



APERC Workshop at EWG 55  
Hong Kong, China, 14 May 2018

# 3-4. Fossil Energy Supply

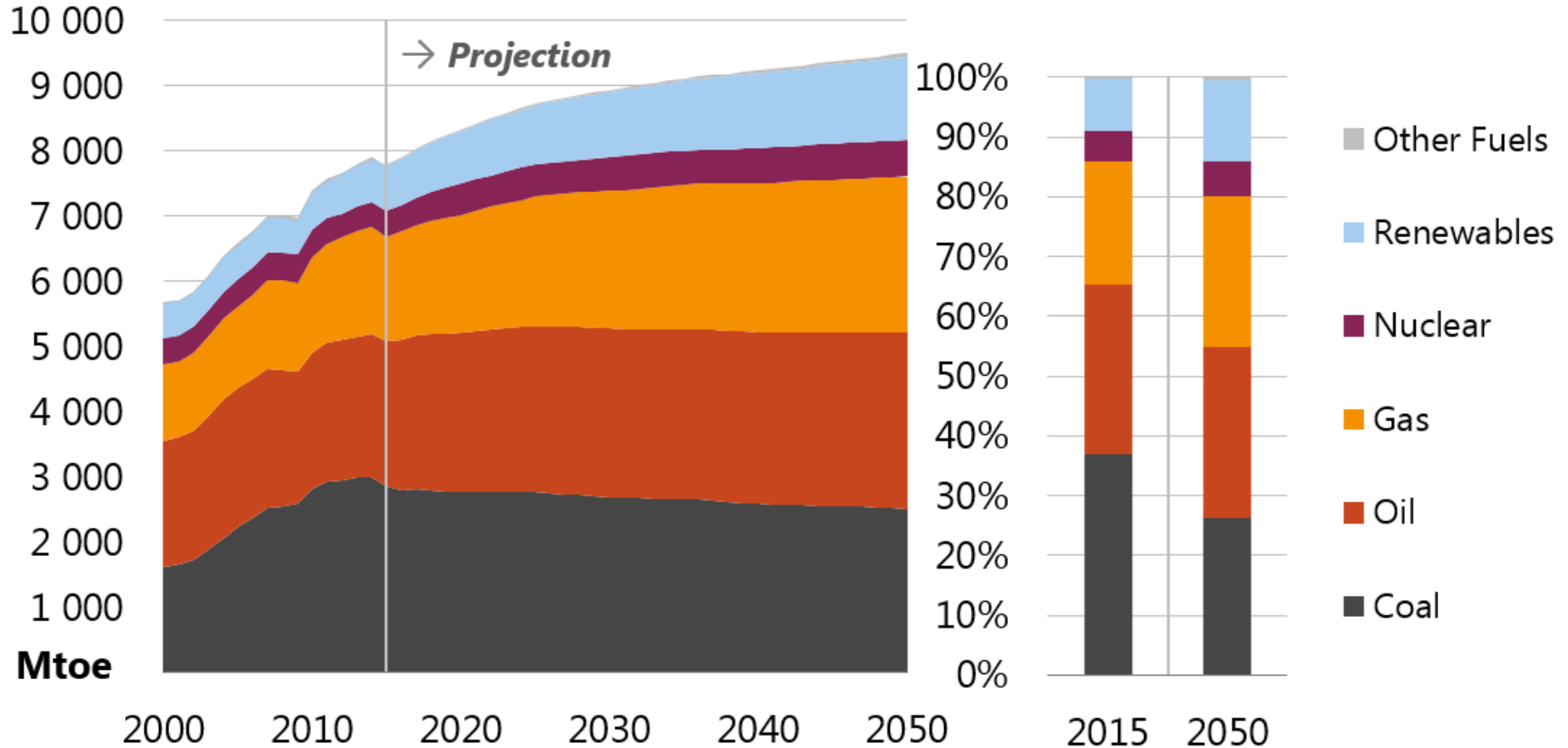
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Research Fellow, APERC



