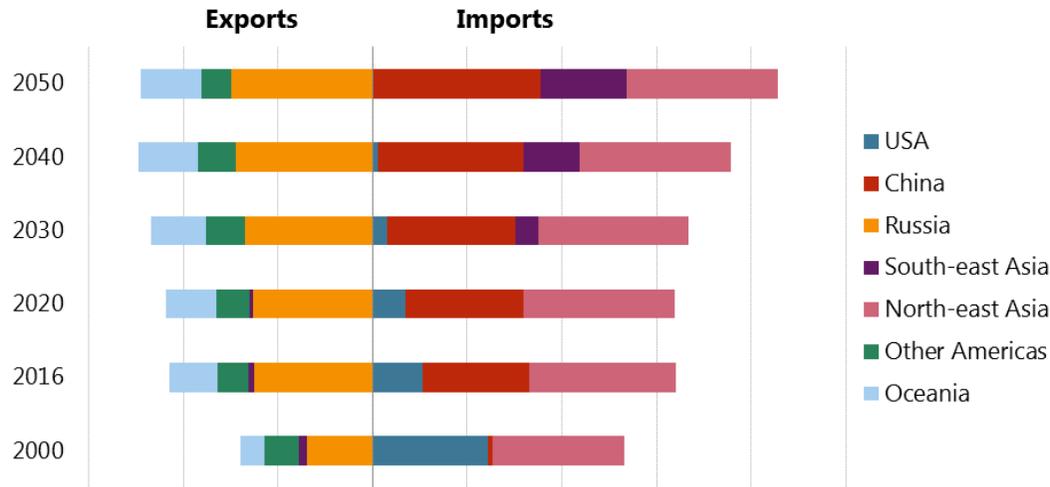


Source: APERC analysis and IEA 2018

APEC energy supply is projected to rise 22% from 2016 to 2050 with oil and gas share increasing from 50% to 55%.

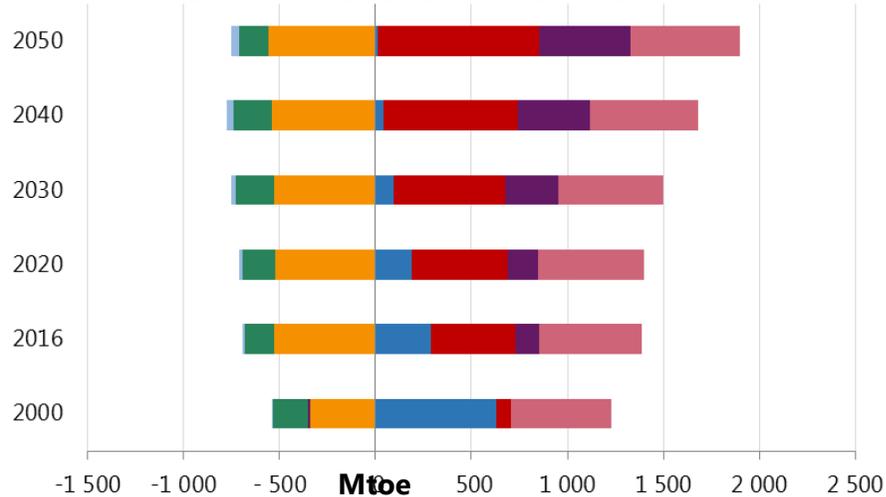
Oil and gas supply gap continues to widen

Energy supply gap by regional grouping, 2000-2050



US energy import falling to zero in 2050 turns the USA into a net energy exporter and contribute to the widening supply gap

Oil and gas supply gap by regional grouping, 2000-2050



China, north-east Asia; and south-east Asia lead APEC's oil and gas imports and contribute to the widening supply gap

