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# 3-1. Progress Report on the APEC Outlook 7<sup>th</sup> Edition

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# First chapter drafts have been completed

	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	2019
Economy review of assumptions	✓								
Model development	✓	✓	✓						
Demand model runs			✓						
Power & supply model runs				✓					
Economy reviews of model results				✓					
Model reruns to respond to comments					✓				
Outlines, drafting of chapters					✓	✓			
Economy & expert reviews of chapter drafts and updates in response to comments							✓	✓	
Editing, printing								✓	✓
Publication									April

# Modelling changes for the 7<sup>th</sup> edition

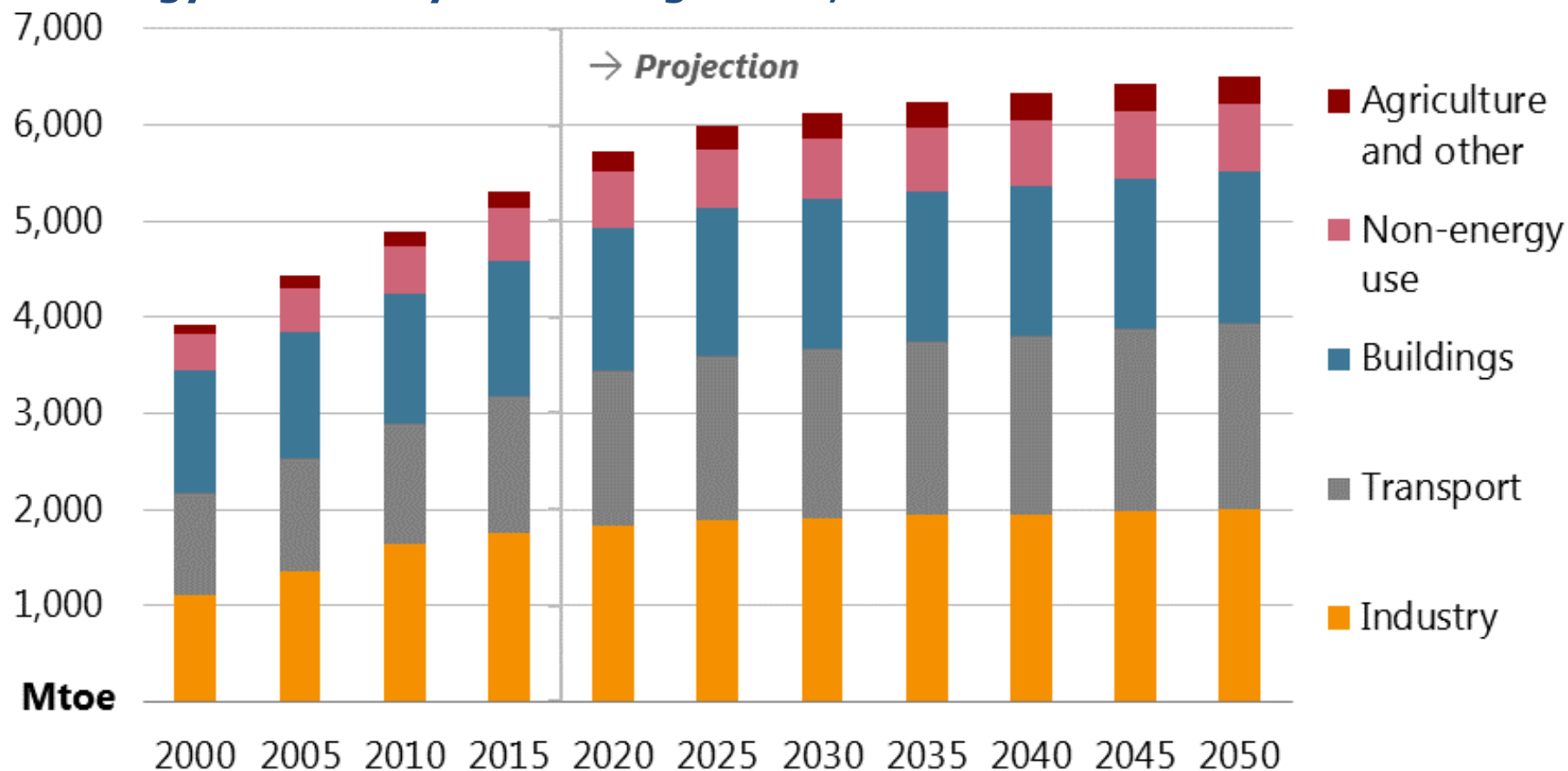
- Extend projection to 2050
- Use OECD GDP forecasts
- Make buildings model activity driven
- Start to change industrial model from top-down to bottom up
- Add buses and light trucks to the transportation model
- Distribute renewables to demand and electricity models
- Add a refinery model and a supply model
- Add an integrating module
- Extend investment model to include demand-side investment and fuel savings



