



30th APEC Expert Group on Energy Data and Analysis (EGEDA) Meeting
Bali, Indonesia, 26-28 February, 2019

6A. Report on APERC Research Activities

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APERC carries out research and cooperative projects

1. Research activities

- a. APEC Energy Demand and Supply Outlook
- b. Yearly APEC Energy Overview
- c. APERC Oil/Gas/Coal reports
- d. Topical studies

2. Cooperative projects

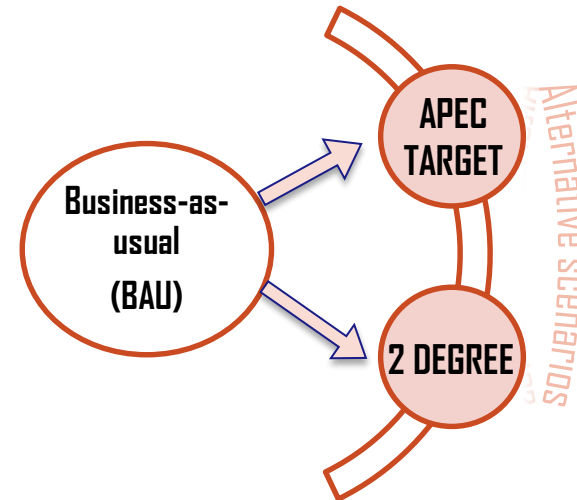
- a. Peer Review on Energy Efficiency (PREE)
- b. Low Carbon Energy Projects (PRLCE, LCMT)
- c. Energy Security Projects (OGSI)

3. Data collection and training

4. Annual Conference and Advisory Board meeting

5. Other activities

- **Extends projection to 2050**
- **Uses OECD GDP forecasts**
- **Makes buildings models activity driven**
- **Distributes renewables to the demand and electricity models**
- **Adds refinery and supply models as well as an integrating module**
- **Extends investment calculations to include demand side investment and fuel savings**



Part 1 – APEC demand and supply under business as usual scenario

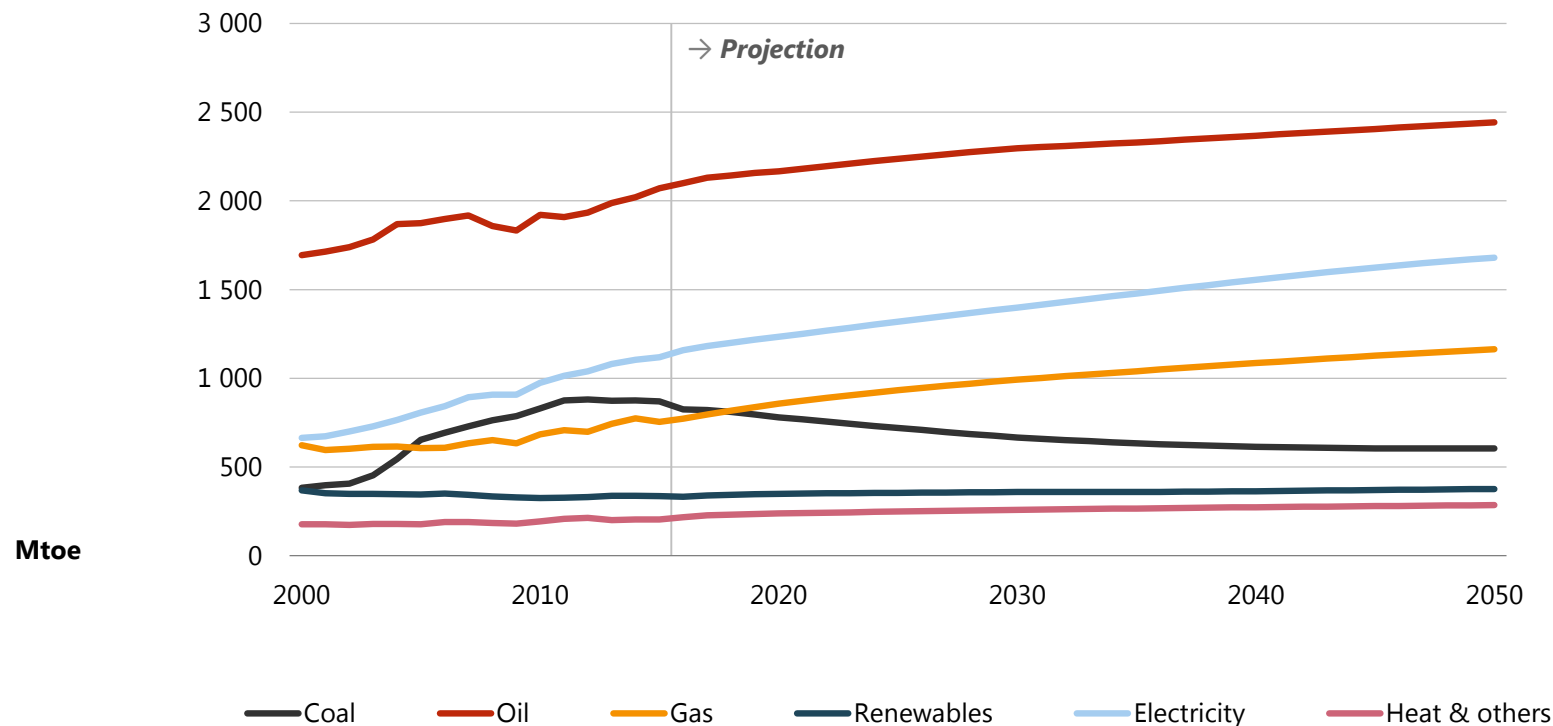
- Introduction
- Outlook for energy demand
- Outlook for energy supply
- Outlook for the power sector