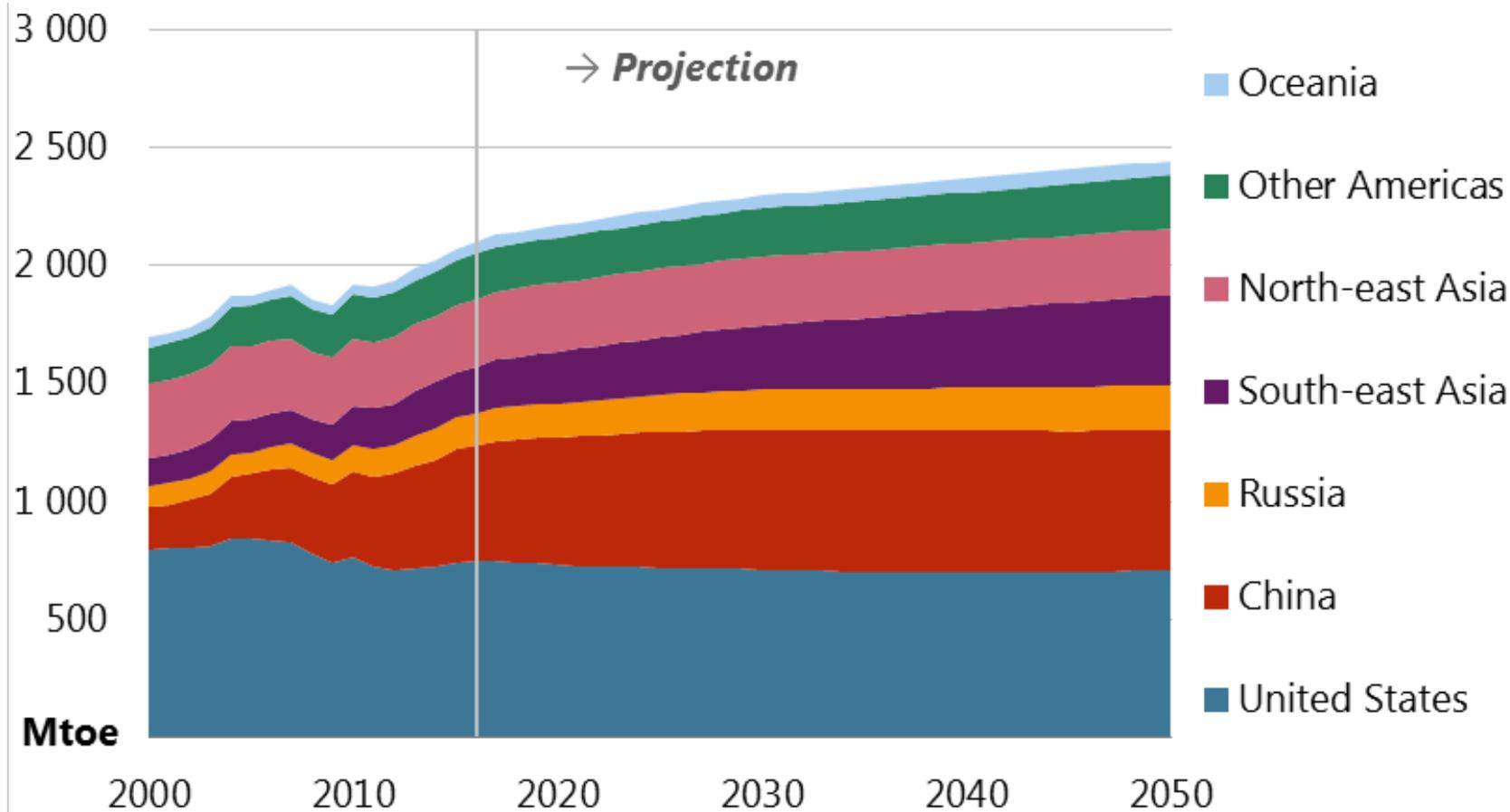
Source: APERC analysis and IEA 2018



APEC oil demand, supply, production, and refinery capacity

Increasing oil demand in APEC is driven by China and SEA

APEC oil demand by region, 2000-2050

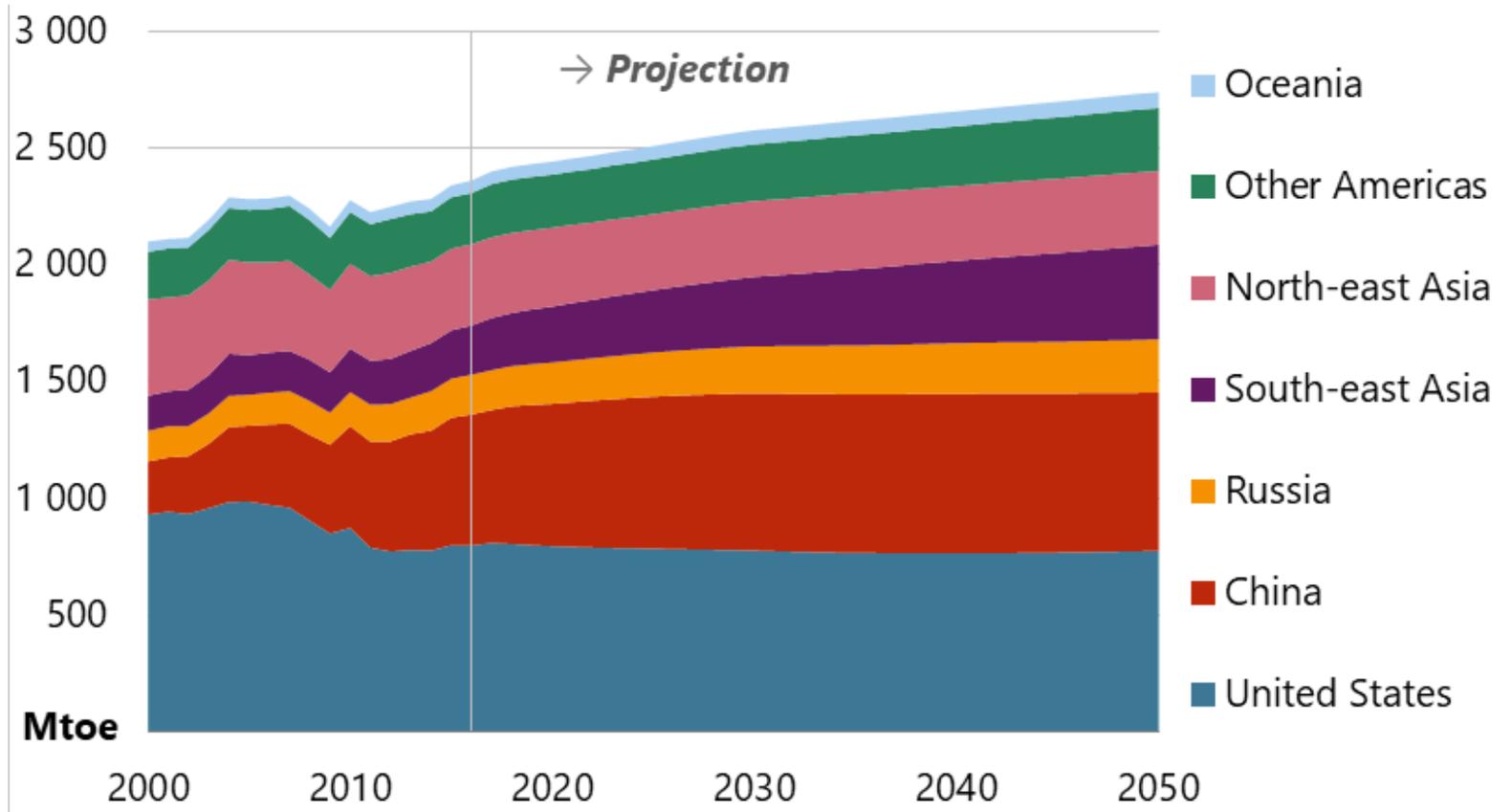


Source: APERC analysis and IEA 2018

Projected oil demand growth in APEC reaches 16% led by SEA (CAGR 1.9%) towards 2050.

Oil supply in APEC is driven by China and SEA

APEC oil supply by region, 2000-2050

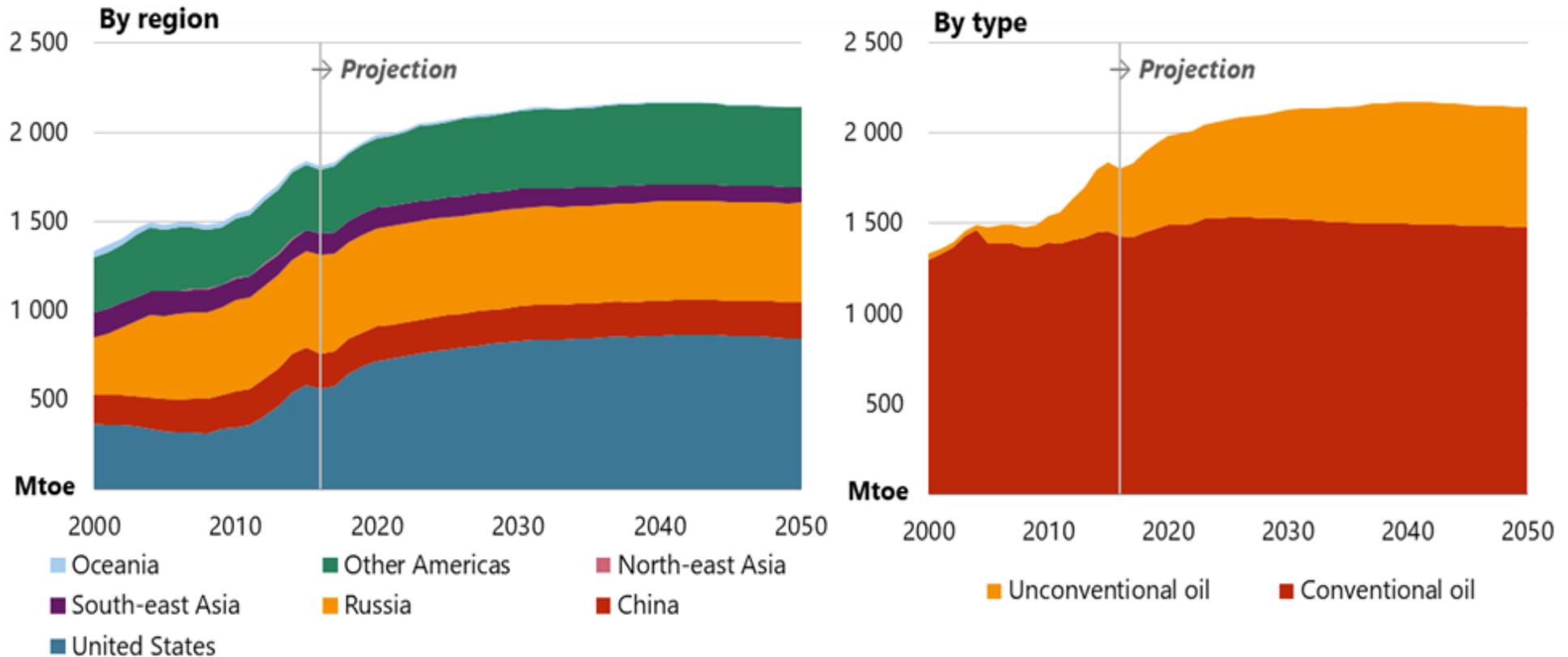


Source: APERC analysis and IEA 2018

Projected oil supply growth in SEA peaks at 92% by 2050.