# 'Business as Usual' Scenario

# APEC energy demand growth slows to 2050

## Final energy demand by consuming sector, 2000-2050

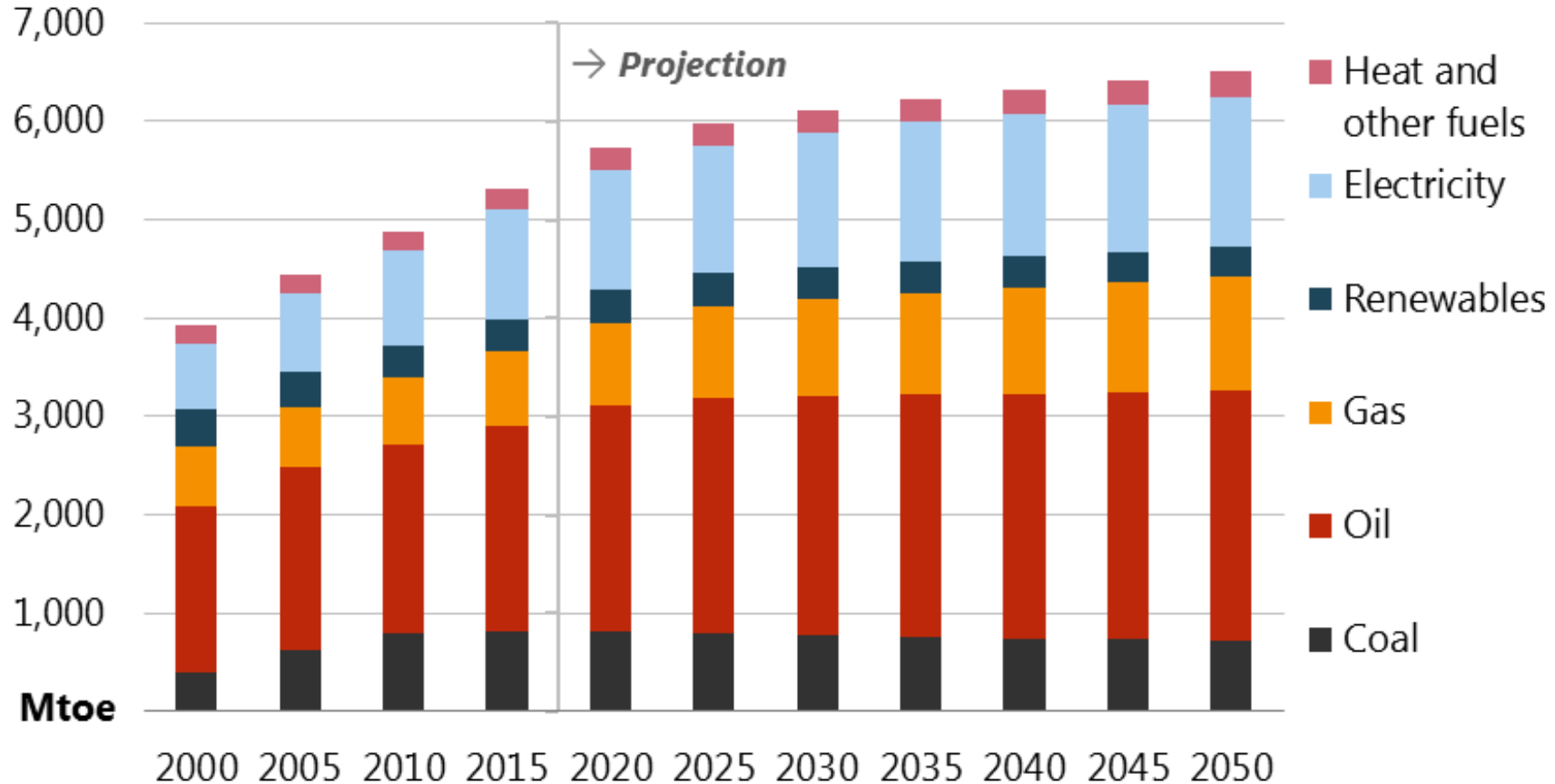


Source: IEA statistics 2017 and APERC analysis.

