Asia-Pacific
Economic Cooperation

2018/EWG56/028
Agenda Item: 9c

Asia Pacific Energy Research Centre Coal Report 2018

Purpose: Information
Submitted by: APERC

APEC 2018
PAPUA NEW
GUINEA

56th Energy Working Group Meeting
Lima, Peru
6-7 November 2018

The 56th Meeting of APEC Energy Working Group (EWG)
Lima, Peru
5-7 November, 2018

9.c. APERC Coal Report 2018

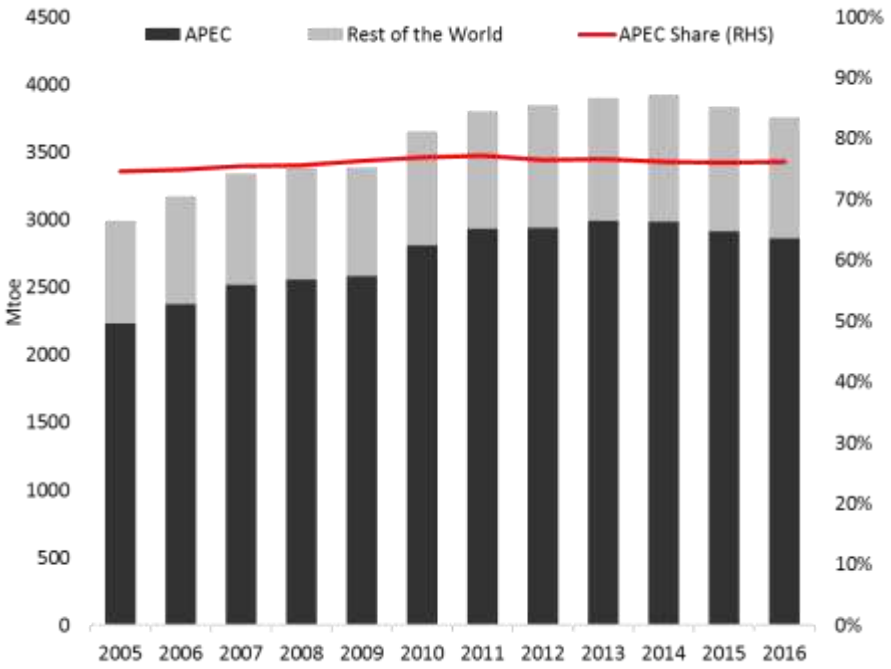
Izham Shukor
Researcher, APERC

APERC
Asia Pacific Energy Research Centre

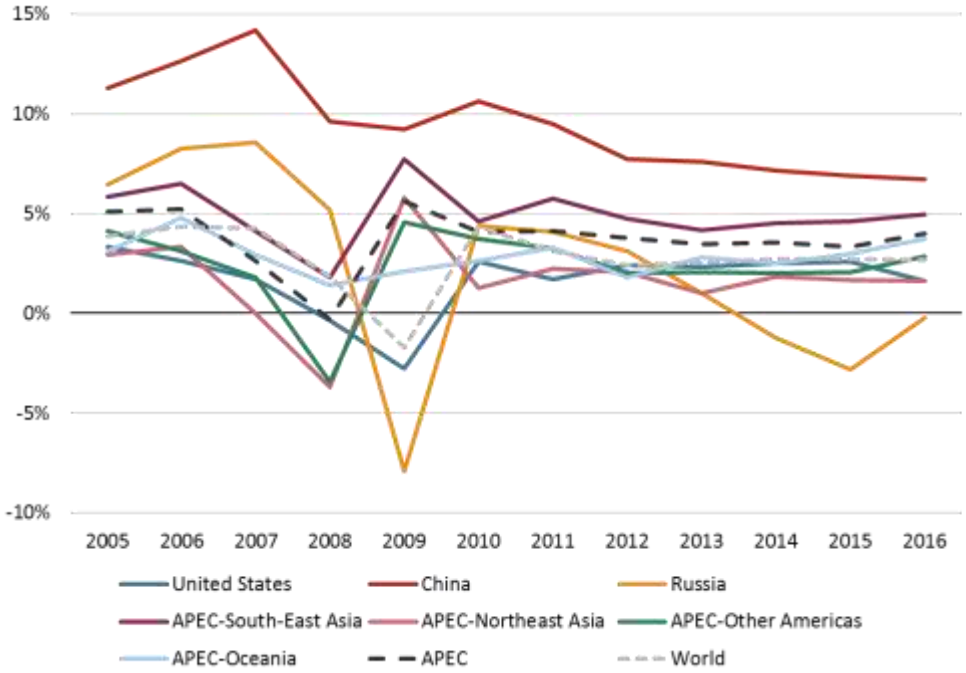
APEC
Asia-Pacific Economic Cooperation

