

# Outlook 7th Edition results *and vision for the 8th Edition*

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# APEC Energy Demand and Supply Outlook

Investigates challenges faced by APEC economies:

- Affordably meeting growing energy demand
- Reducing negative energy-related environmental impacts
- Enhancing energy security and resilience

7th Edition Outlook provides analysis and insight on:

- Impact of existing and alternative policies on energy demand, supply, emissions and investments through 2050
- APEC energy intensity and renewables doubling goals
- Sectoral transitions that support Paris climate ambitions

# Scenarios

<b>Business-as-Usual (BAU)</b>	<b>APEC Target (TGT)</b>	<b>2-Degrees Celsius (2DC)</b>
Recent trends and current policies.	Pathway that achieves APEC-wide goals to <ul style="list-style-type: none"><li>• reduce energy intensity 45% by 2035</li><li>• double the share of renewables by 2030.</li></ul>	Pathway that provides a 50% chance of limiting average global temperature rise to 2°C.
Provides a baseline for comparison.	Explores implications of alternative scenarios and identifies gaps to overcome.	

# Key APEC-wide trends through 2050

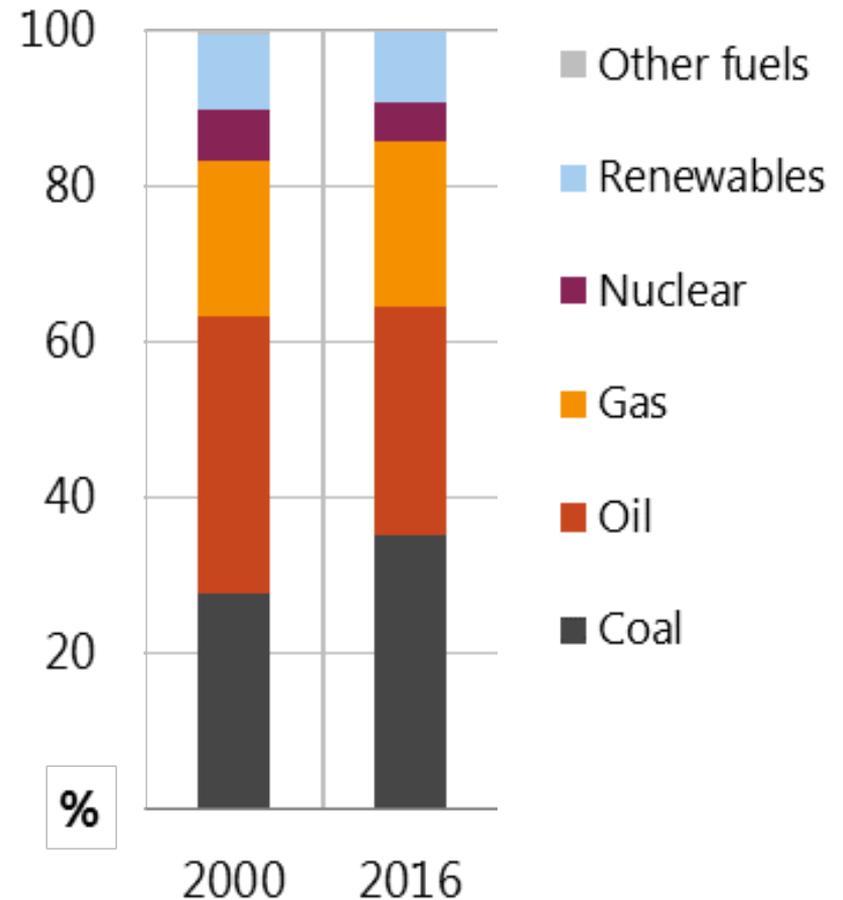
- Final energy demand continues to grow, driven by transport and buildings.
- Electricity demand rises in all scenarios.
- APEC Target Scenario achieves intensity and renewable doubling goals at a net cost savings.
- 2DC scenario requires large-scale deployment of renewables and CCS technologies, also at net cost savings.
- Fossil fuels continue to represent at least half of FED and TPES in 2050, across all scenarios.