**Final energy demand rises by 23% from 2015 to 2050. Transportation grows rapidly, almost overtaking industry as the largest consuming sector.**

# Oil remains the dominant end-use fuel in APEC

## Final energy demand by fuel, 2000-2050

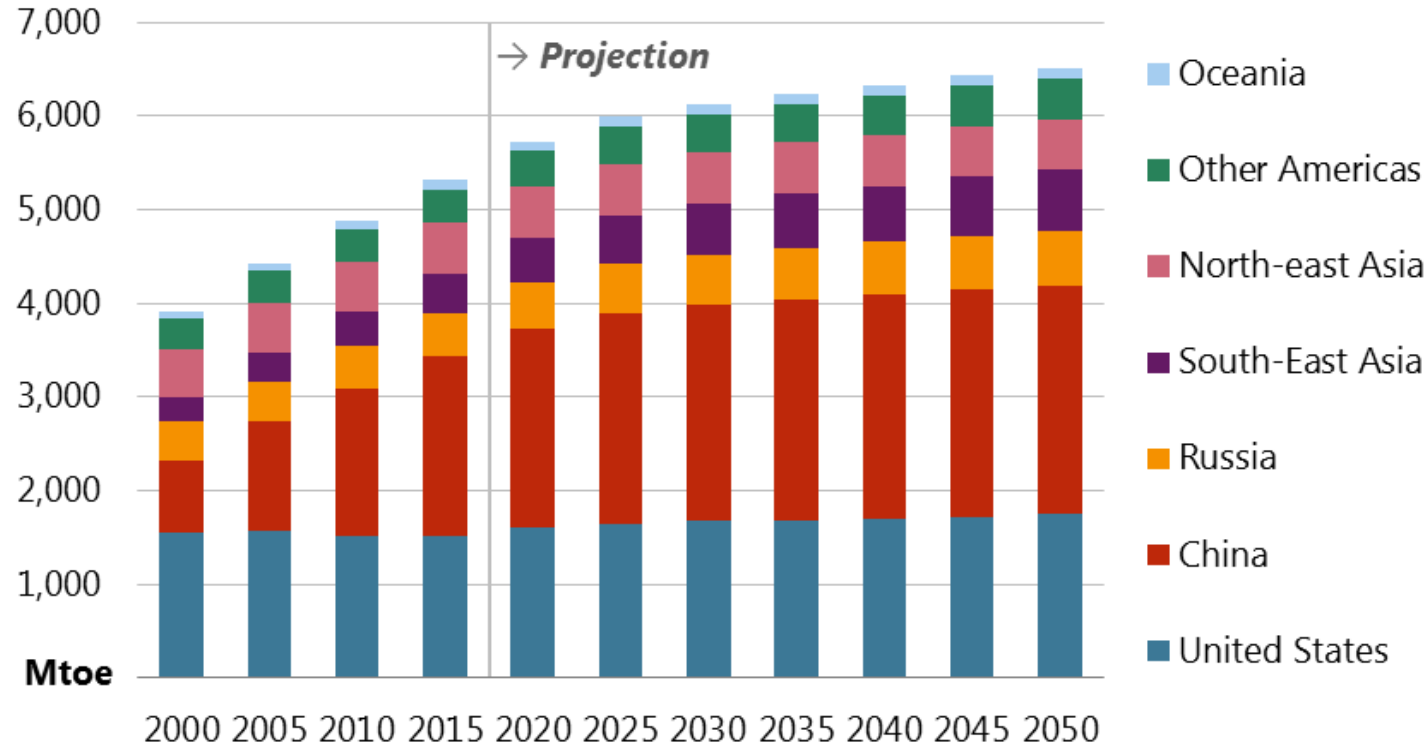


Source: IEA statistics 2017 and APERC analysis.