Global coal consumption and economic growth

APEC and global coal consumption, 2005-2016



GDP growth in APEC sub-regions and world, 2005-16



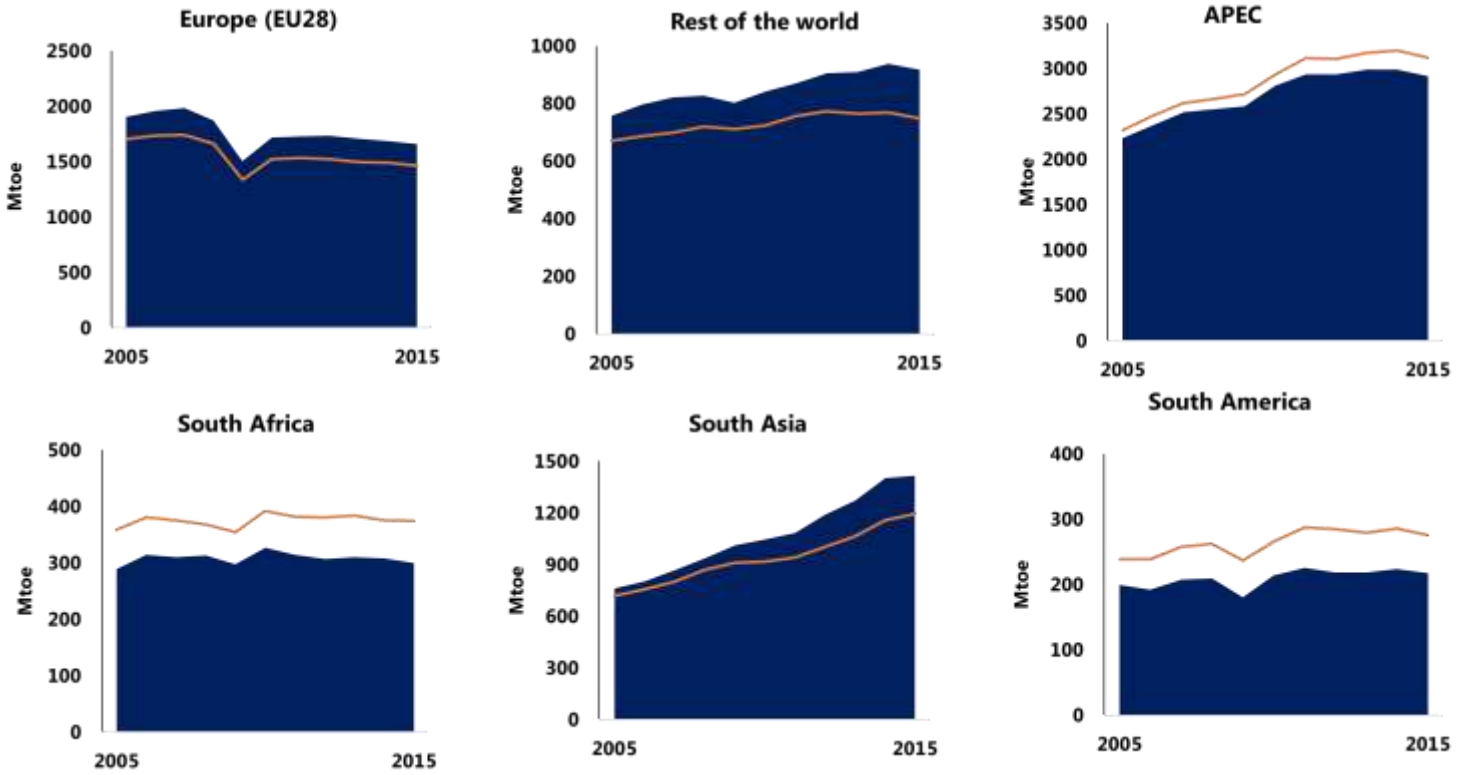
Source: IEA (2018) and WB (2017)

- *APEC coal demand increased by 28% from 2005 to 2016.*
- *Despite the global economic crisis in 2008-09, coal demand increased until 2014.*

Note: IEA Energy Statistics lists 20 out of 21 APEC members. The only APEC member that is not listed is Papua New Guinea which, based on ESTO data, does not consume any coal.

Coal consumption and production by region (2016)