**Asia-Pacific  
Economic Cooperation**

# Fossil fuels continue to dominate fuel mix in 2050

## APEC total primary energy supply, 2015-2050

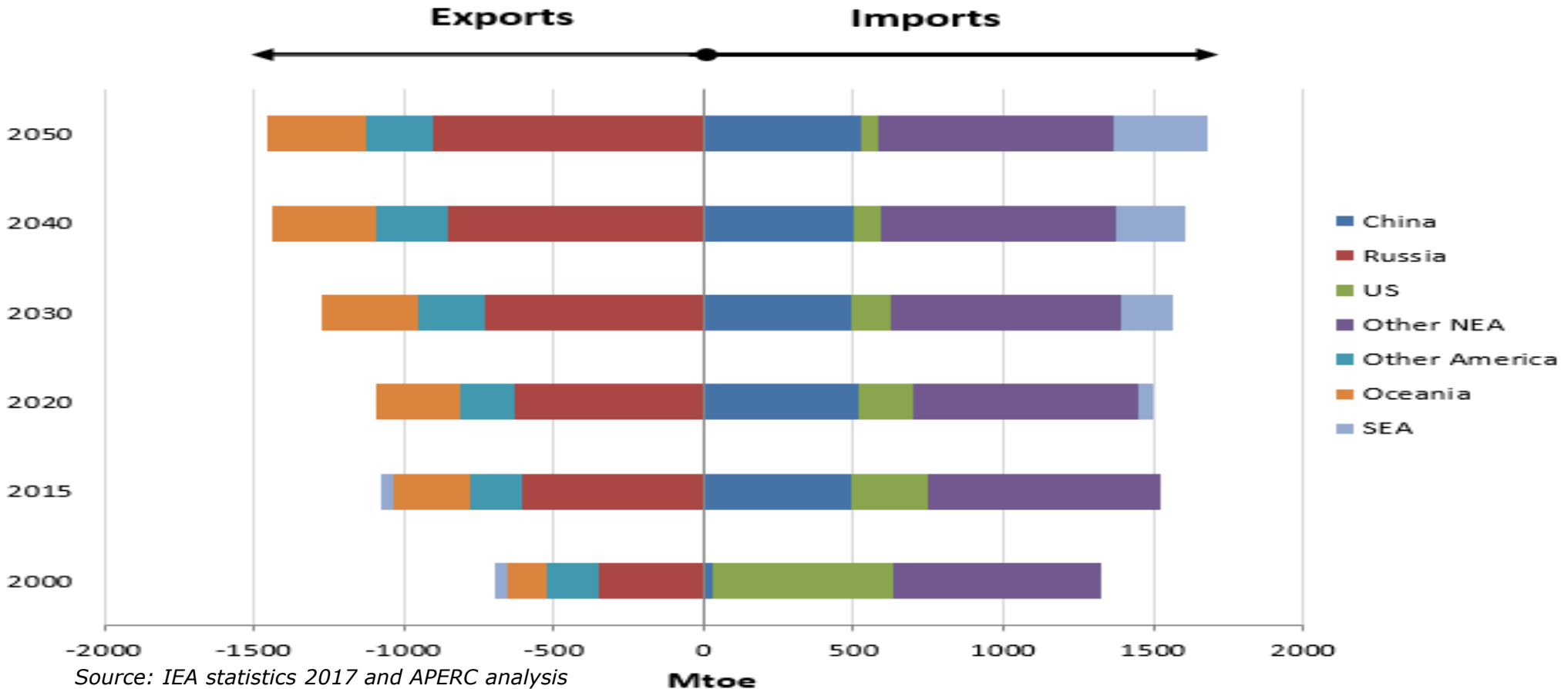


Source: IEA statistics 2017 and APERC analysis

**APEC energy supply is projected to rise 23% from 2015 to 2050 (9,496 Mtoe [2050] vs 7,782 Mtoe [2015]).