Part 2 – APEC demand and supply under alternative scenarios

- APEC energy goals scenario (combined intensity + doubling renewables share)
- 2-degree scenario (low carbon transition)
- Energy investment
- Energy security
- Energy trade
- Raising APEC climate ambitions (focus on implementation)

Oil remains the dominant end-use fuel in APEC

Final energy demand by fuel, 2000-2050

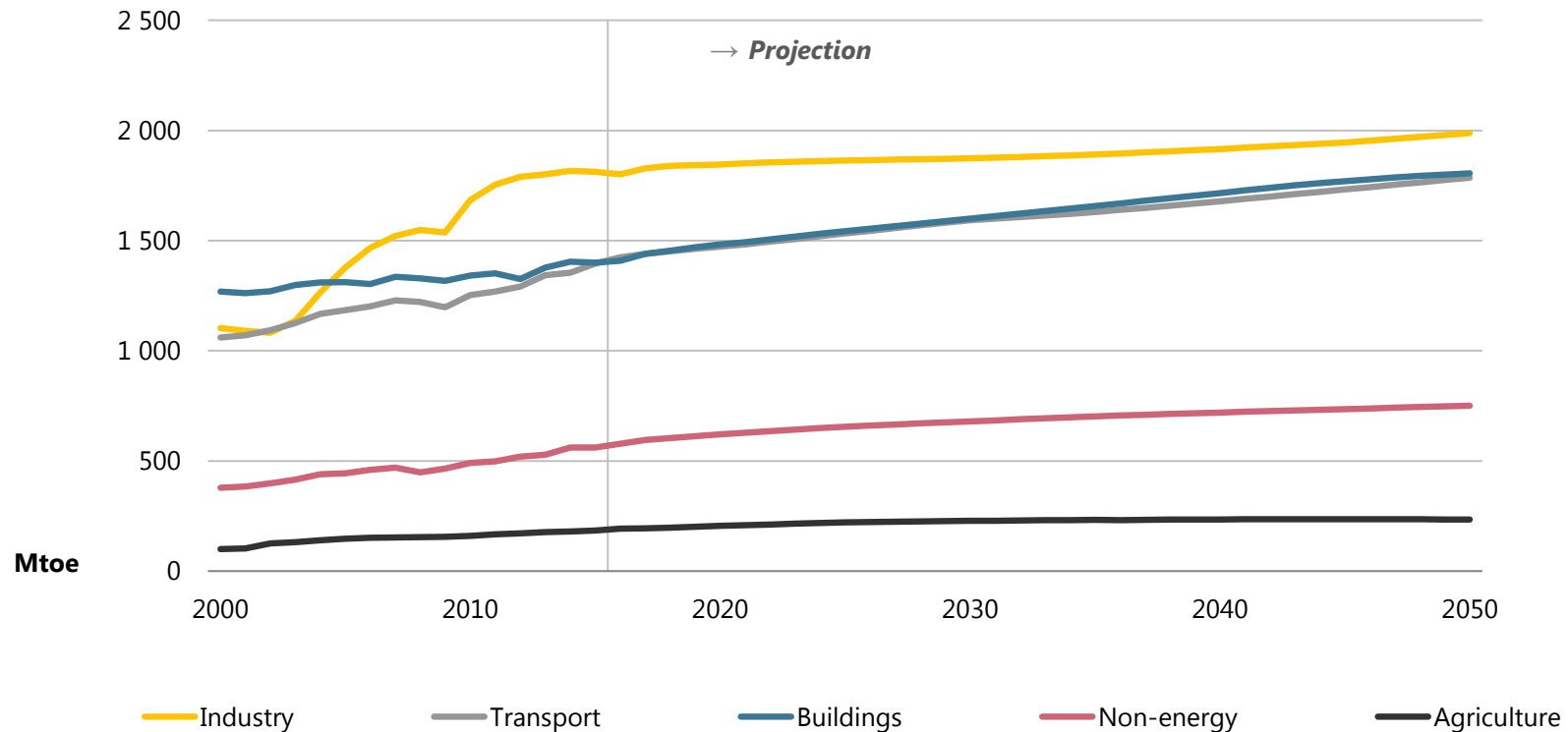


Source: IEA statistics 2017 and APERC analysis.

Demand for natural gas, electricity, and heat are all projected to grow faster than oil.