60% of APEC crude production in 2050 is from the USA and Canada

APEC crude oil production by region and type, 2000-2050



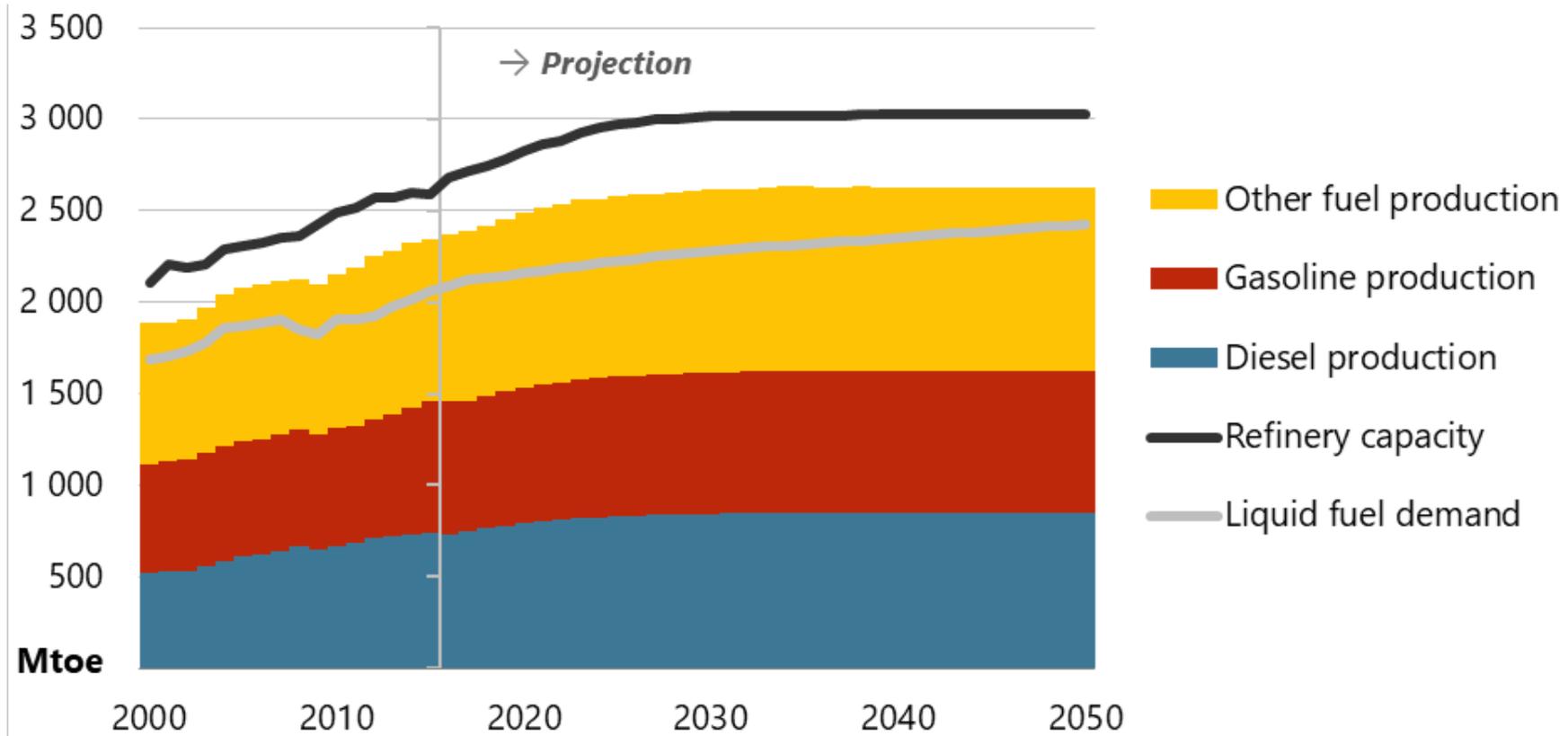
Source: APERC analysis and IEA 2018

APEC production rises 19% from 2016 to 2050.

Shale oil from USA increases while SEA production declines by 2050.

Projected spare refinery capacity in APEC opens up opportunity for increased exports