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

# China and the US dominate APEC demand

## Final energy demand by region, 2000-2050



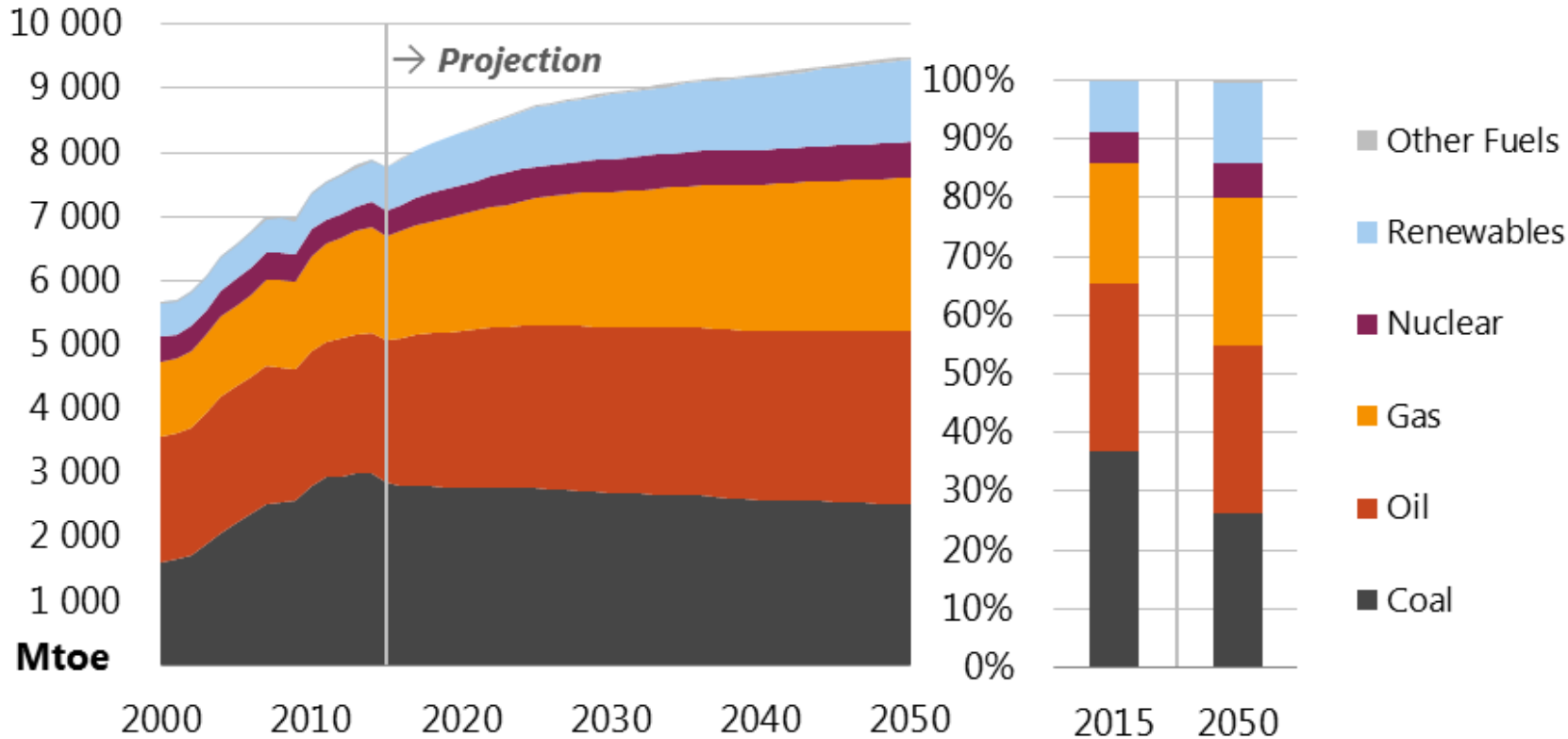
Source: IEA statistics 2017 and APERC analysis.

**Energy demand for South East Asia is projected to increase 57%. Demand in China, Russia, and other Americas 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 APEC energy supply