Different trends can be seen among regions around the world

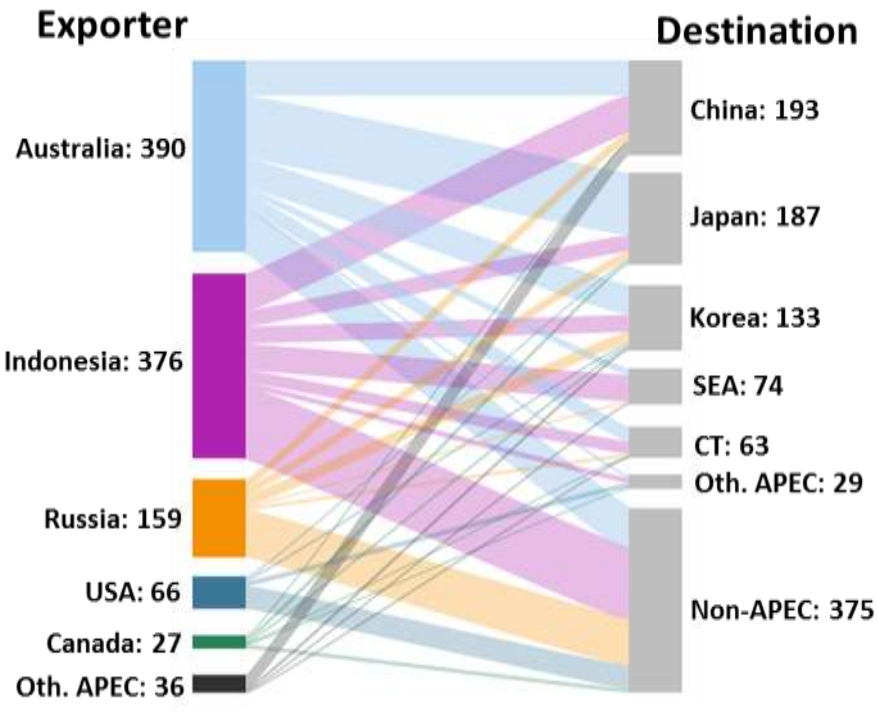


Source: BP (2017).

- *Other than APEC economies, South Asia showed a strong coal demand (doubled 2005 level).*
- *Europe's coal consumption declined by nearly 20% from 2005 level.*

APEC coal trade flow 2015

APEC members are among major coal importers and exporters.

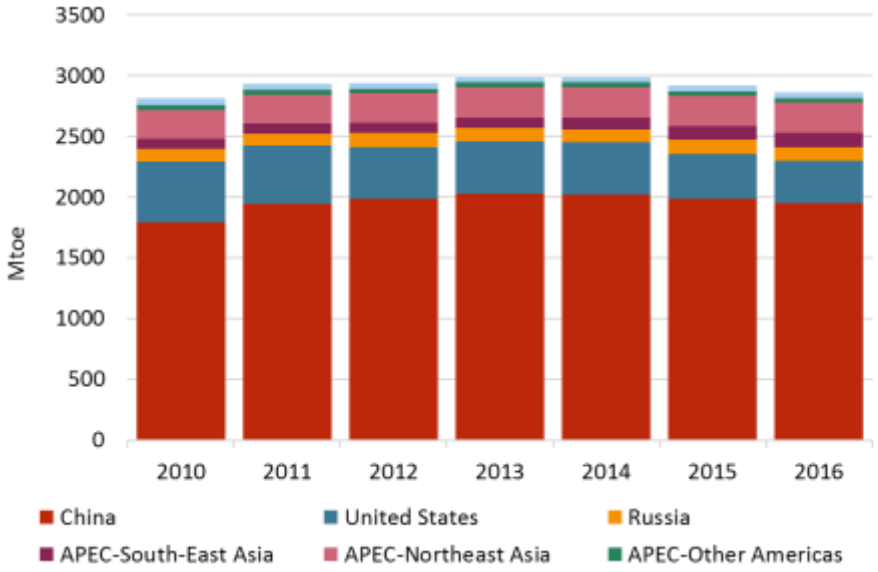


Source: IEA (2017), UN Comtrade and APERC analysis.

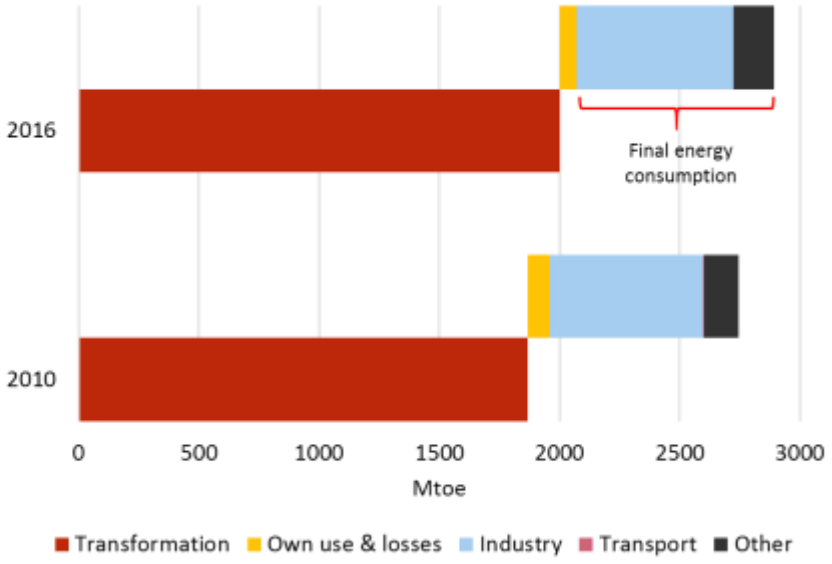
- *Nearly 90% of APEC's coal imports were sourced within the APEC region.*
- *Indonesia and Australia were world's largest coal exporters in 2016.*