**

# Net energy supply gap continues to widen

## Energy supply gap by regional grouping, 2000-2050



Source: IEA statistics 2017 and APERC analysis

**Five APEC members become net energy exporters while USA cuts its imports in half by 2050 in the BAU Scenario.**

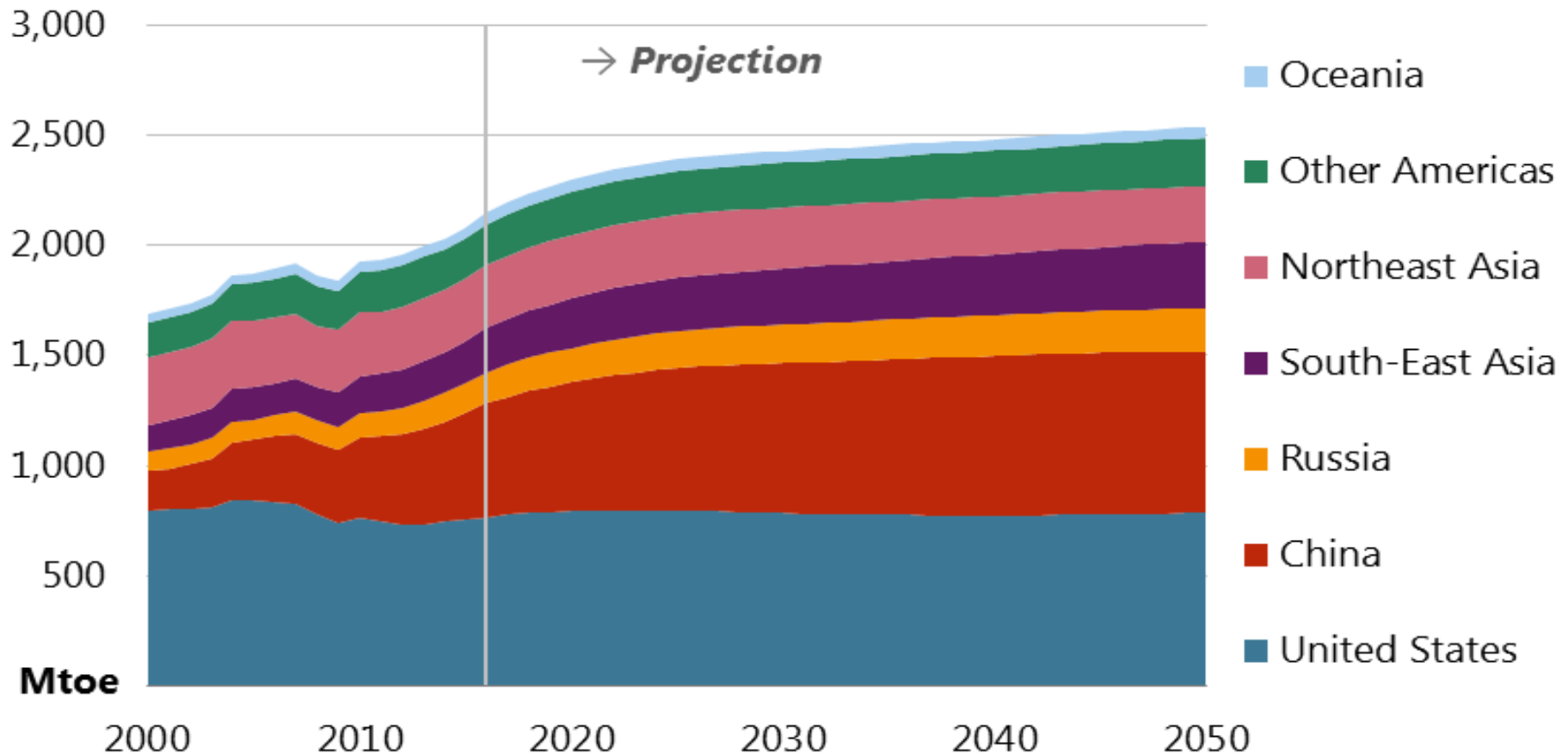




# Fossil supply

# Increasing oil demand in APEC is driven by China and SEA

## Oil demand in China, USA and other APEC, 2000-2050

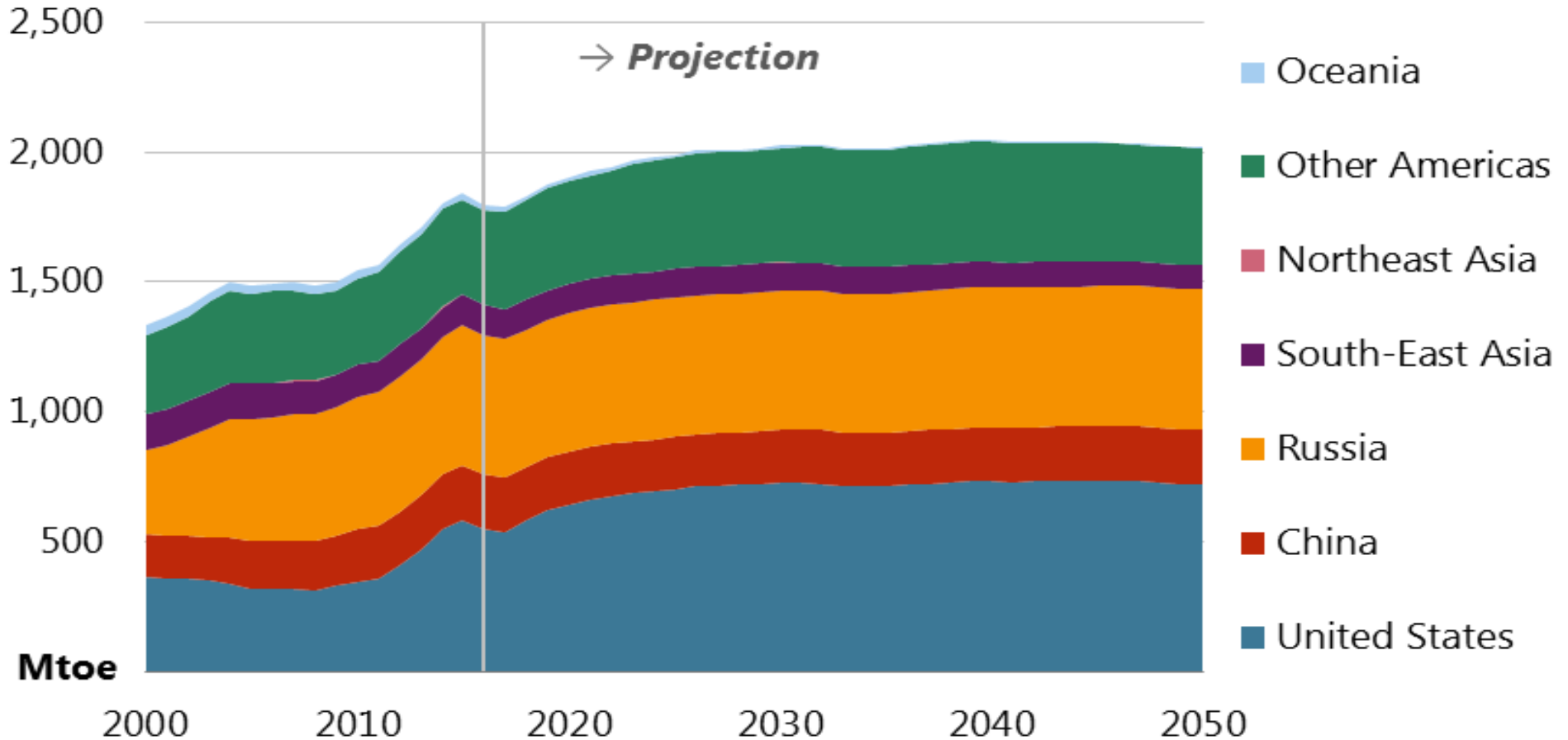