## Total primary energy supply by fuel, 2000-2050



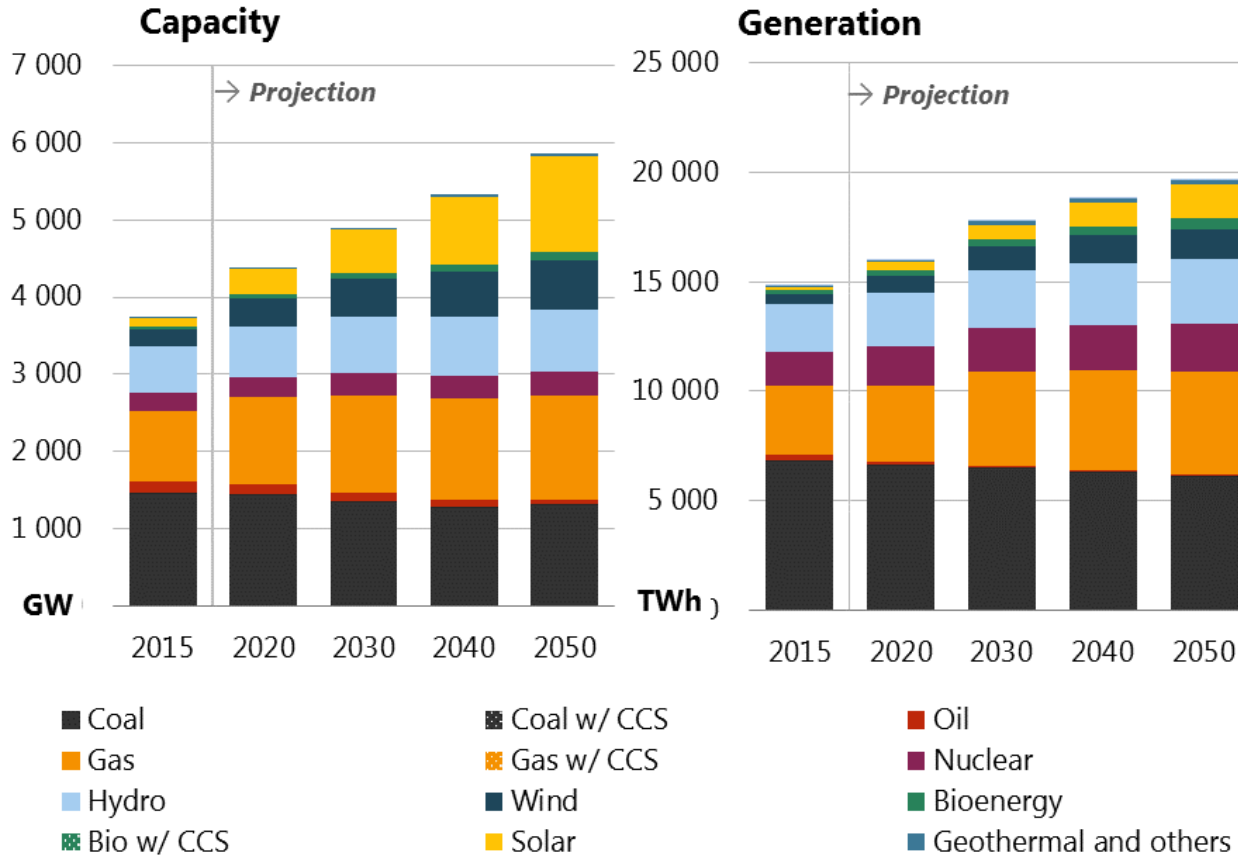
Source: IEA statistics 2017 and APERC analysis.

**Coal supply declines by 12.4% from 2015 to 2050, while all other fuels grow. Renewables grow faster than any other fuel.**



# Electricity capacity growth is strong for gas and renewables

## Electricity capacity and generation, 2000-2050



Source: IEA statistics 2017 and APERC analysis.

**Coal capacity shrinks by 10% over the projection period, while renewables capacity grows by 188%.**

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)