APEC oil demand, petroleum production, and refinery capacity, 2000-2050

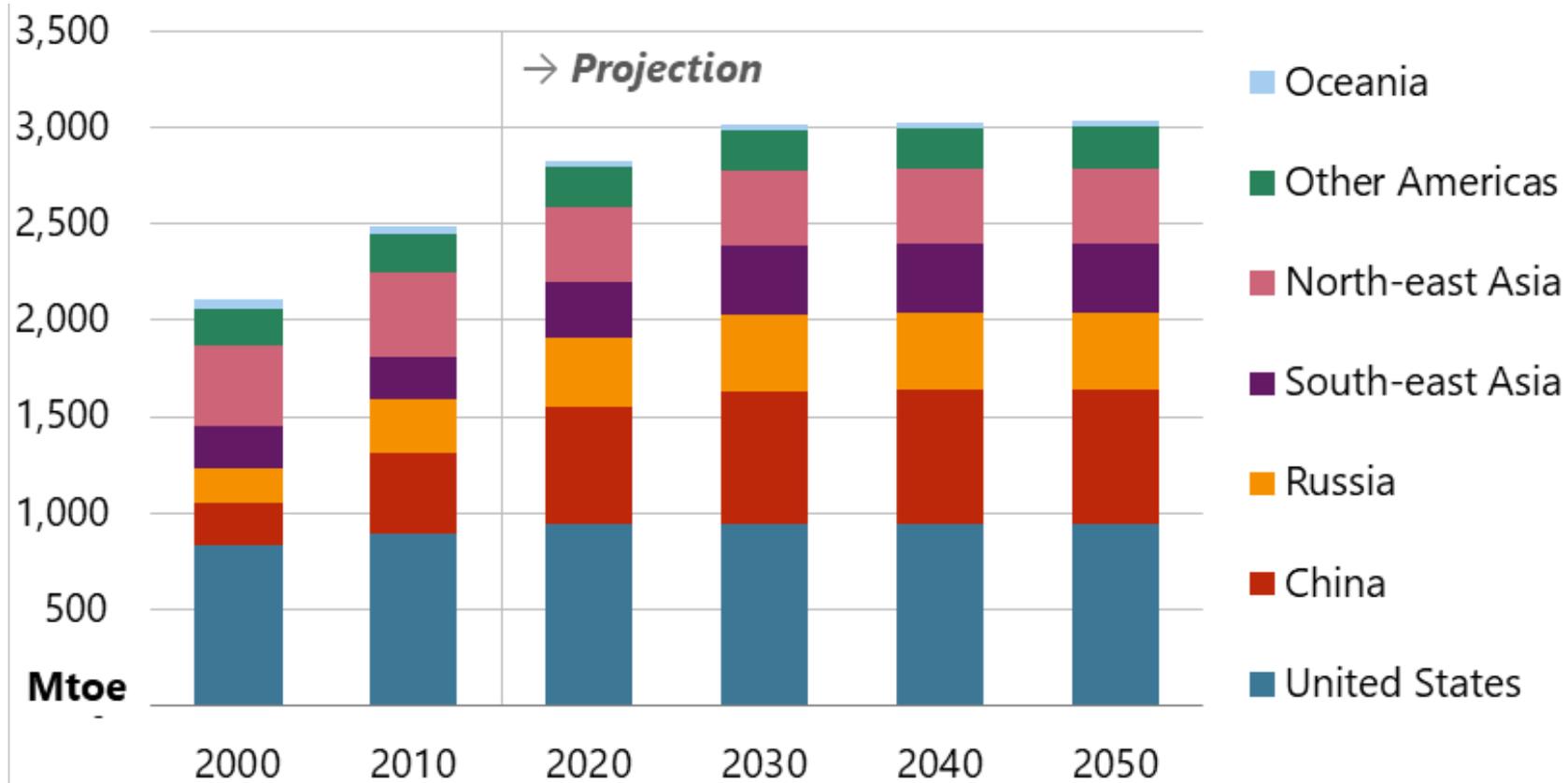


Source: APERC analysis and IEA 2018

APEC refinery maintains its run at 90% utilization rate in the BAU.

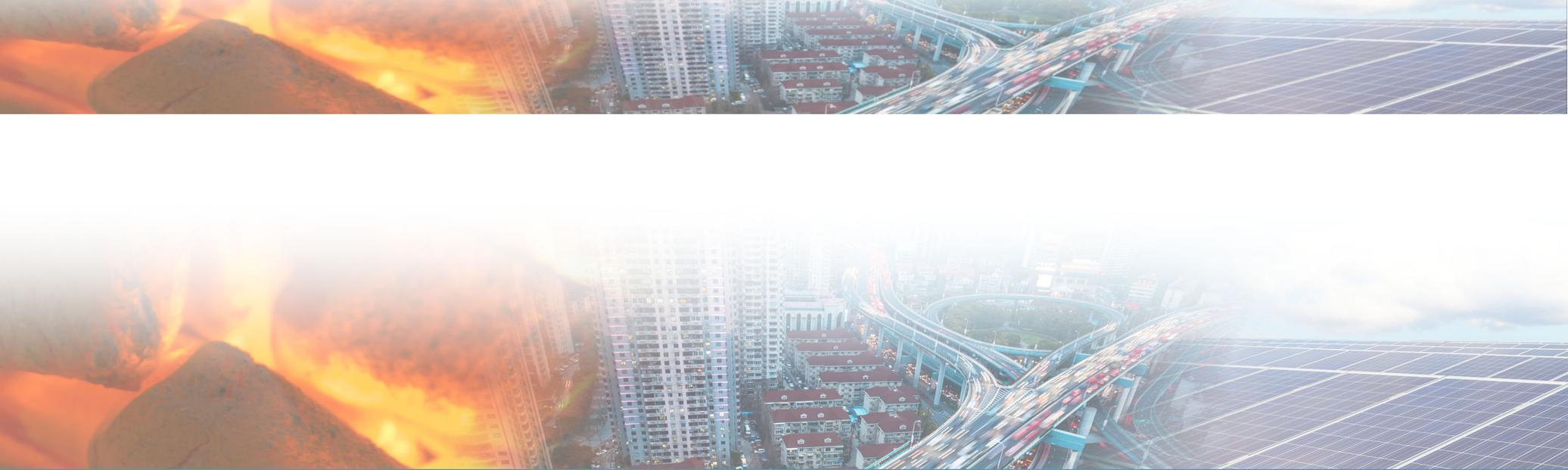
Projected refinery capacity in APEC slowed down towards 2050

APEC refinery capacity by region, 2000-2050



Source: APERC analysis and IEA 2018

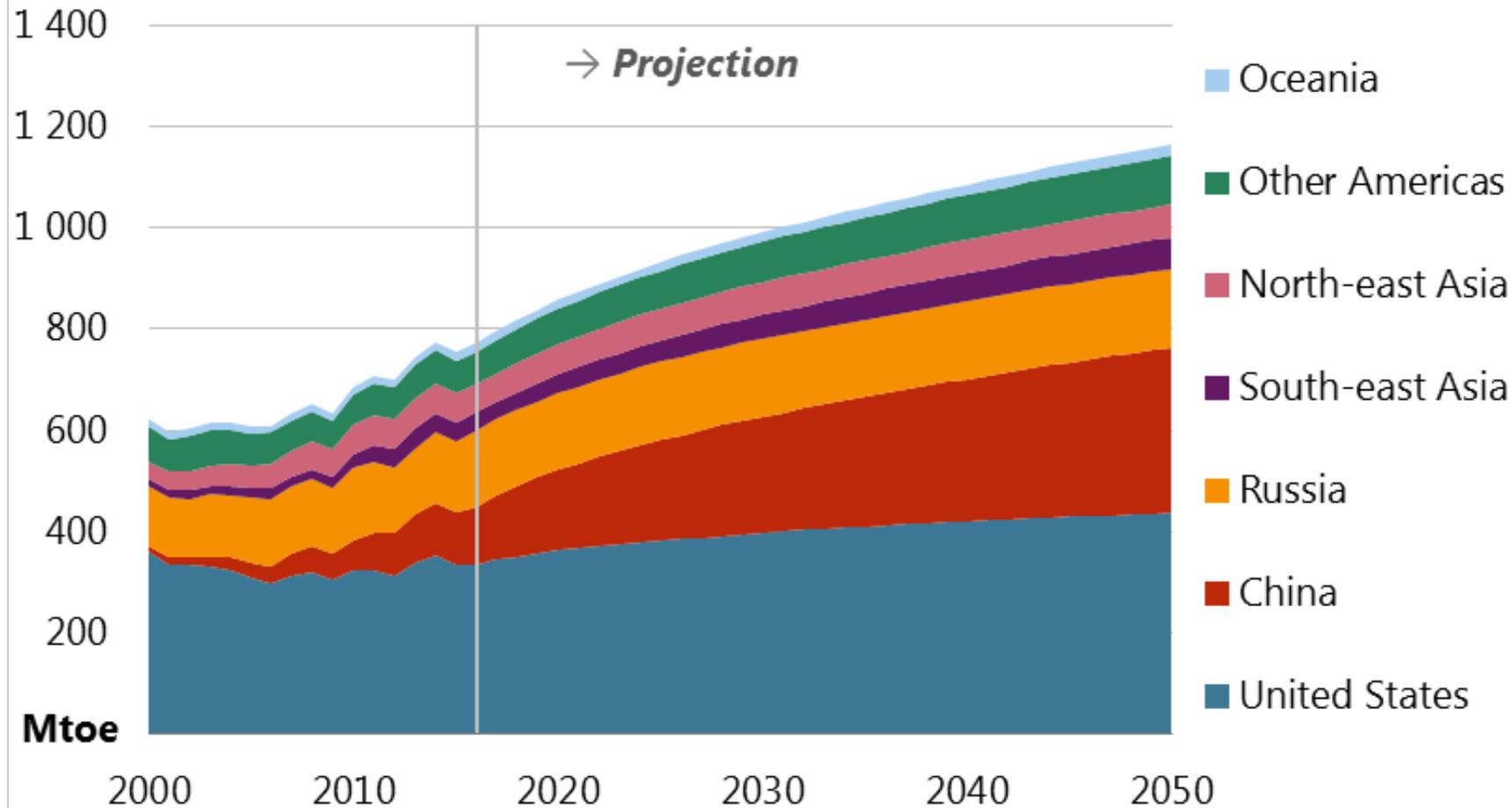
Less aggressive refinery installation in APEC in long run.