Source: IEA statistics 2017 and APERC analysis

**Projected oil demand growth in China reaches AAGR 1.2% towards 2050.**

# 76% of APEC crude production in 2050 is from the USA, Russia, Canada, China and Mexico

## APEC crude oil production by region, 2000-2050



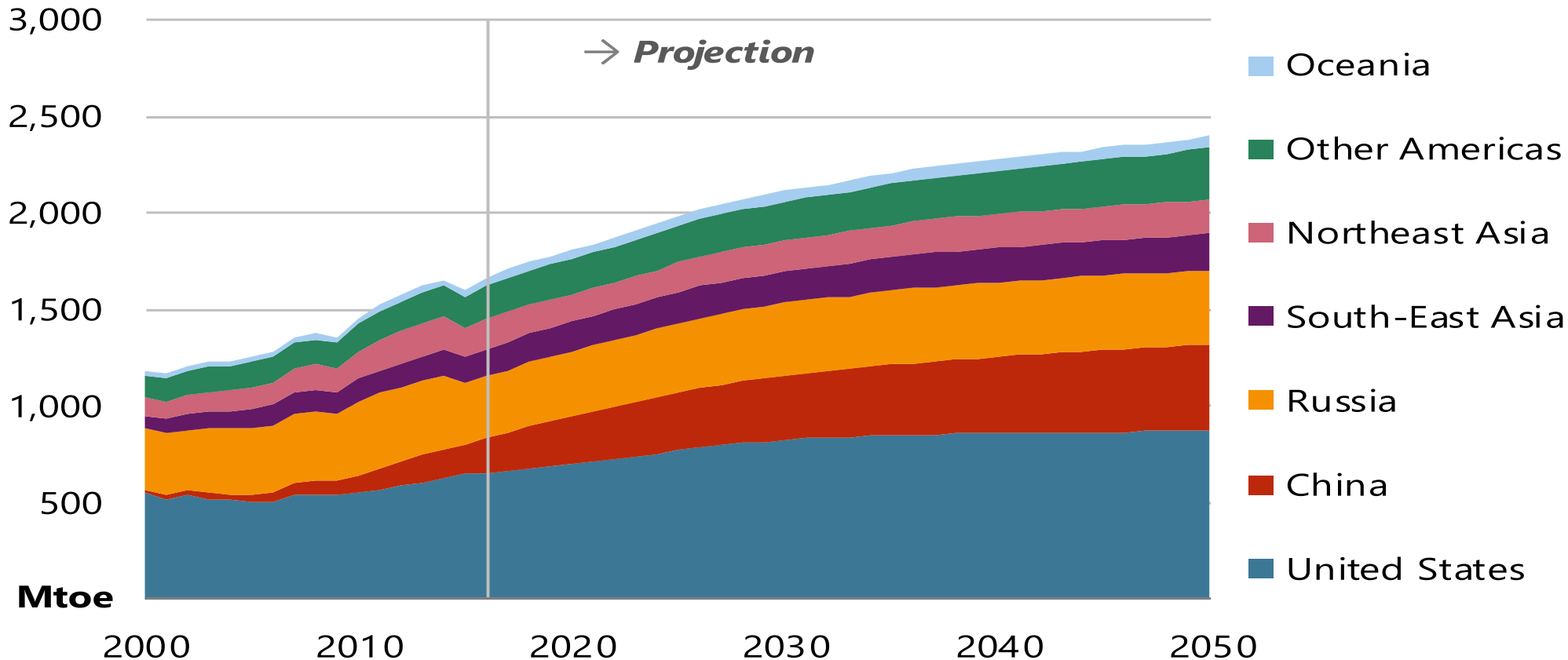
Source: IEA statistics 2017 and APERC analysis.