Industry is the largest end-use consumer in APEC

Final energy demand by consuming sector, 2000-2050

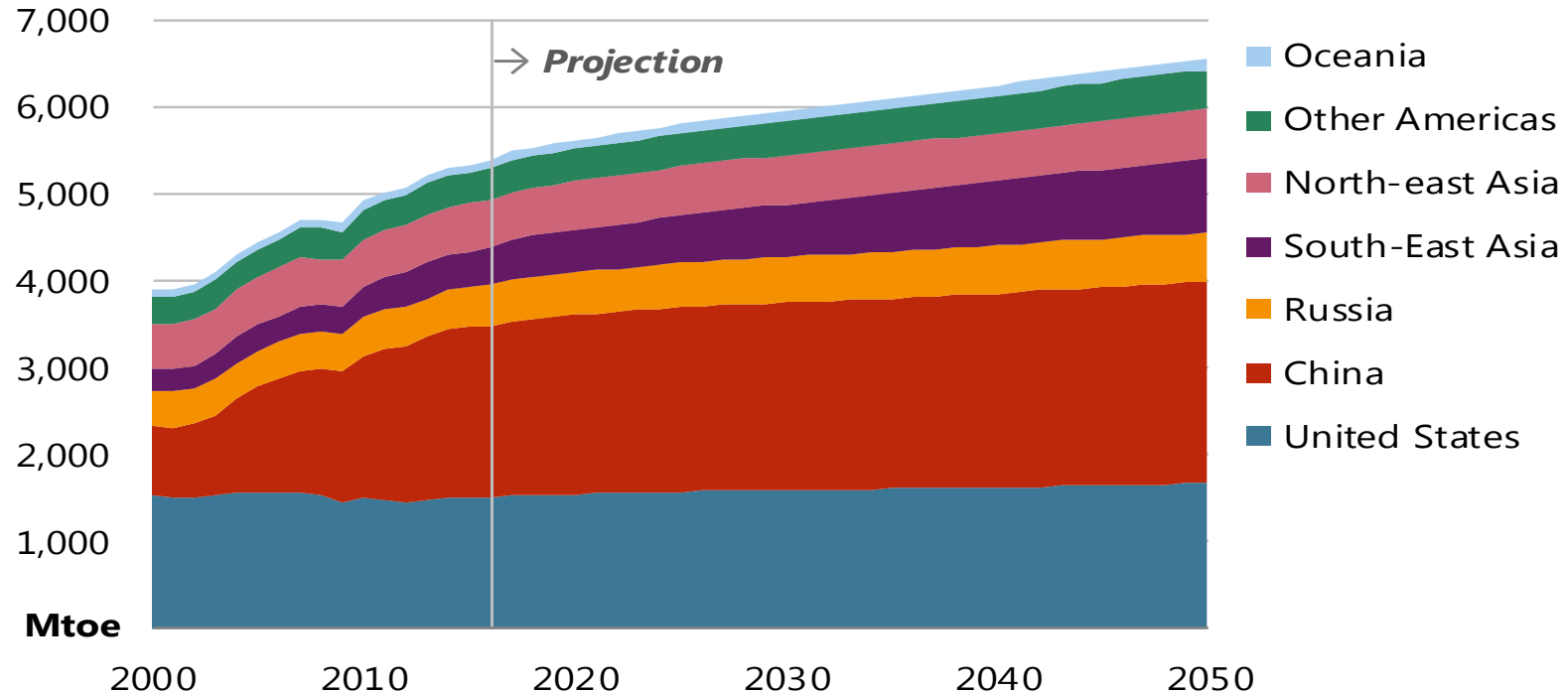


Source: IEA statistics 2017 and APERC analysis.

APEC energy demand grows 21%, but slows to 2050. All