# 1. BAU Scenario

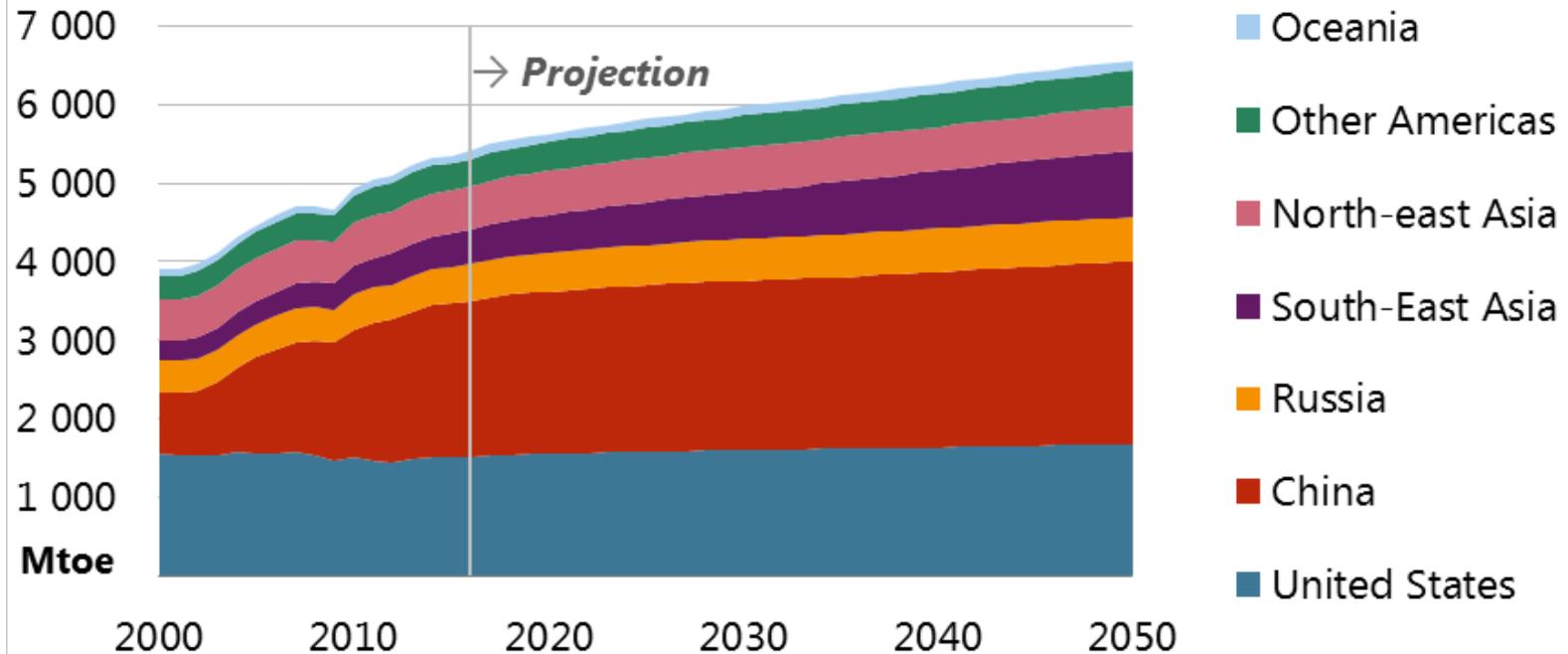
# Background

- As of 2016, APEC represented 39% of global population and 54% of global GDP.
- APEC's total primary energy supply (TPES) has grown 27% since 2000.
- The energy supply mix is currently dominated by fossil fuels.