**APEC production rises 10% from 2015 to 2050.**

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

# Natural gas supply sees strong growth to 2050

## APEC natural gas supply by region, 2000-2050

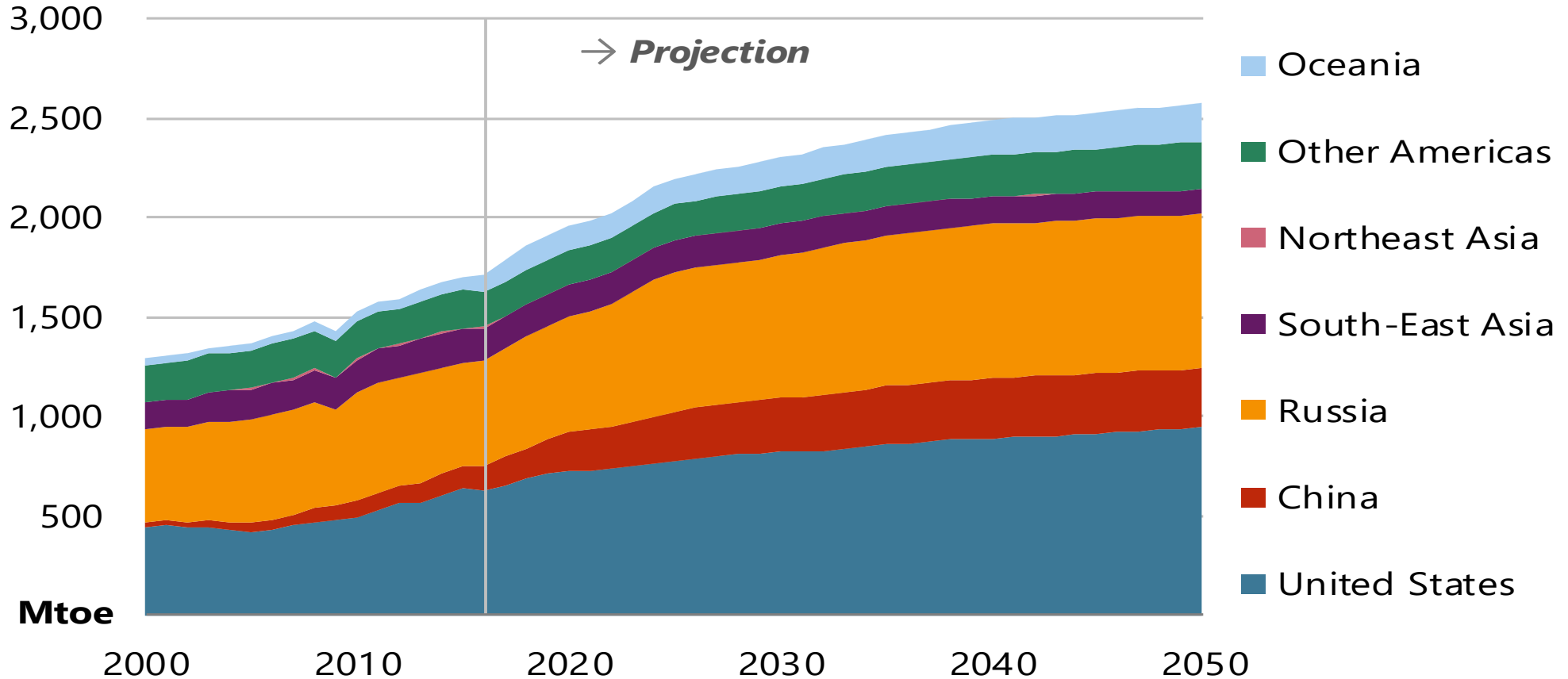


Source: IEA statistics 2017 and APERC analysis.

**Natural gas supply increases by 50% to reach 2,400 Mtoe by 2050 with largest growth observed in China. Key consumption is in power generation (42%), followed by buildings (17%) and industry (10%).**

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

## APEC natural gas production by region, 2000-2050



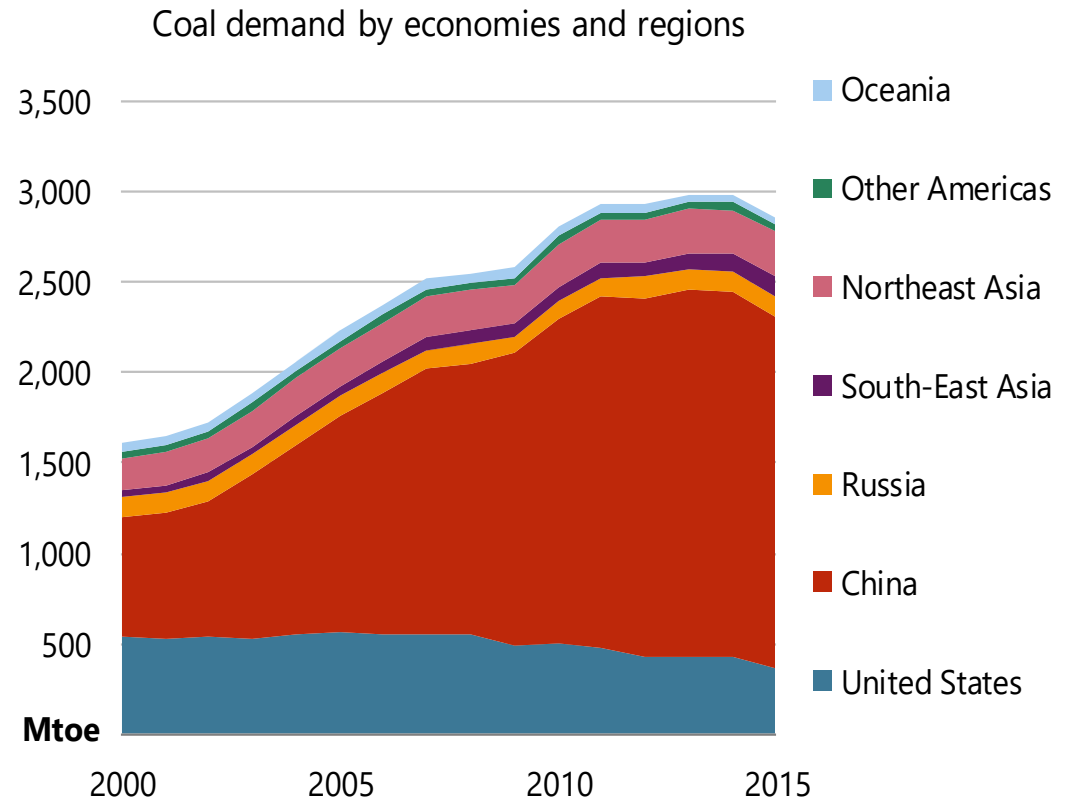
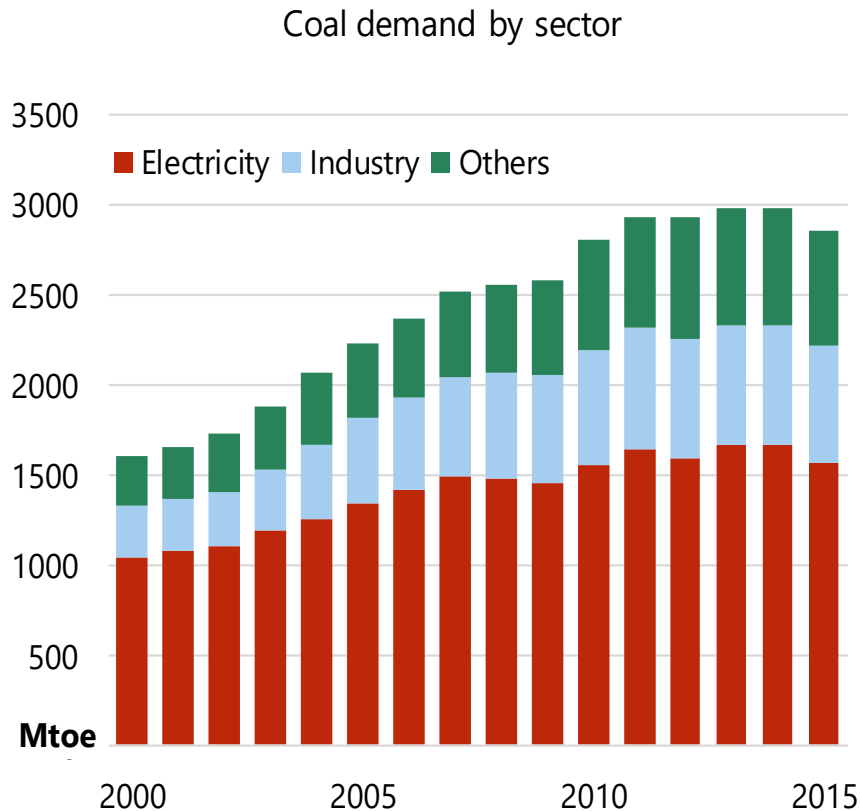
Source: IEA statistics 2017 and APERC analysis.