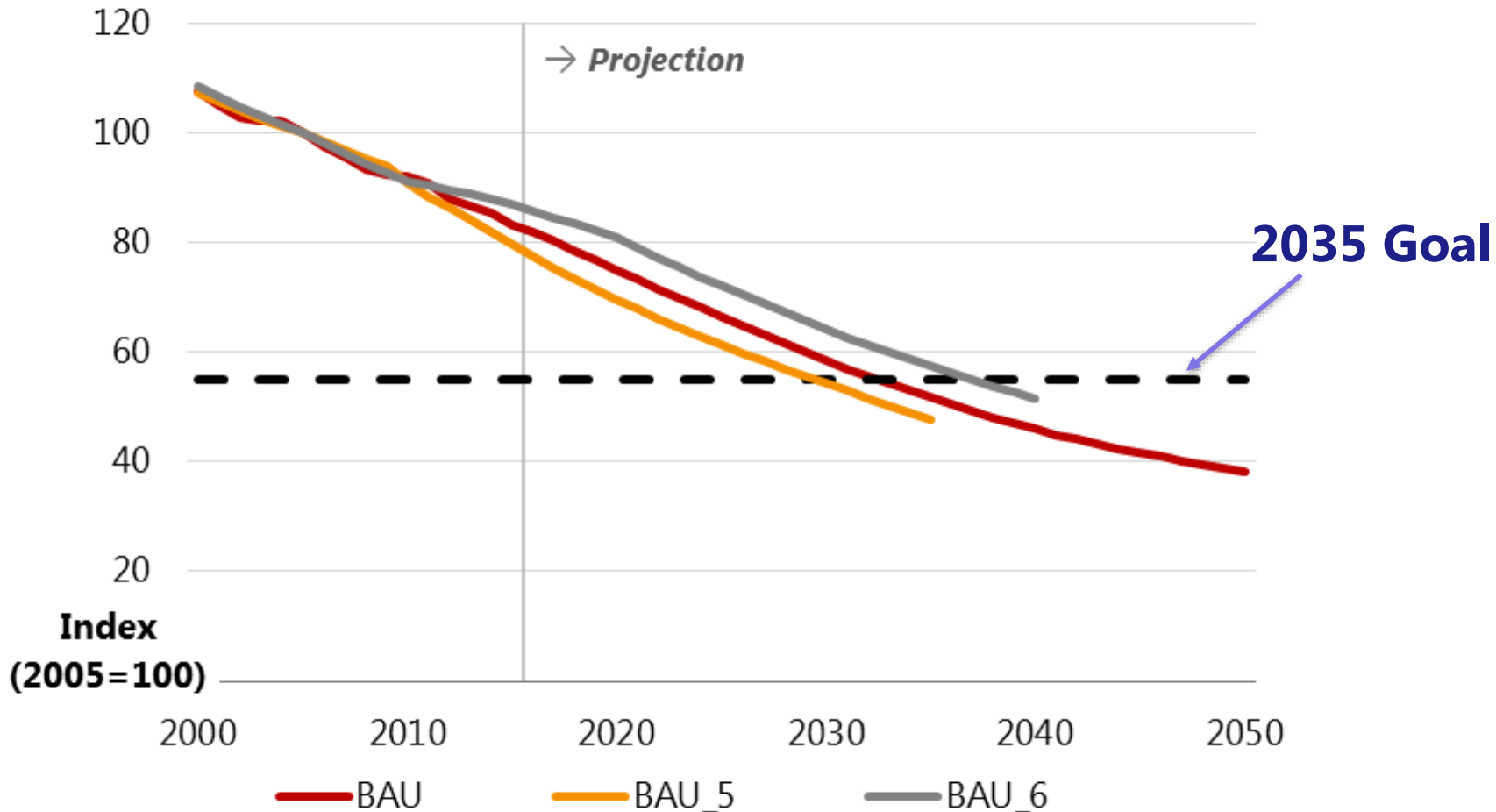


# Implications



# Energy intensity compared with the 5<sup>th</sup> and 6<sup>th</sup> ed.