APEC natural gas demand, supply, production, and LNG capacity

APEC accounted for 56% of global gas consumption in 2016

APEC natural gas demand by region, 2000-2050

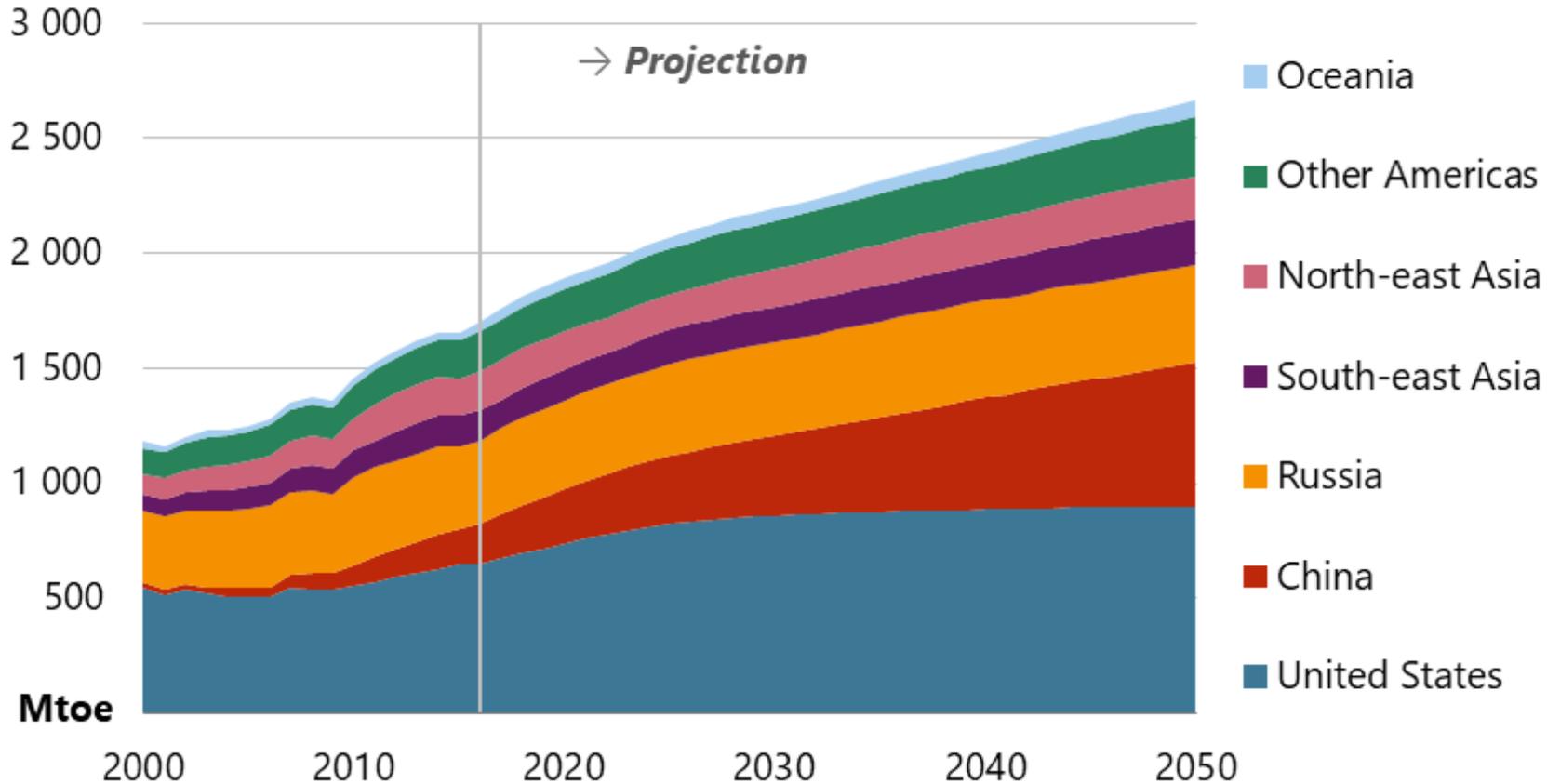


Source: APERC analysis and IEA 2018

Natural gas key consumption is in power generation (41%) followed by buildings (20%) and industry (17%).