APEC coal demand

Coal demand in APEC, 2010-16



Coal demand by sector, 2010 and 2016



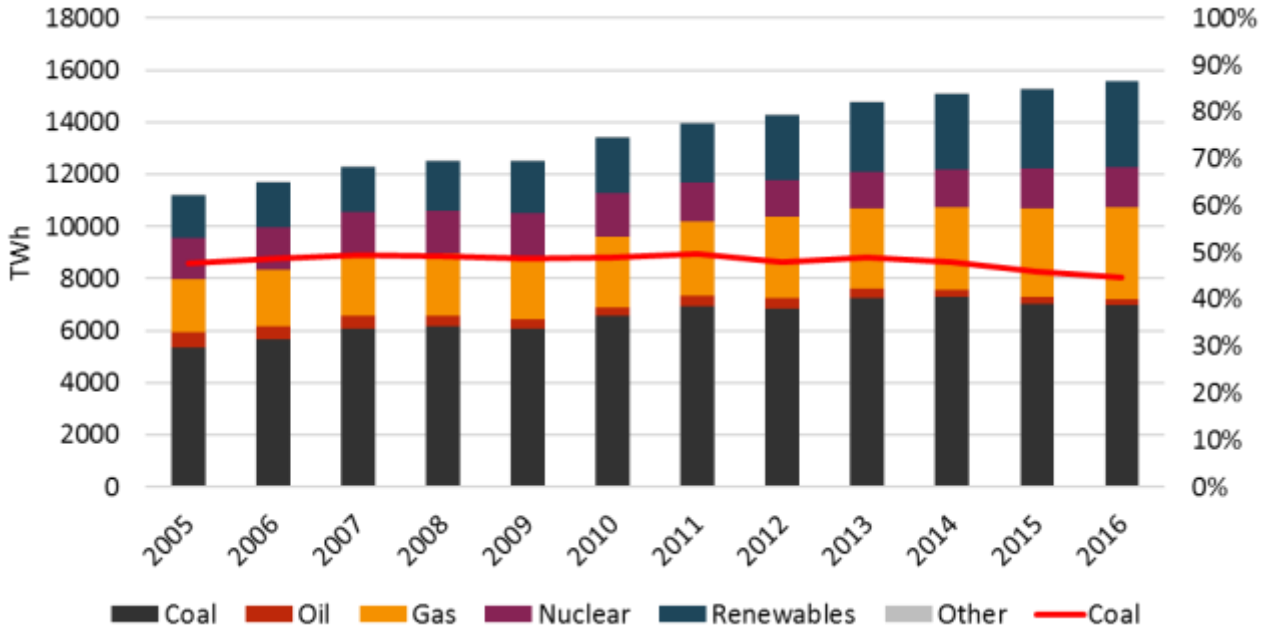
Source (APERC, 2019).

- *In 2016, China accounted for two-thirds of total APEC coal demand, doubled 2005 levels.*
- *South East Asia has been the other major contributor to increased coal demand in APEC.*
- *US coal consumption declined by nearly 40% since 2005.*

Note: APEC-South East Asia: Brunei Darussalam; Indonesia; Malaysia; the Philippines; Singapore, Thailand and Viet Nam. APEC – Northeast Asia: Japan, Korea and Chinese Taipei, APEC other Americas: Canada, Chile, Mexico and Peru

Coal demand in power and heat sector

Generation mix in APEC and coal share, 2005-16.