## APEC energy intensity, 2000-2050

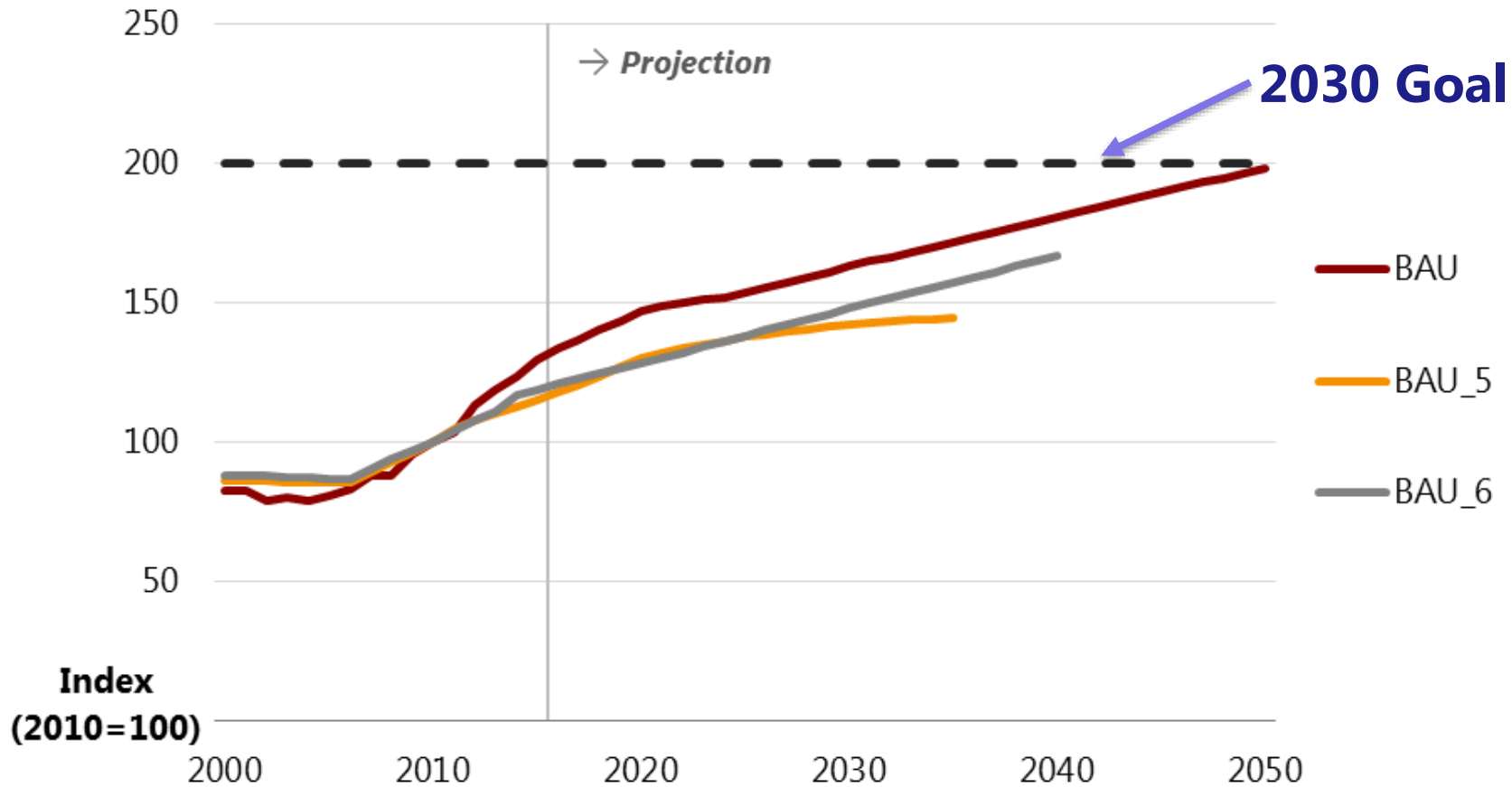


Source: IEA statistics 2017 and APERC analysis.