other major sectors grow faster than industry.

China and the US consume more than half of APEC energy

Final energy demand by region, 2000-2050



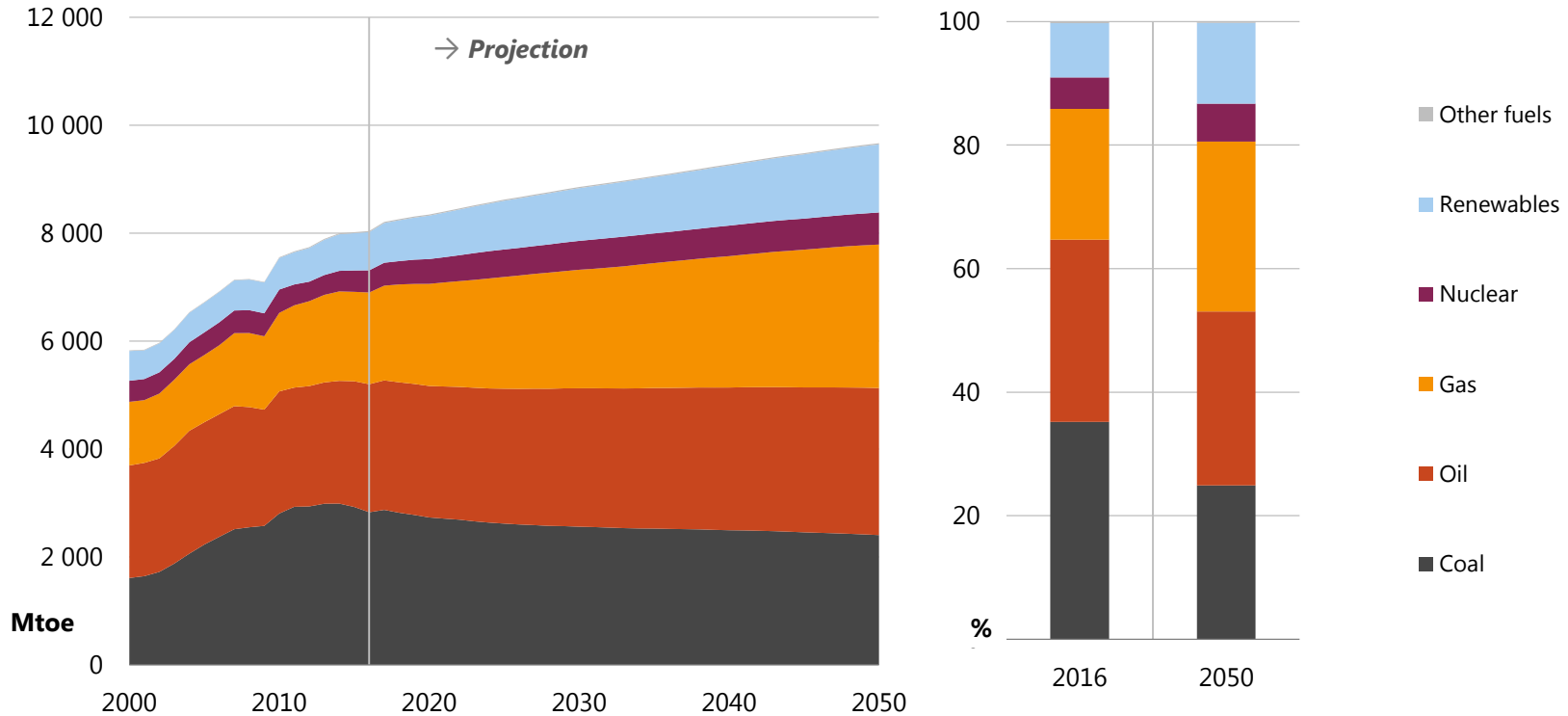
Source: IEA statistics 2017 and APERC analysis.