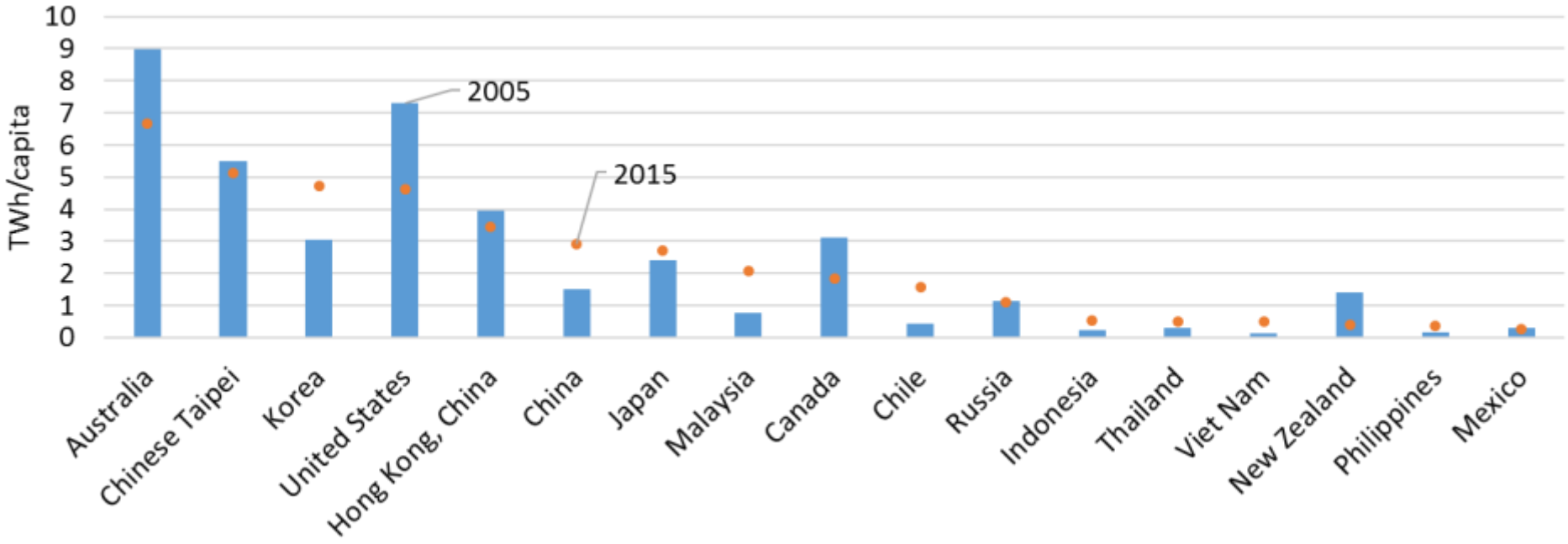


Source (APERC, 2019).

- *Coal share in power mix barely moved for the past 15 years : 48% - 50%. However, in 2016, coal reached only 45%.*
- *Renewables and natural gas becoming fuels of choice in many economies.*

Coal per-capita increased in many developing economies

Coal per-capita electricity demand, 2005 and 2015.



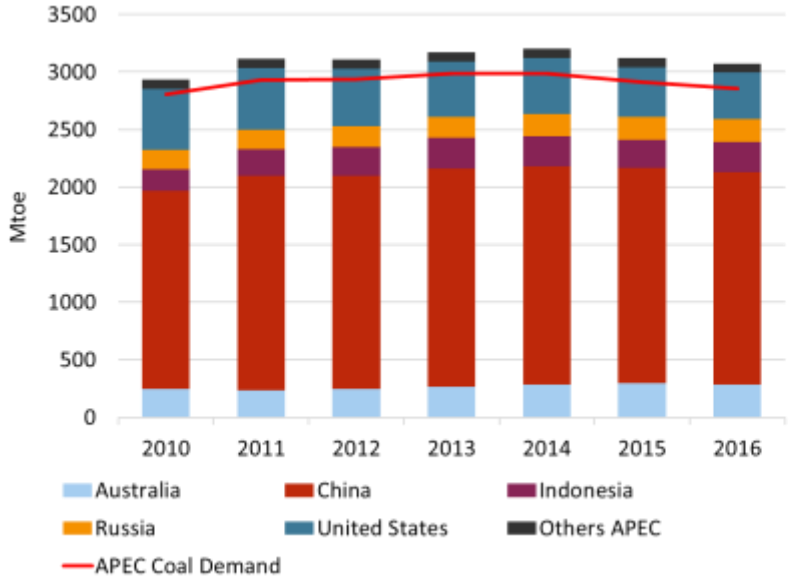
Source (APERC, 2019).

- *Per-capita coal demand declined in eight APEC economies - Australia, Canada, Chinese Taipei, Hong Kong, China, Mexico, New Zealand, Russia and the USA.*
- *Low natural gas prices, lower electricity demand, and environmental regulations contributed to lower coal demand.*