# Final Energy Demand increases 21% in 2050

Final energy demand by region in BAU, 2000-50

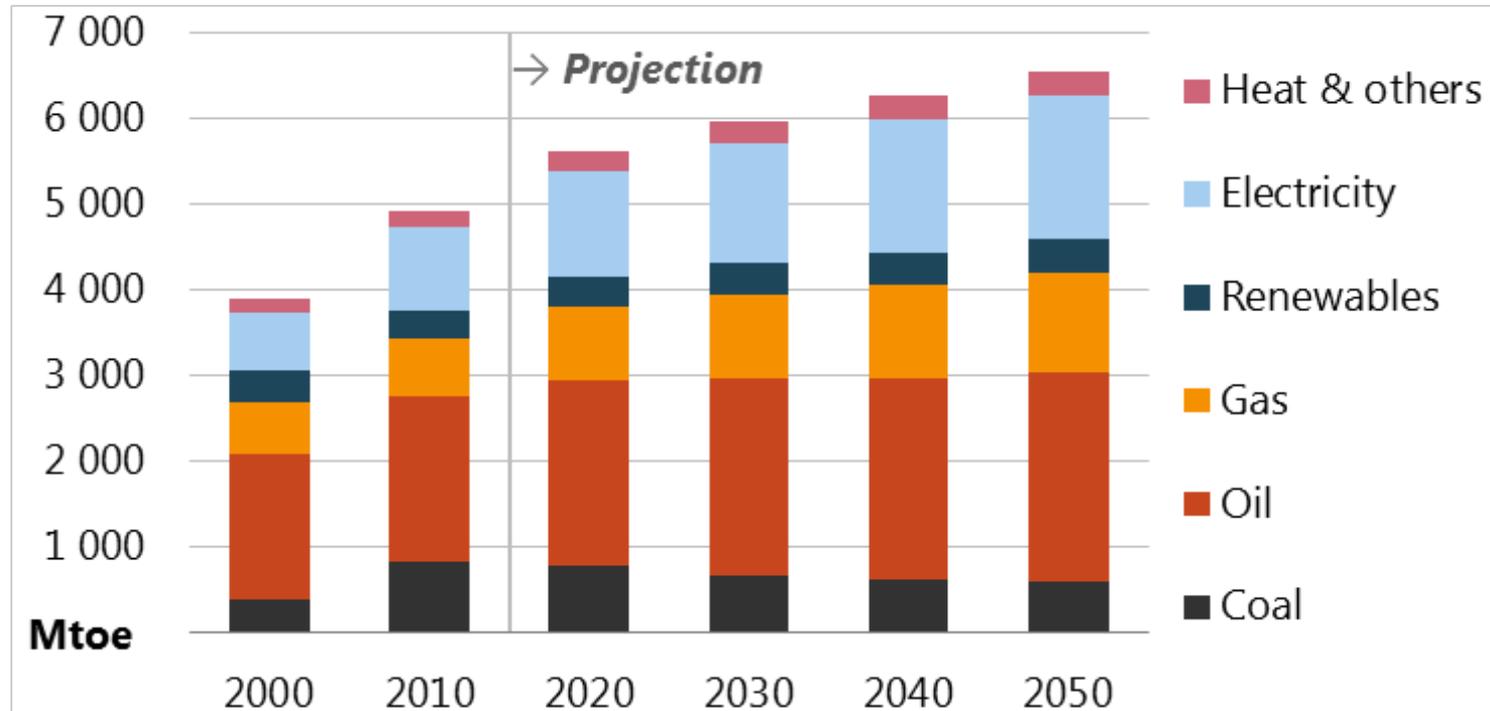


Sources: APERC analysis and IEA (2018a).

*FED grows to over 6 500 Mtoe in 2050, driven primarily by GDP and population growth in China and south-east Asia.*