**Natural gas production increases by 51% to reach 2,579 Mtoe in 2050. Production from USA, Russia and China makes up nearly 80% of the APEC total.**



# APEC consumes 75% of global coal because of its abundance and low cost

## APEC sectoral and regional coal demand, 2000-2015



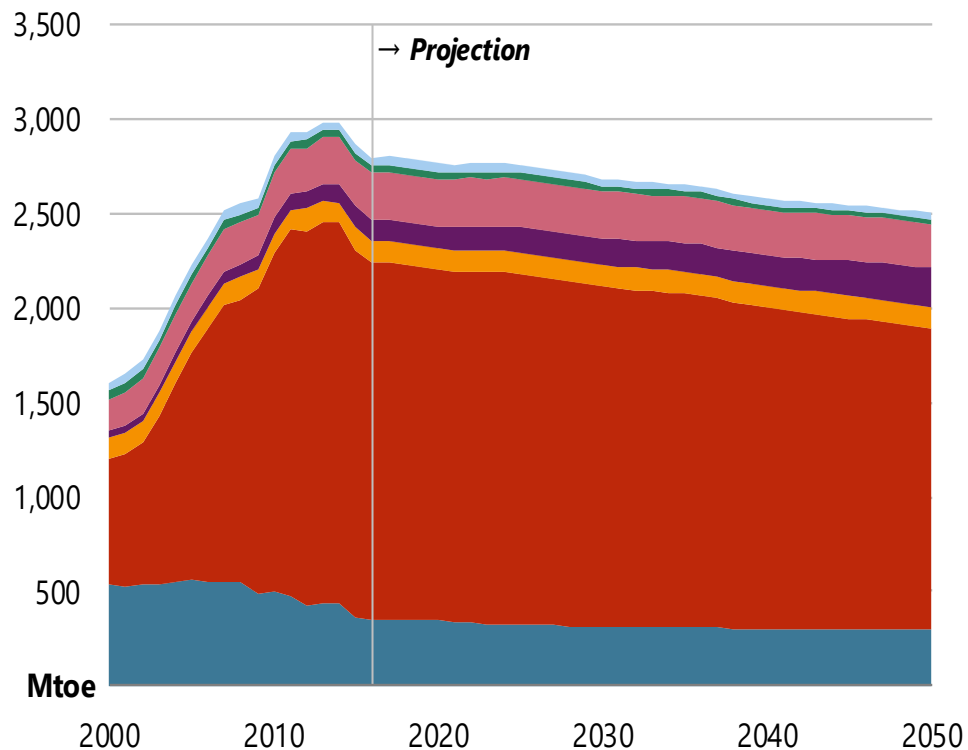
Source: IEA statistics 2017 and APERC analysis.

**APEC coal demand increased by 3.9% annually from 2000 to 2015. Power and industry were largest consumers pushing coal to peak in 2013.**

# APEC coal supply declines from 2015 to 2050

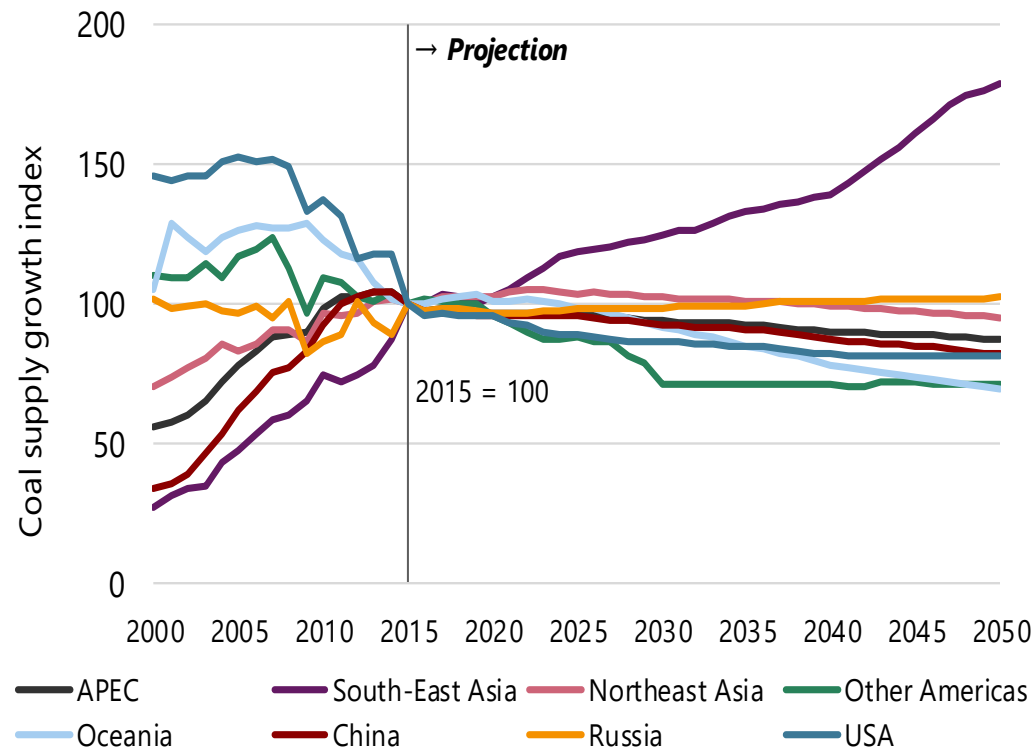
## Coal supply by region and growth index, 2000-2050