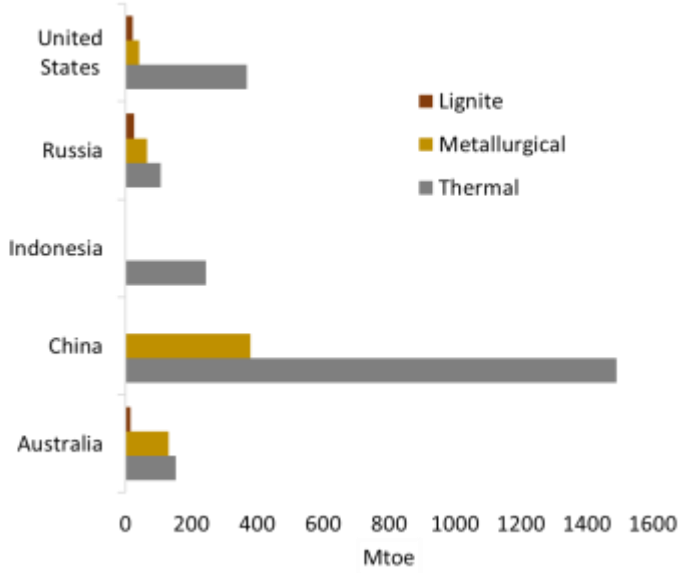
APEC total coal production

APEC total coal production growth was almost flat post-2011

Coal production by economy, 2005-16



Coal production by type, 2015

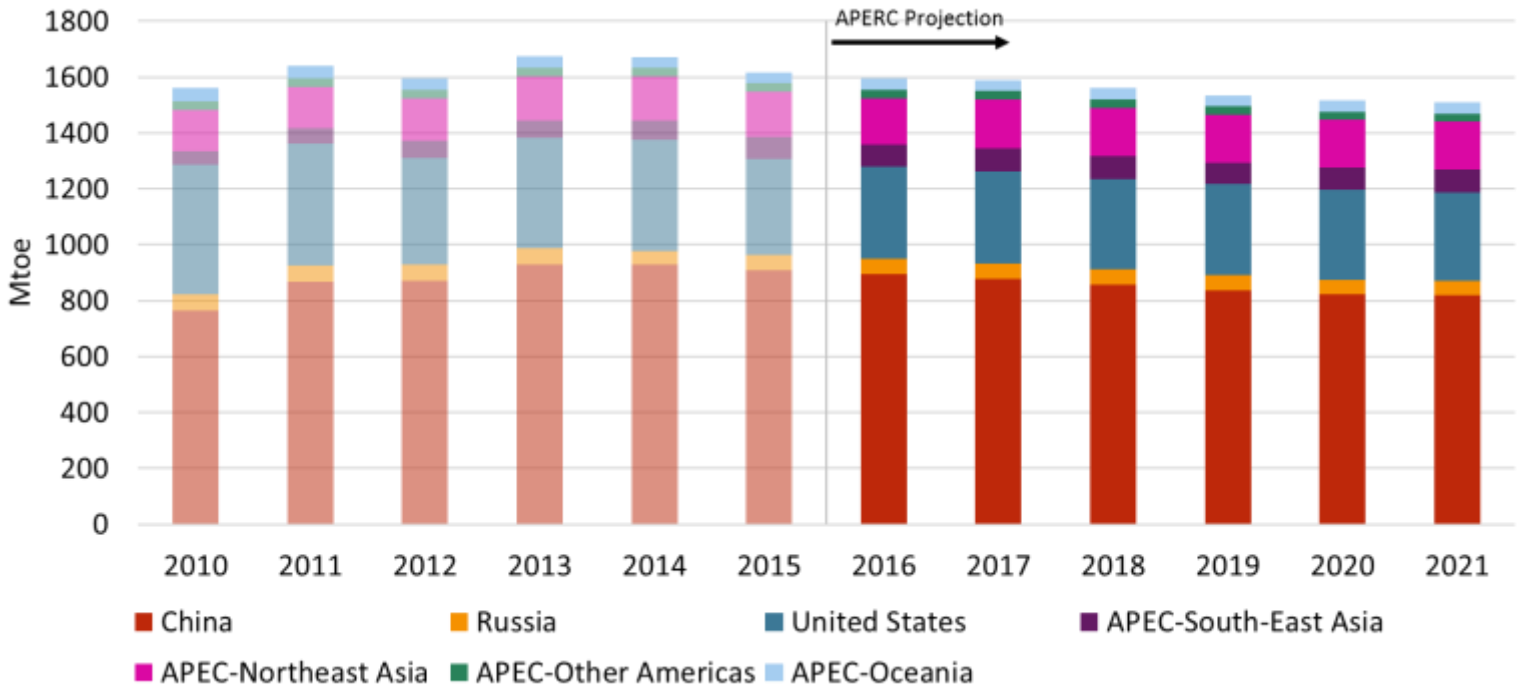


Source (APERC, 2019).

- *Coal production in the China decreased by 2.6% in 2016 compared with 2013 level.*
- *Compared with the 2011 level:*
  - *US coal production decreased by 25% through 2016;*
  - *Australia, Indonesia and Russia increased their coal production by 23%, 11% and 24% respectively, mainly for export.*

Demand outlook – Thermal coal

Growth in Asia will continue to sustain thermal coal demand in APEC

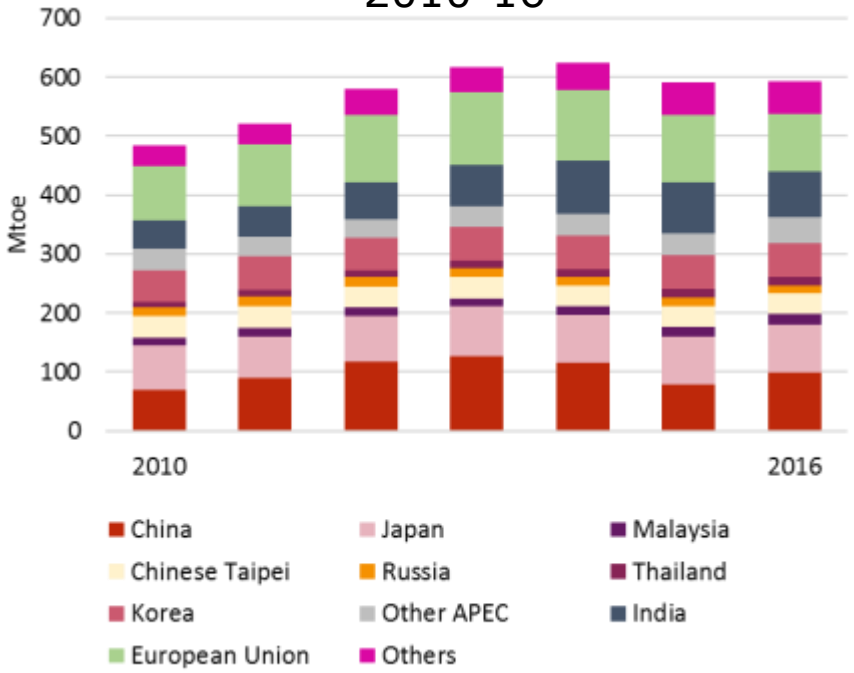


Source: IEA (2018) and APERC (2016).