# Final Energy Demand increases 21% in 2050

Final energy demand by fuel in BAU, 2000-50

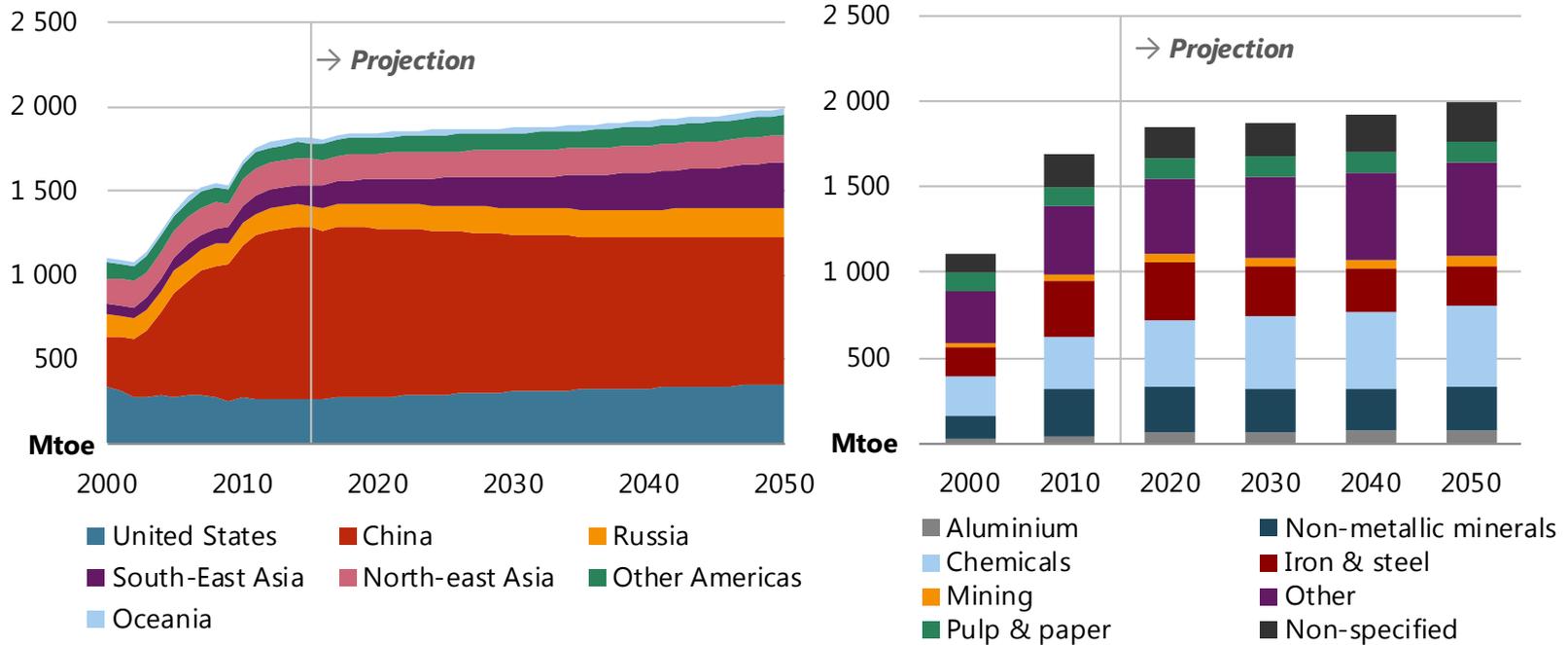


Sources: APERC analysis and IEA (2018a).

*Electricity grows to 26% of FED as use in buildings and transport increases.*

# Industry is the largest sector but growth is slow

Industry final energy demand by region and subsector in BAU, 2000-50

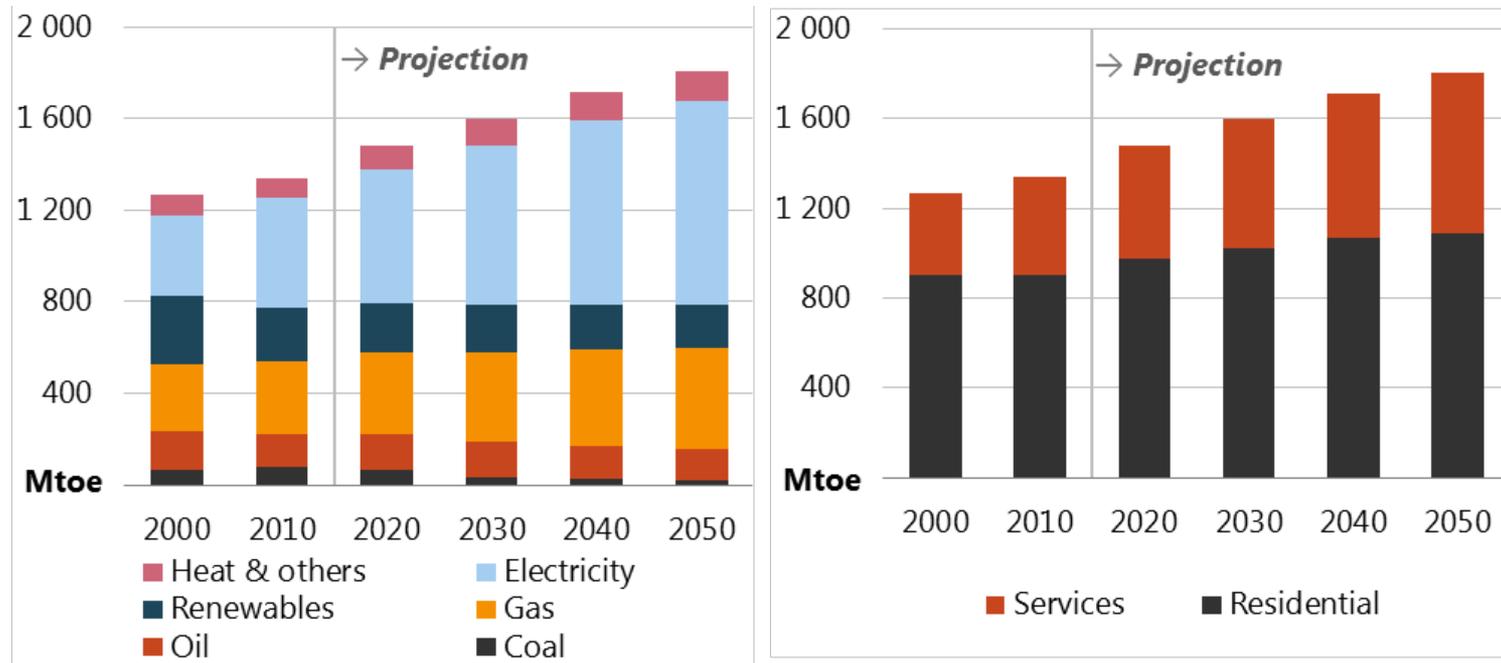


Sources: APERC analysis and IEA (2018a).