Energy demand for South-east Asia is projected to nearly double. Demand in other Americas and Oceania increases more than 25%.

Note: **Oceania** (Australia, New Zealand and PNG), **Other Americas** (Canada, Chile, Mexico and Peru), **Other Northeast Asia** (Hong Kong, Japan, Korea and Chinese Taipei), **Southeast Asia** (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam)

Fossil fuels continue to dominate energy supply

Total primary energy supply by fuel, 2000-2050

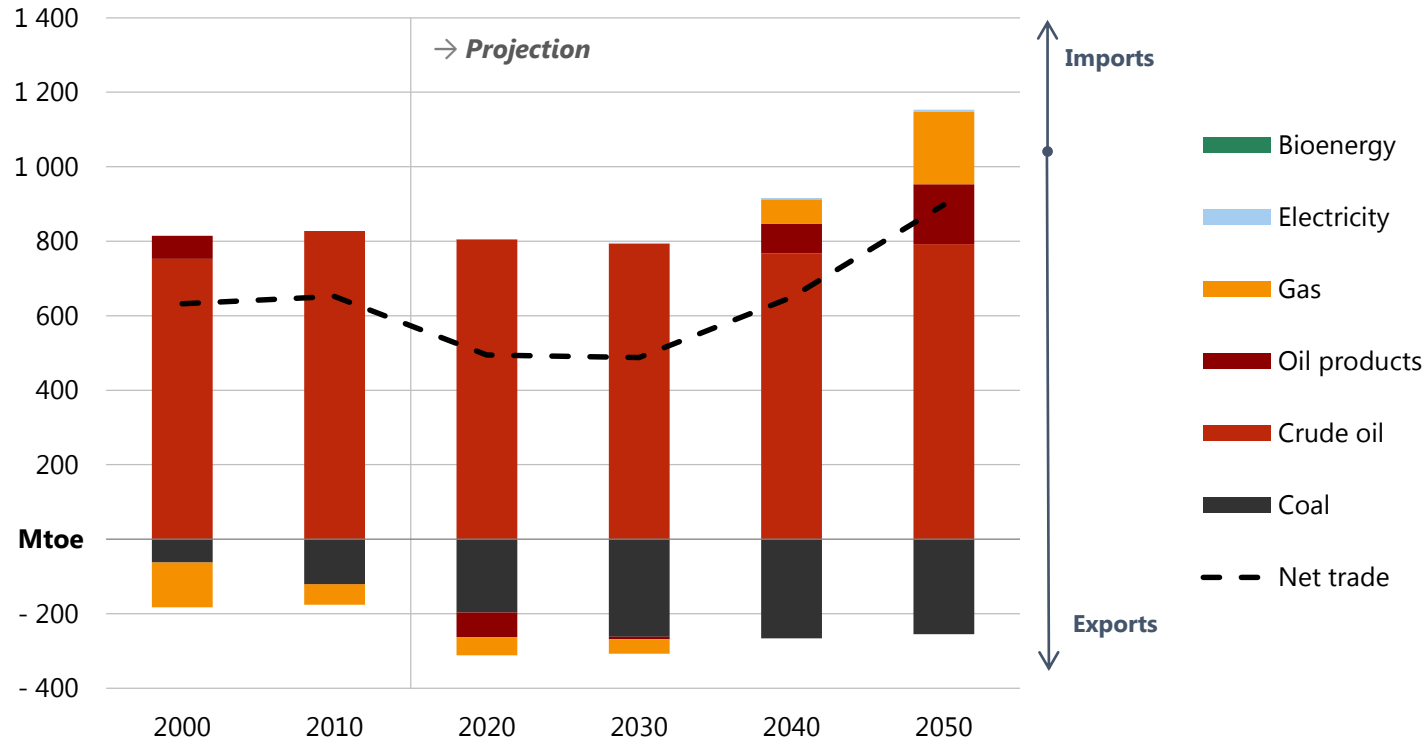


Source: IEA statistics 2017 and APERC analysis.

Coal supply declines by 15% from 2016 to 2050, while all other fuels grow. Natural gas grows faster than any other fuel.