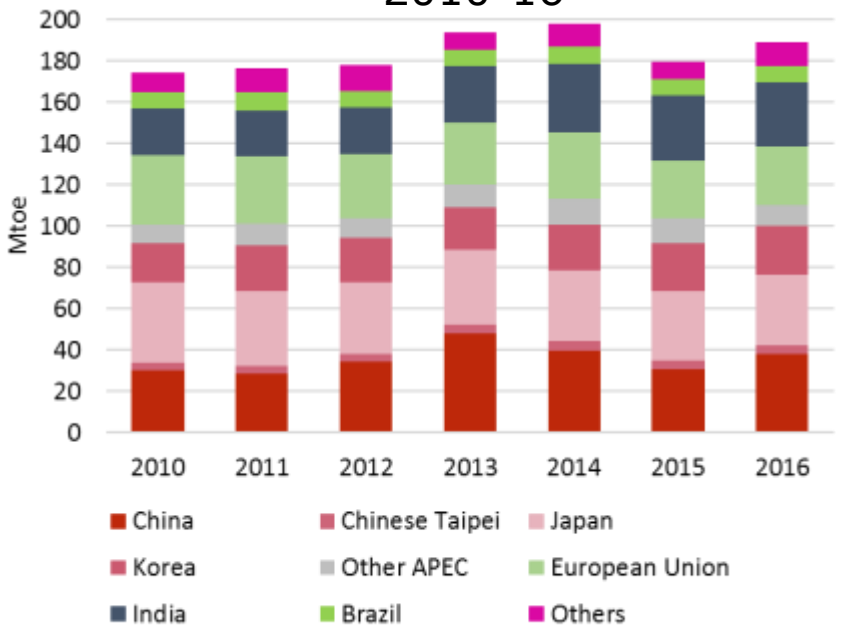
- *China's coal consumption in power will decrease at a very slow pace compared with the previous decade as more regulation in curbing coal usage introduced by the government.*
- *Coal consumption for thermal coal in Southeast Asia is expected to expand.*

Coal imports

Global thermal coal imports, 2010-16



Global metallurgical coal imports, 2010-16

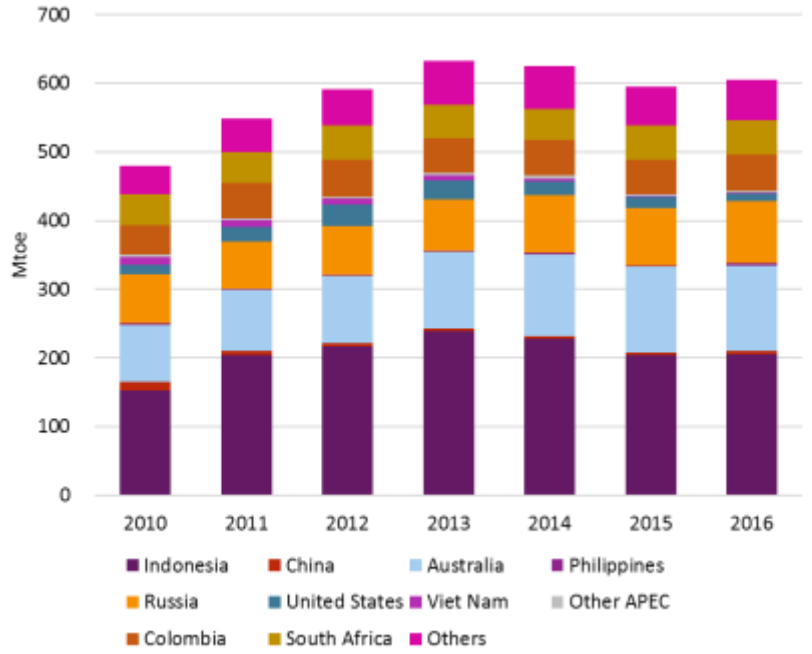


Source: IEA (2018)