Natural gas is the fastest-growing fuel in APEC to 2050

APEC natural gas supply by region, 2000-2050

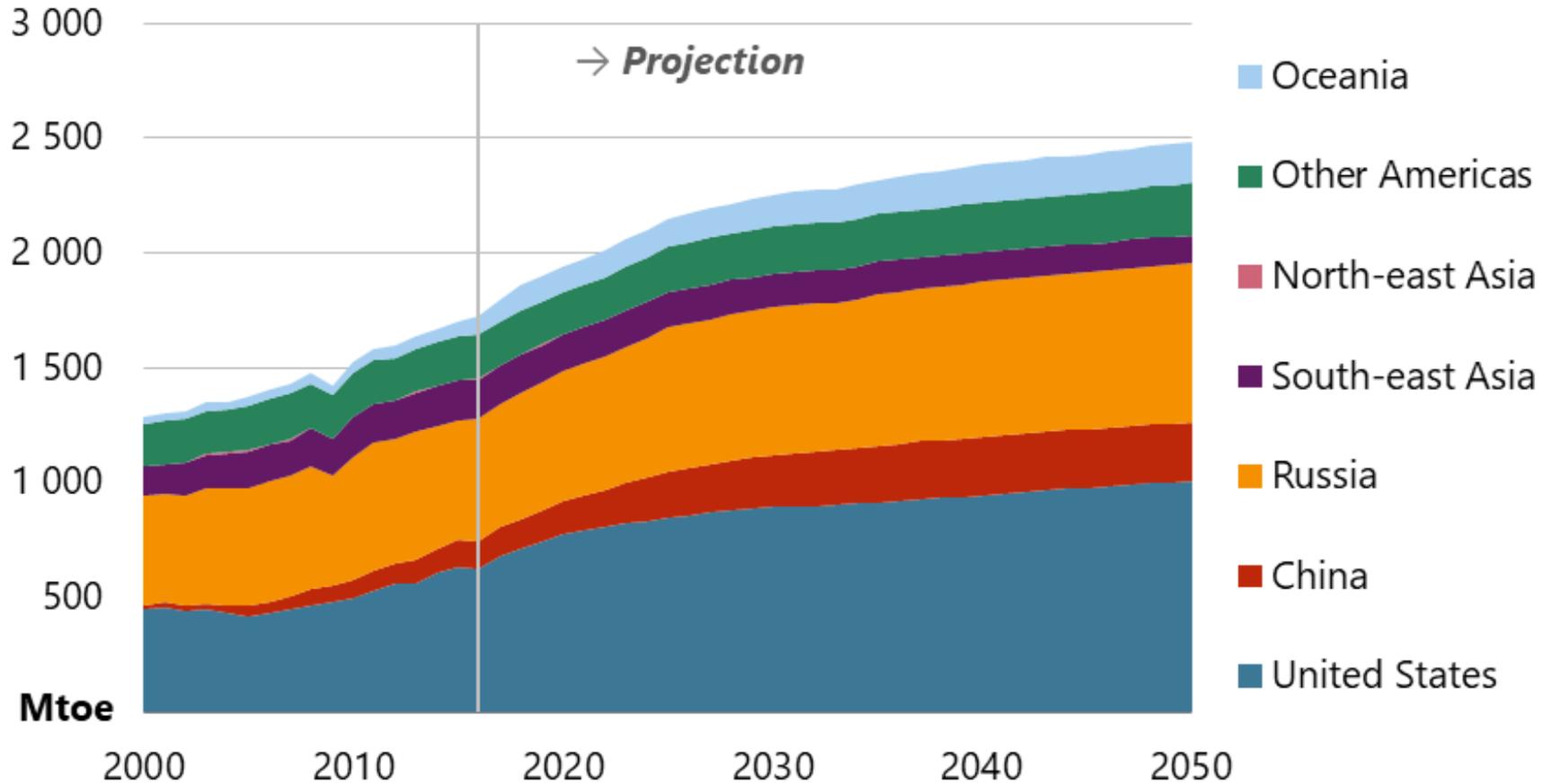


Source: APERC analysis and IEA 2018

Natural gas supply increases by 57% to reach 2,663 Mtoe by 2050 with largest growth observed in China. 70% of natural gas export is piped gas while 30% is LNG.

Natural gas production surpasses oil in 2020 and continues its fast growth to 2050

APEC natural gas production by region, 2000-2050



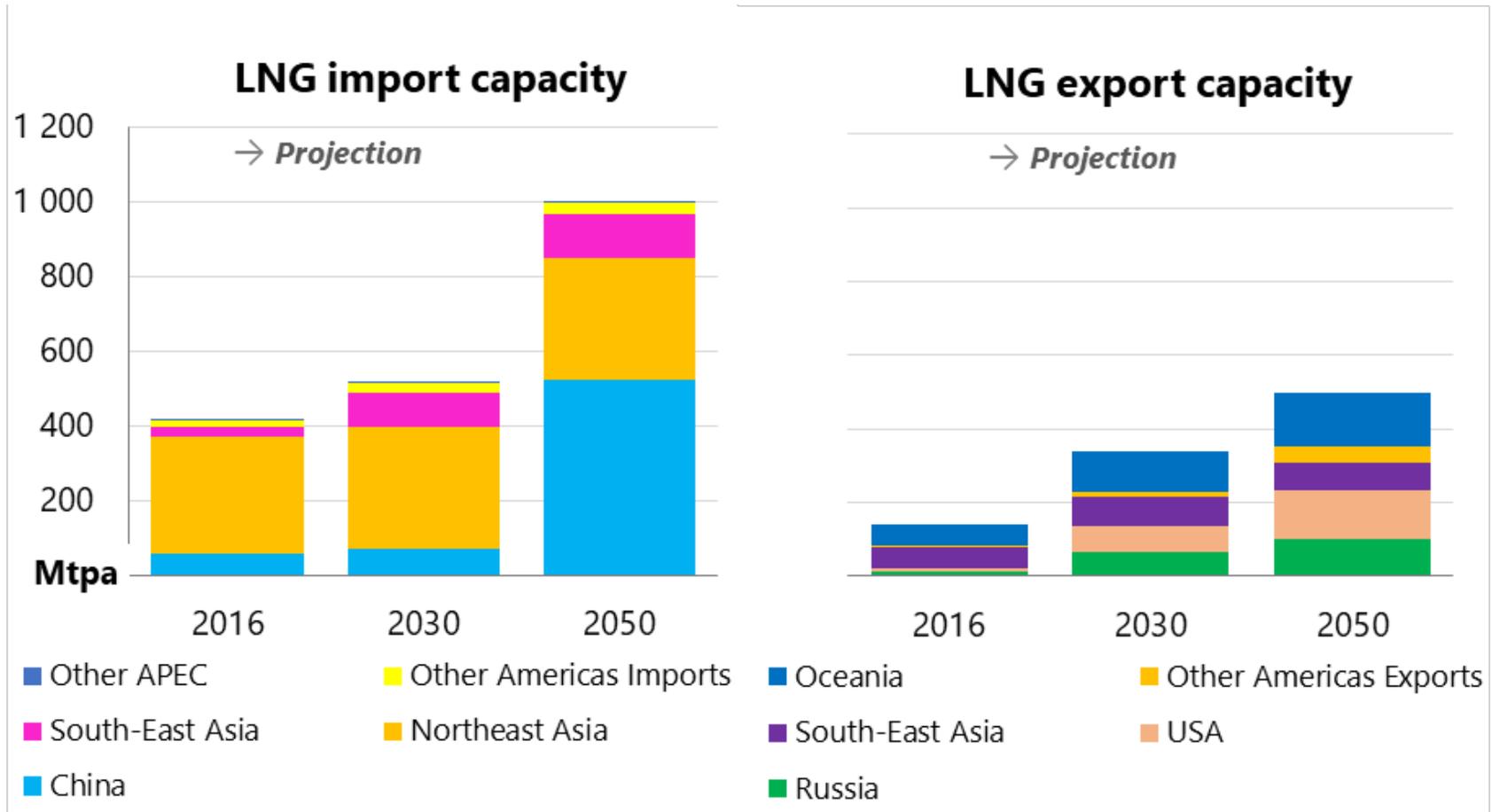
Source: APERC analysis and IEA 2018

Natural gas production increases by 44% to reach 2,485 Mtoe in 2050.

Production from USA, Russia and China makes up nearly 80% of the APEC total.