Coal supply in APEC



Source: IEA statistics 2017 and APERC analysis.

Coal supply growth

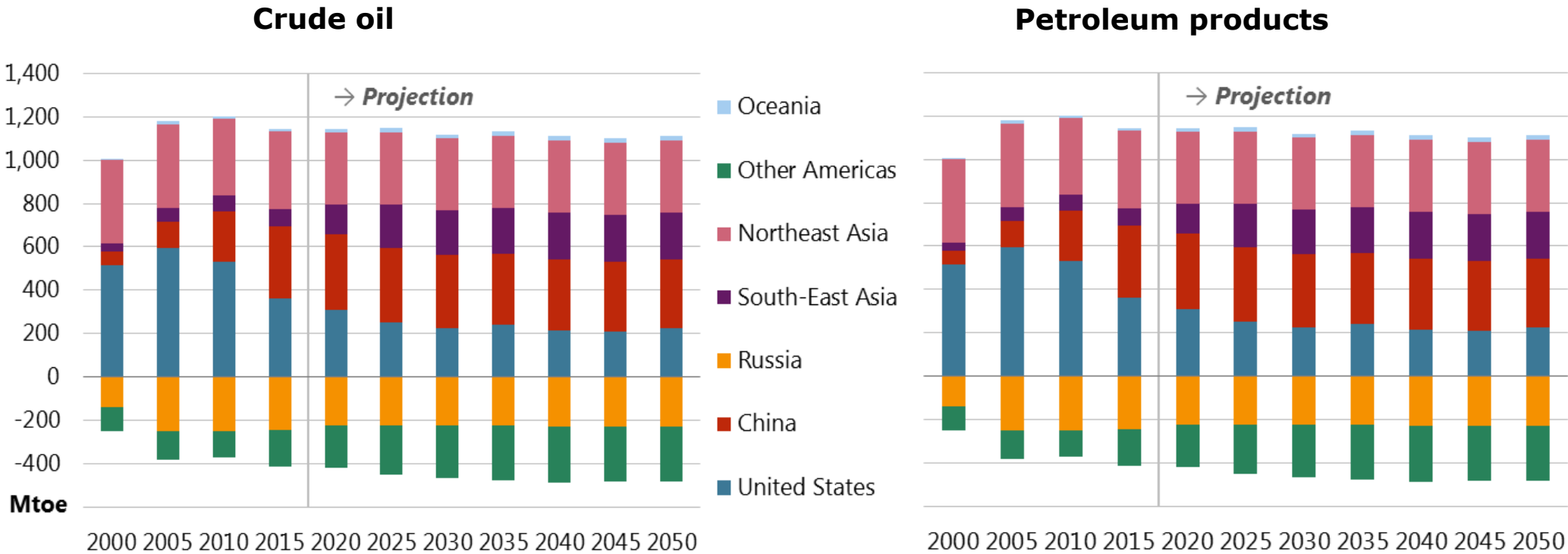


**APEC coal demand passed its peak and is projected to decrease in the BAU Scenario. Increased natural gas availability and declining costs for renewables are key drivers.**

An aerial composite image showing a city with a complex highway interchange, a large field of solar panels, and a volcanic eruption in the background. The scene is overlaid with a blue banner containing the title text.