APEC continues to import large volumes of crude oil

Net energy trade, 2000-2050



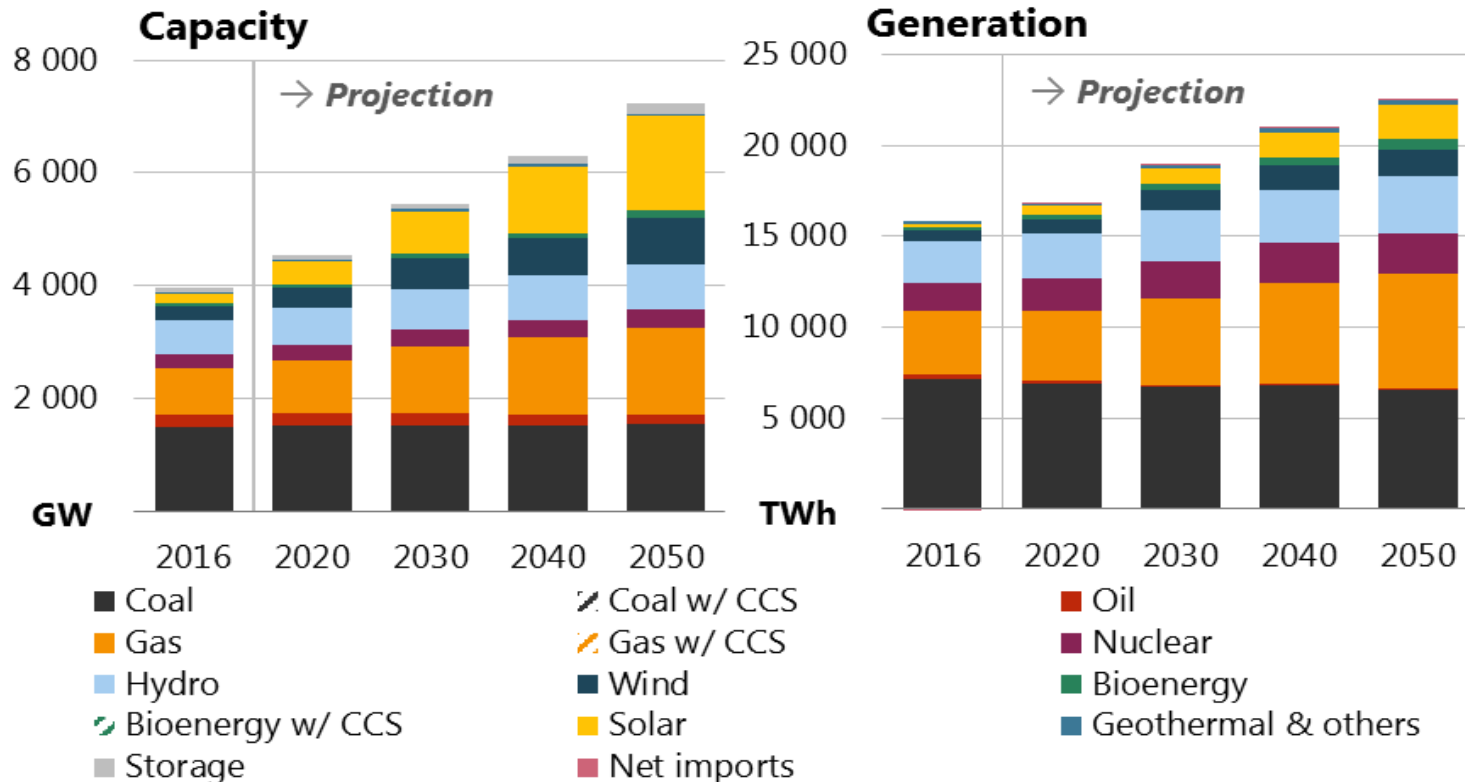
Source: IEA statistics 2017 and APERC analysis.