APEC continues to install LNG import and export capacity towards 2050

APEC LNG regasification and liquefaction capacity by region, 2000-2050



Source: APERC analysis and IEA 2018

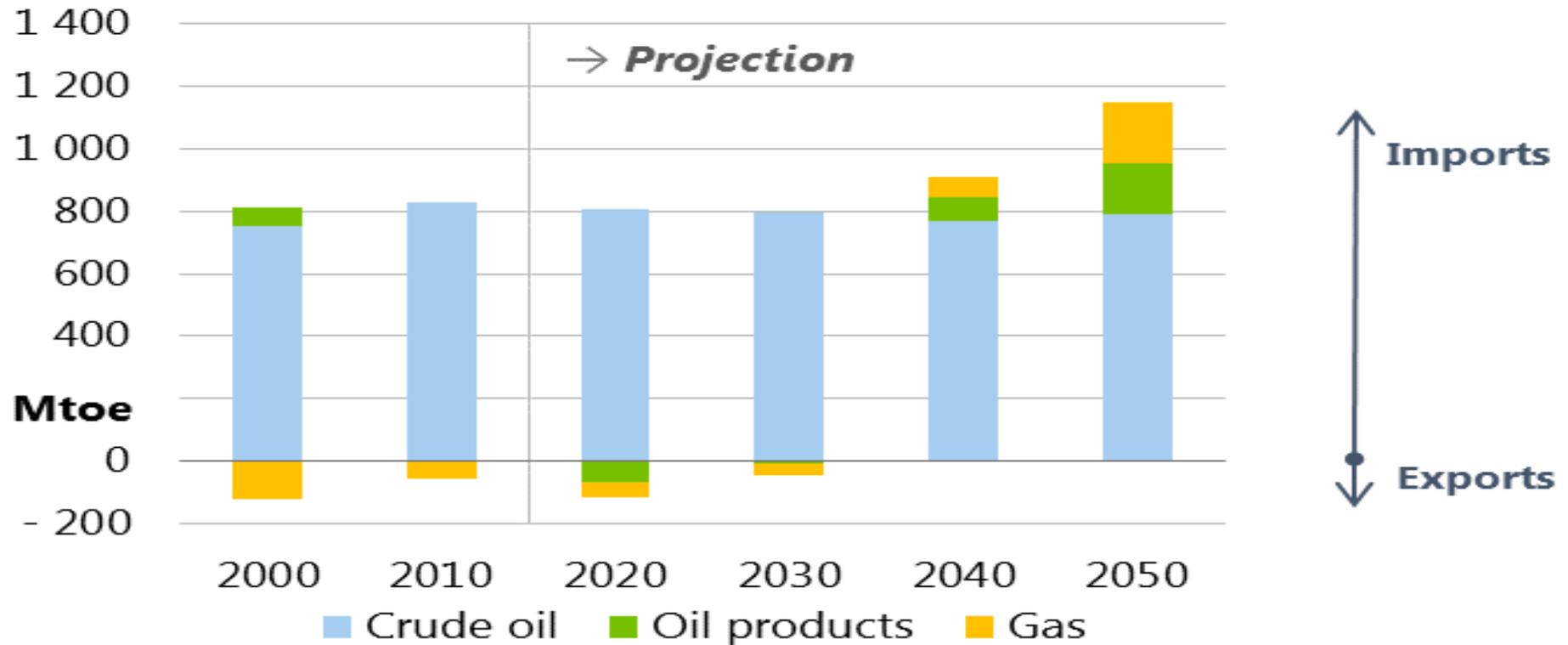
China is projected to significantly install LNG capacity towards 2050.

An aerial composite image showing a city with a complex highway interchange, a large field of solar panels, and a volcanic eruption with lava flows in the background. A blue banner with white text is overlaid across the middle.

Challenge and opportunity in intra-APEC oil and natural gas trade

Opportunity for APEC to develop intra-APEC oil and natural gas trade

APEC net import of crude, oil products and natural gas by region, 2000-50

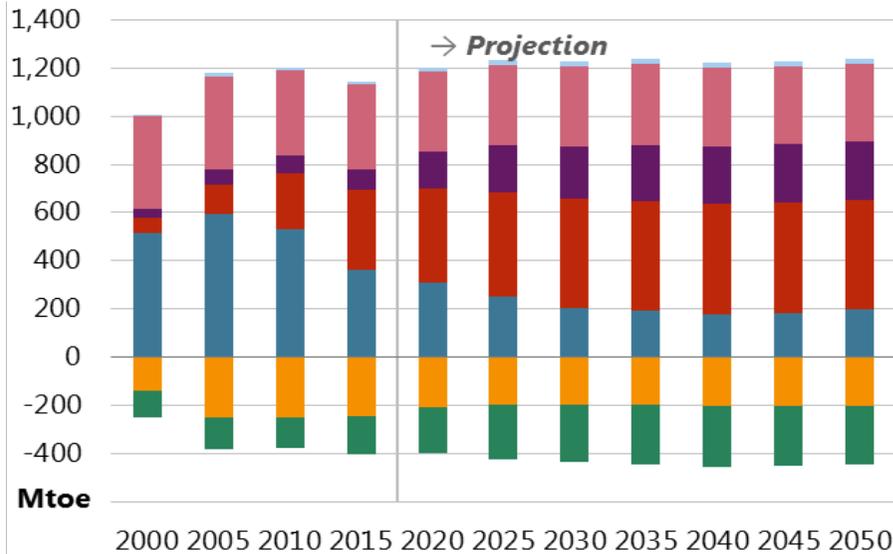


Source: APERC analysis and IEA 2018

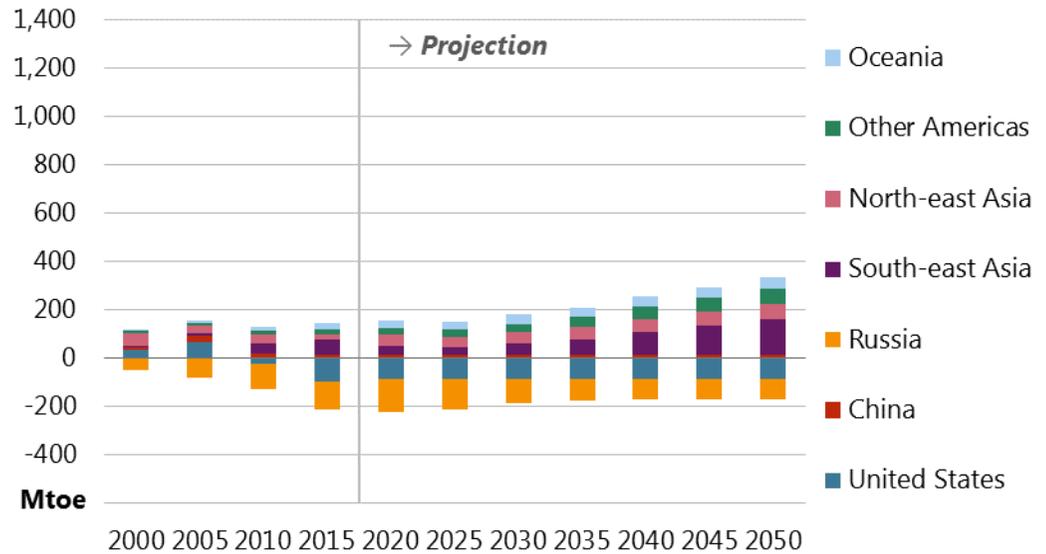
APEC can take advantage of the rise of shale oil and gas supply in the United States to match up with the surge in demand from China and SEA.