# Challenge and opportunity in intra-APEC energy trade

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



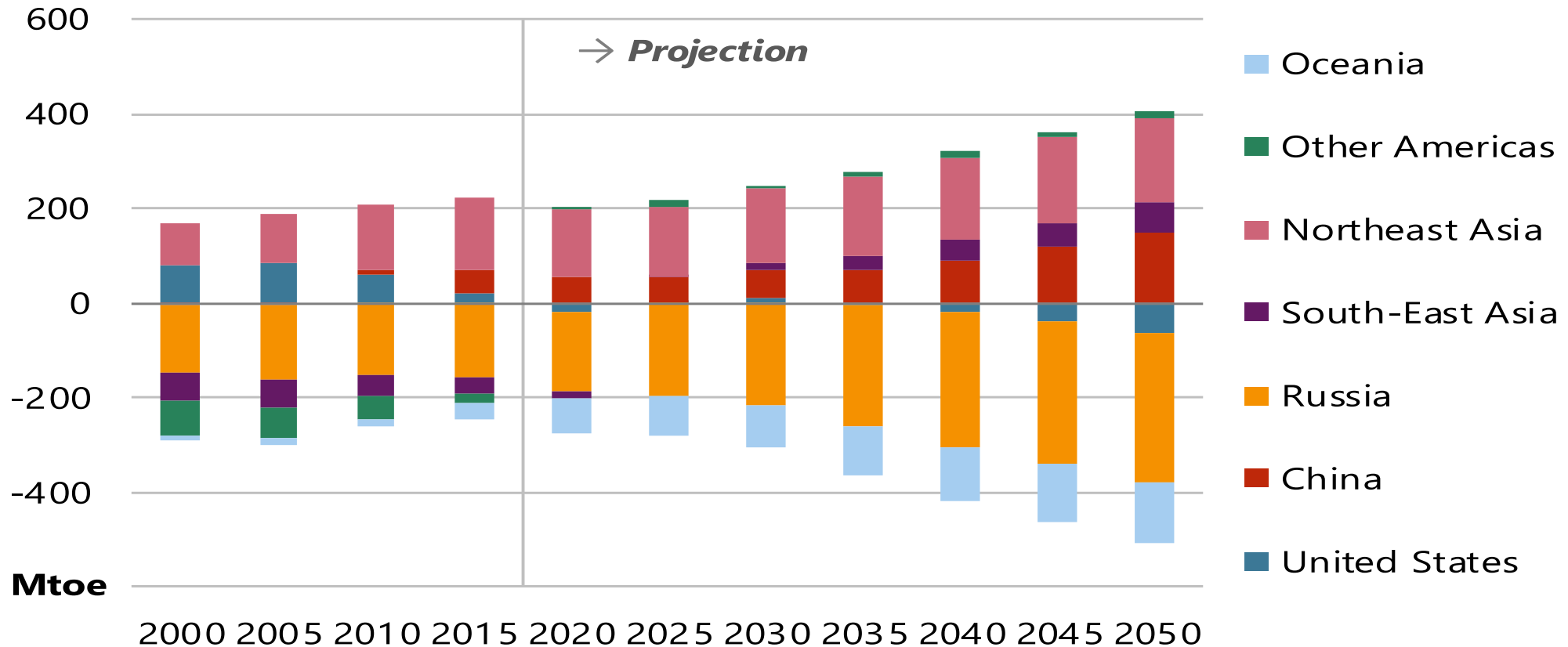
Source: IEA statistics 2017 and APERC analysis.

**Shale oil in 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

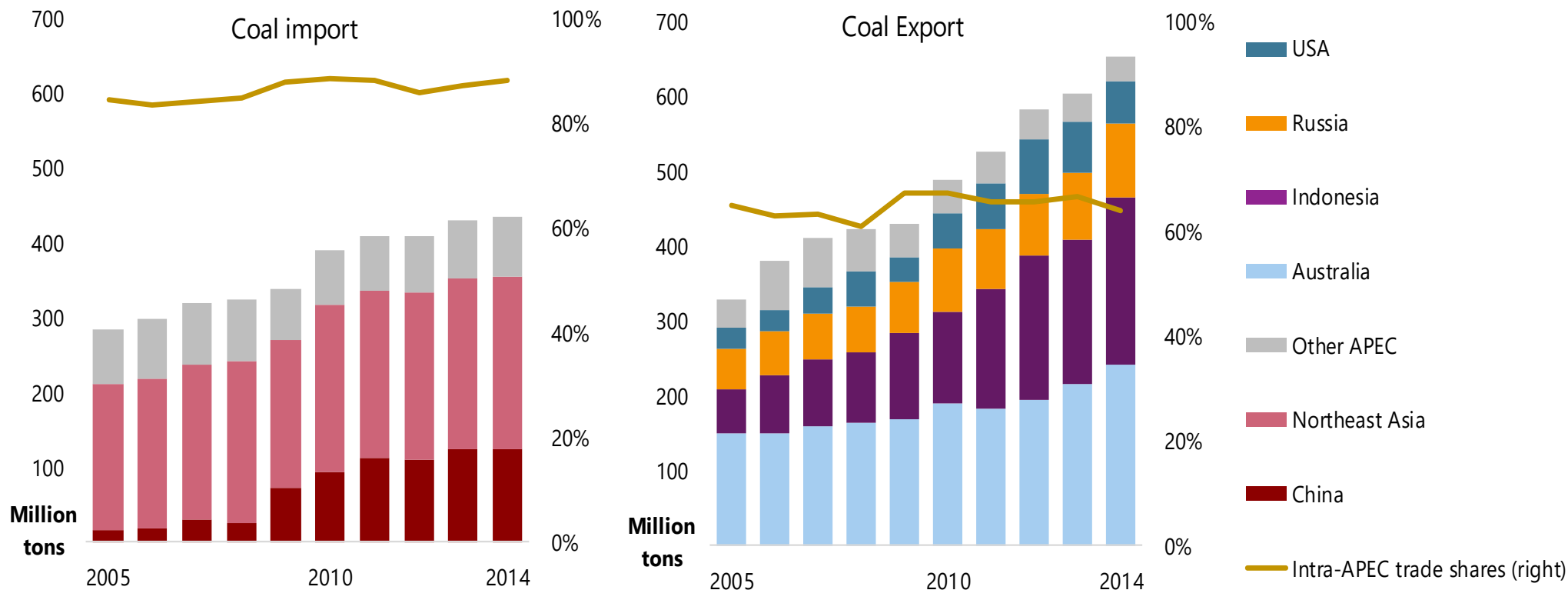


Source: IEA statistics 2017 and APERC analysis.

**Natural gas exports grow by 70% while imports grow by 50% from 2015 to 2050.**

# Opportunity for APEC to further develop intra-APEC coal trade

## Intra-APEC coal imports and exports by region, 2005-2014



Source: IEA statistics 2017 and APERC analysis.

***Intra-APEC coal trade accounts for 88% of total coal imports and 64% of total coal exports.***



**Thank you for your kind attention**

<http://aperc.ieej.or.jp/>