**Net imports of crude oil remain almost unchanged from 2016 to 2050.
APEC becomes a net importer of natural gas and oil products.**

Note: **Oceania** (Australia, New Zealand and PNG), **Other Americas** (Canada, Chile, Mexico and Peru), **Other Northeast Asia** (Hong Kong, Japan, Korea and Chinese Taipei), **Southeast Asia** (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam)

Electric capacity growth is strong for gas and renewables

Electricity capacity and generation, 2000-2050

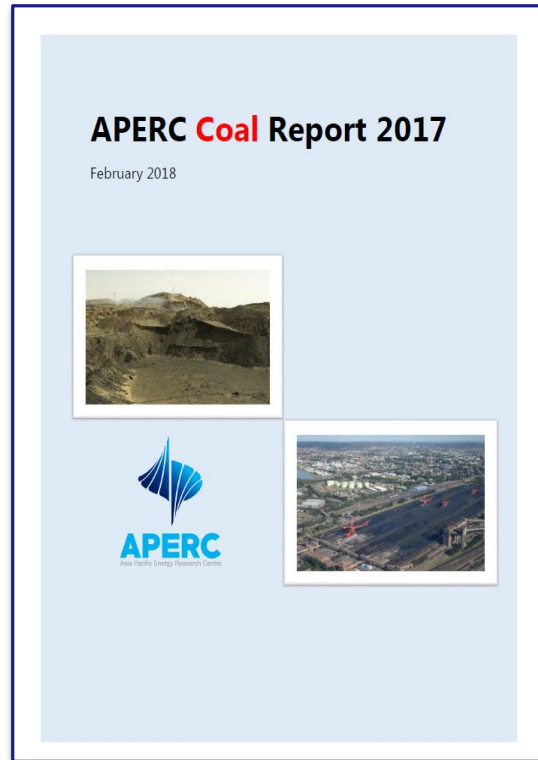


Source: IEA statistics 2017 and APERC analysis.

The shrinking share of coal generation is replaced by natural gas and renewables generation.

Note: **Oceania** (Australia, New Zealand and PNG), **Other Americas** (Canada, Chile, Mexico and Peru), **Other Northeast Asia** (Hong Kong, Japan, Korea and Chinese Taipei), **Southeast Asia** (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam)

APERC fuel reports focus on recent trends, near future



Oil, gas and coal reports support EGCFE

1. Historic trends

- Global context
- Economic growth in APEC
- Demand and supply trends in APEC
- Trade in APEC

2. Demand and supply outlook

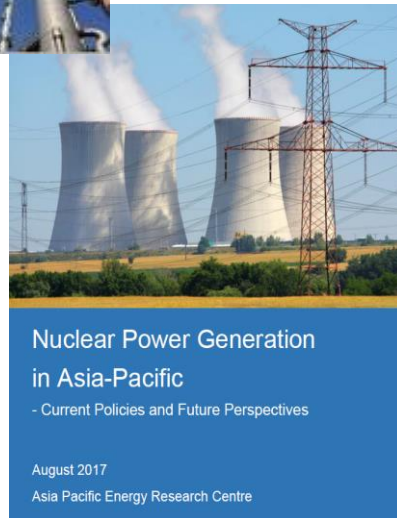
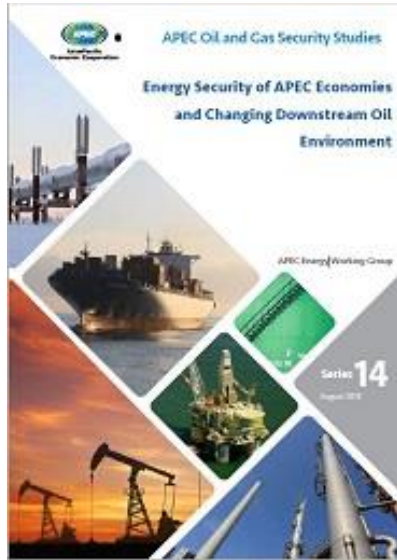
- Demand Outlook
- Production
- Trade Outlook

3. Prices

4. References

For more information, visit <http://aperc.ieej.or.jp/file/2018/3/12/APEC+Coal+Market+Report+2017.pdf>

Recent topical research focuses on supply



1. Emerging energy security risks in changing global energy landscape (OGSS)
2. Study on small-scale LNG in the Asia Pacific region (OGSS)
3. Challenges and perspectives of deployment of battery electric and fuel cell electric vehicles
4. Energy security of APEC economies and changing downstream oil environment (OGSS)
5. Investments in natural gas supply chain under the low price environment (OGSS)
6. Perspectives on hydrogen in the APEC region
7. Nuclear power generation in Asia-Pacific



Thank you for your kind attention

<http://www.egeda.ewg.aperc.org/>