APEC net crude oil and products imports by region, 2000-2050

Crude oil



Petroleum products

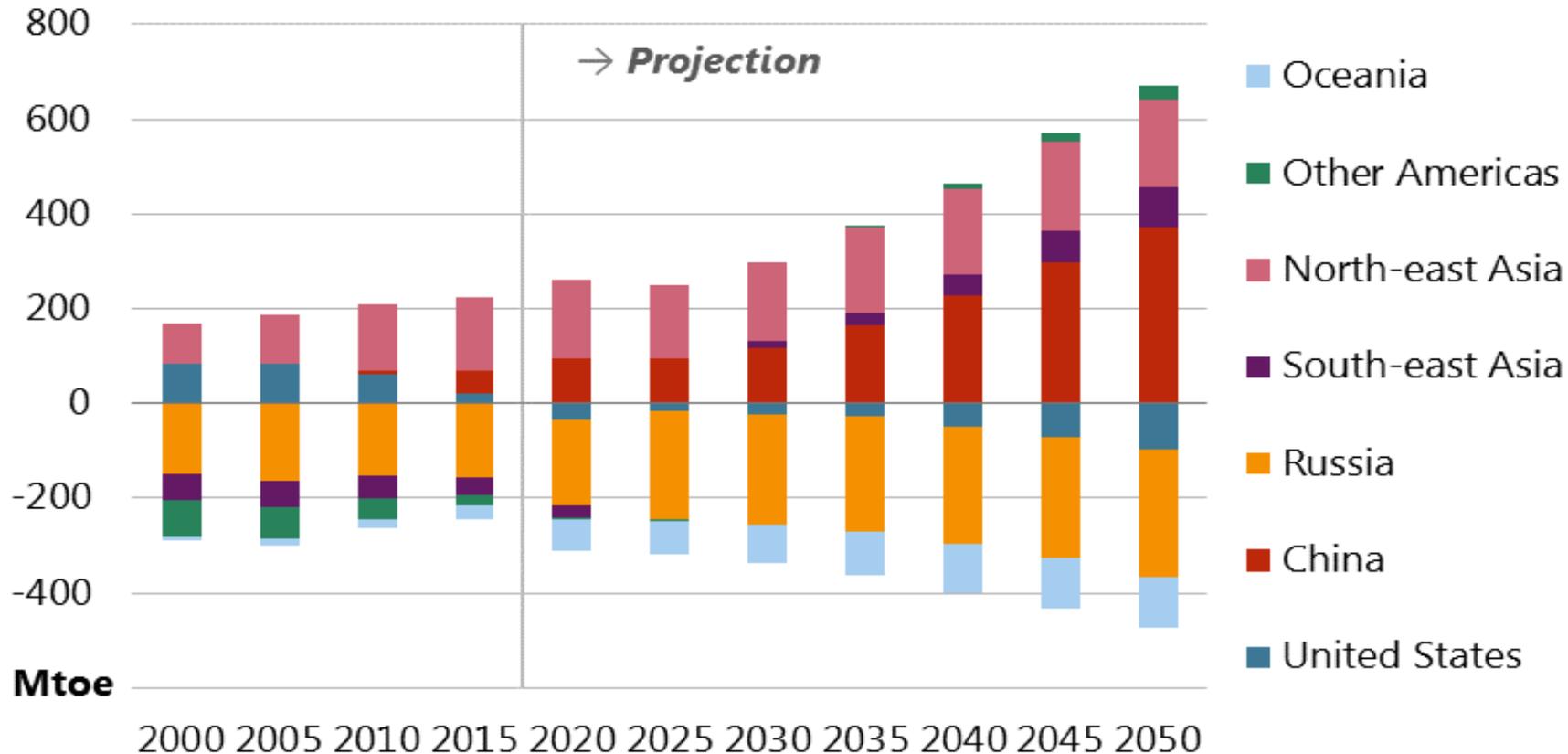


Source: APERC analysis and IEA 2018

**Shale oil in the USA helps to reduce its crude oil imports.
China and SEA import dependence increases to 2050.**

Opportunity for APEC to develop intra-APEC natural gas trade

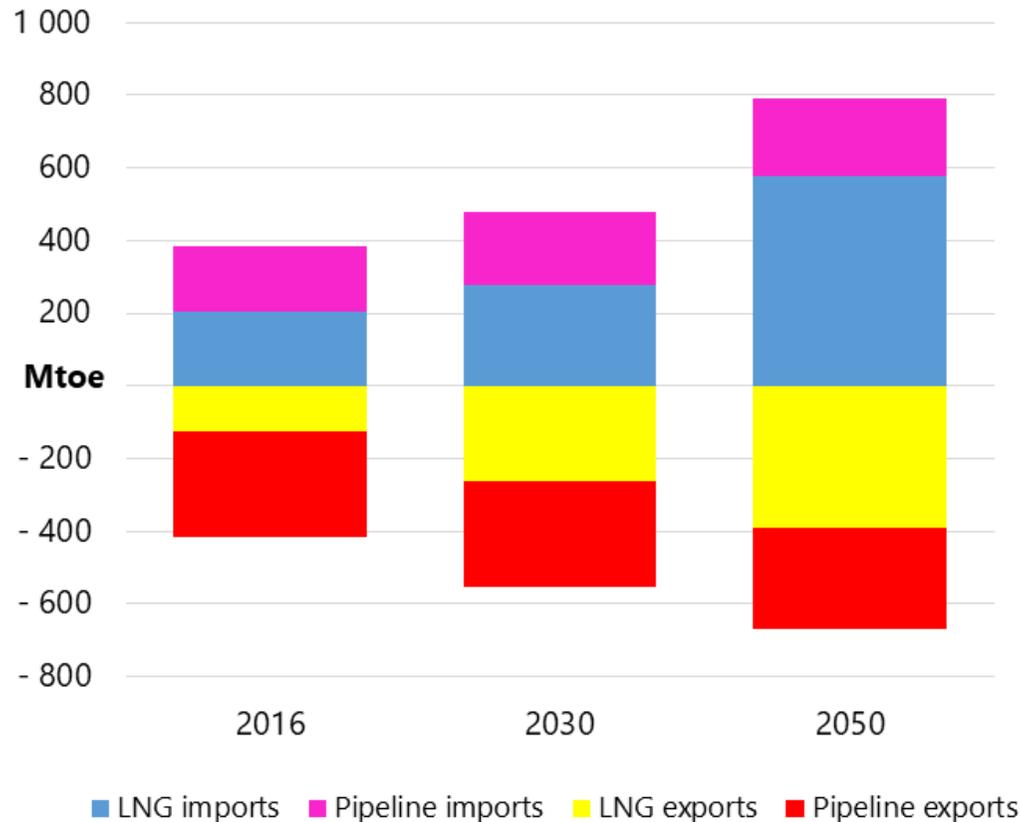
Total primary natural gas supply by region, 2000-2050



Source: APERC analysis and IEA 2018

Natural gas exports grow by 60% while imports double from 2016 to 2050. The projected changes in natural gas demand and supply create significant opportunity to expand intra-APEC trade across all regions.

Total primary natural gas supply by region, 2000-2050



The development of LNG regasification plant and terminal not only provides flexibility, promotes use of natural gas leading to reduction of GHG emissions and improves air quality, but also enhances fuel diversity and energy security.

Source: APERC analysis and IEA 2018



Thank you for your kind attention

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