**APEC achieves its aspirational energy intensity goal by 2033 in the 7<sup>th</sup> edition projections.**

# Renewables doubling compared with the 5<sup>th</sup> and 6<sup>th</sup> Ed.

## APEC renewables share, 2000-2050

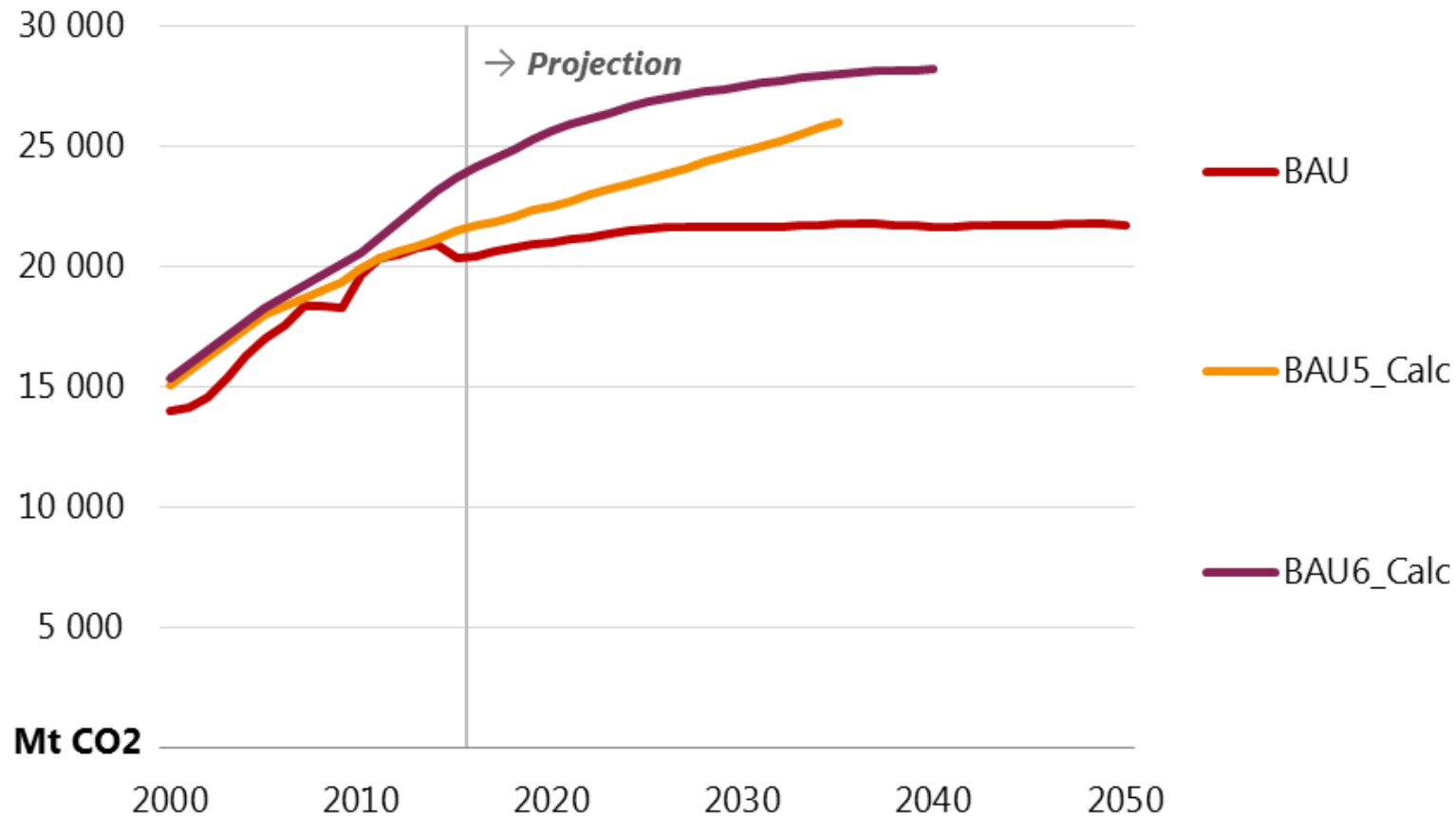


Source: IEA statistics 2017 and APERC analysis.

**APEC does not achieve its renewables doubling goal in the BAU scenario until just after 2050.**

# CO<sub>2</sub> emissions plateau in APEC in the BAU scenario

## Energy sector related CO<sub>2</sub> emissions, 2000-2050

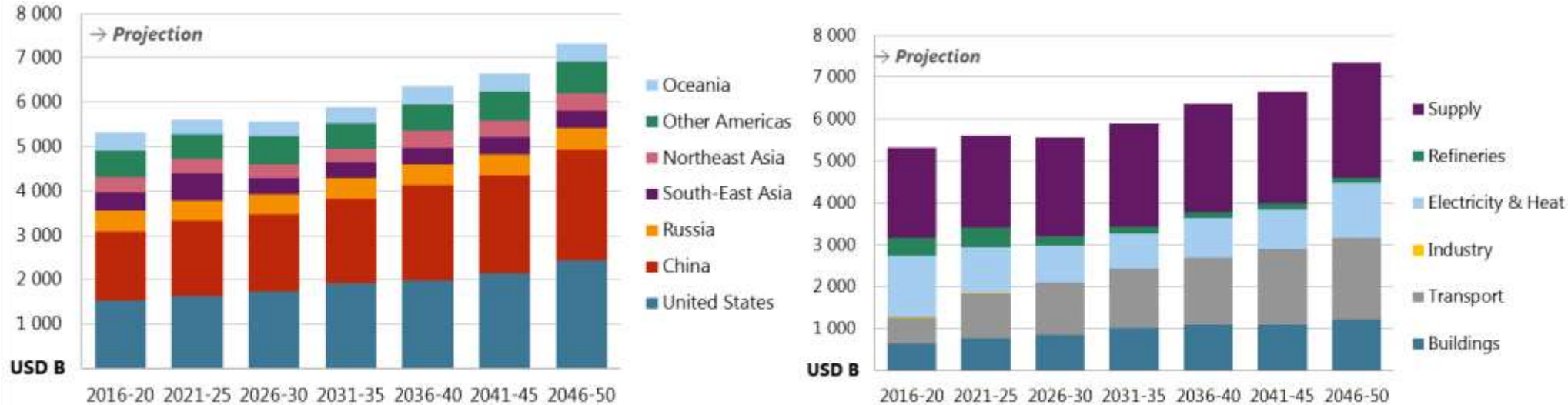


Source: IEA statistics 2017 and APERC analysis.

**From 2025 onwards, CO<sub>2</sub> emissions from the APEC energy sector flatten at around 21.7 Gt.**

# Investment in APEC is driven by China and the USA

## Investment in the BAU scenario, 2016-2050



Source: IEA statistics 2017 and APERC analysis.

**Investment increases over time, topping USD 7 trillion in 2046-2050.**

**Demand side investment represents an increasing share of investment in the future, largely due to increasing investment in transportation.**



**Thank you for your kind attention**

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