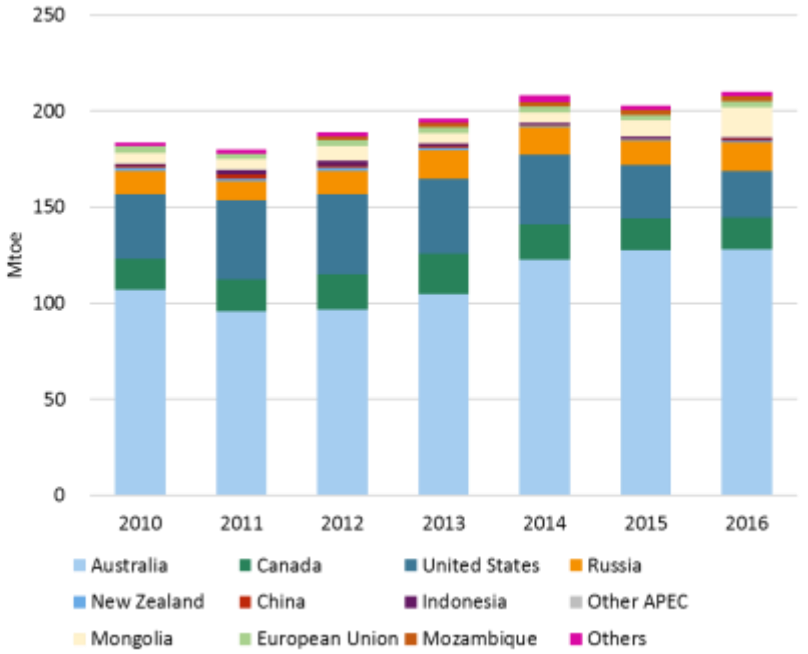
- *China and South East Asia economies are projected to increase industrial sector coal consumption while other APEC members are flat.*
- *Thermal coal imports are projected to be flat for the APEC region but differ in each economy.*

Coal exports

Global thermal coal exports, 2010-16



Global metallurgical coal exports, 2010-16



Source: IEA (2018)

- *Indonesia is projected to continue to dominate thermal coal export while Australia dominates metallurgical coal.*
- *Demand outside APEC, including India, is vital for coal exporters.*

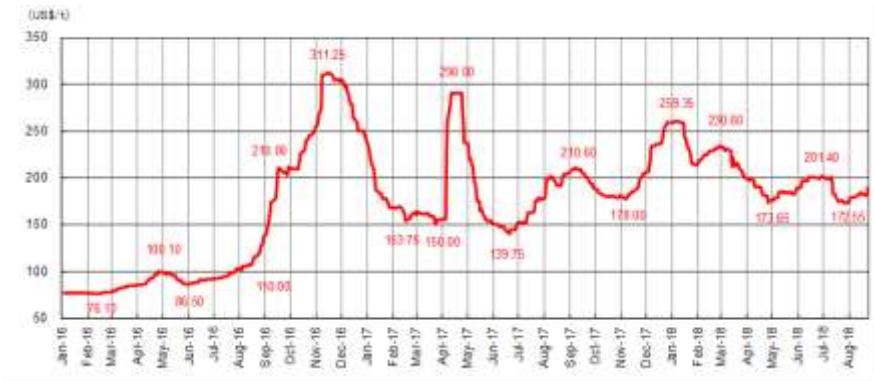
Coal price outlook

Trend of thermal coal spot price

Source: globalCOAL

Thermal coal price, roseto more than USD$110/tonne earlier this year. In 2018, the spot price of thermal coal broke through and remained above the USD 100/tonne mark from winter procurement, but prices retreated to USD 90/tonne at the end of March when seasonal demand waned.

Australian Premium hard coking spot price



Source: IHS

Relying less on coal – energy decarbonisation

Economy	Updates
Australia	• Australia electricity demand declined or remained flat for six consecutive years through June 2015. • Coal generation plants are being retired and not being replaced, removing significant capacity from the market and leaving a tighter supply-demand balance. • Since 2012–13, capacity additions to the National Electricity Market (NEM) have largely been in wind and solar plants,
Canada	• Some provinces have introduced policies and programs to promote renewable energy while discouraging the continued use of coal-fired power plants. • In 2016, the federal government additionally announced its plan to accelerate the phase-out of coal-fired electricity generation in Canada by 2030.

Relying less on coal – energy decarbonisation

Economy	Updates
China	China has worked on streamlining emissions from fossil fuel power plants based on a strategy of "Build large capacity units while shutting down small ones." Clean and efficient coal utilization has the following goals: • Implement the upgrading action plan for energy conservation and emissions reductions in coal-based power generation. • Carry out nationwide upgrades of coal-fired power units to achieve ultra-low emissions and energy efficiency. • Ensure average coal consumption per kilowatt-hour is kept below 310 grams in existing power plants and below 300 grams in newly built power plants. • Encourage the use of backpressure thermal power units for heating and develop combined multi-source heating, cooling, and power systems. • Increase the proportion of coal used for power generation.
United States	Nearly 11 GW of generating capacity was retired in 2017. Coal-fired plants accounted for 47% of the retirements. These retirements are driven by: • modest demand growth; • relative fuel prices; • availability of the combined-cycle plant fleet; • environmental compliance costs; and • other compliance costs.

Thank you!

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

APERC
Asia Pacific Energy Research Centre