*Industry demand grows gradually due to shift towards high value-added manufacturing in China, associated with shifting economic structure.*

# Buildings FED increases by 28% in 2050

Buildings final energy demand by fuel and subsector in BAU, 2000-50

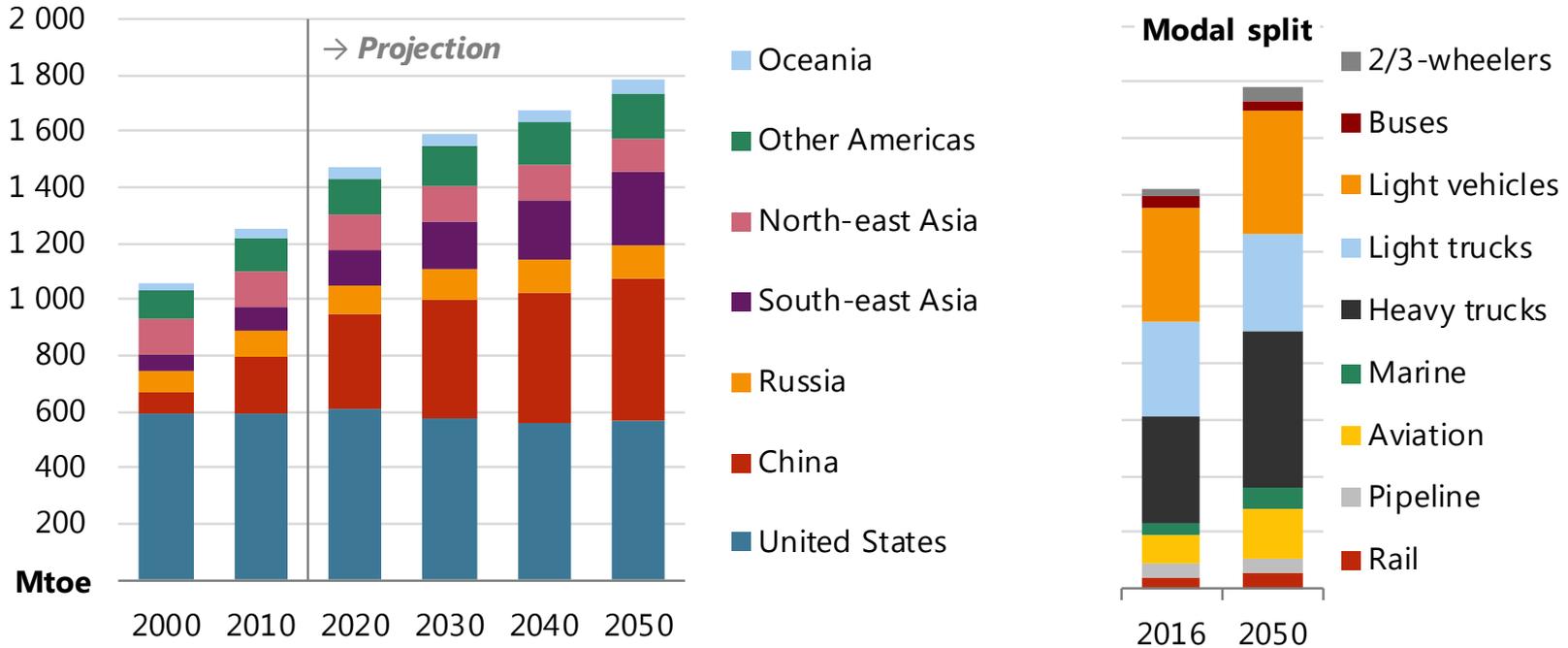


Sources: APERC analysis and IEA (2018a).

*Buildings accounts for 28% of FED in 2050. Space cooling is the fastest-growing source of energy demand in buildings.*

# Transport FED grows by 25% in 2050

Transport demand by region and mode in BAU, 2000-50

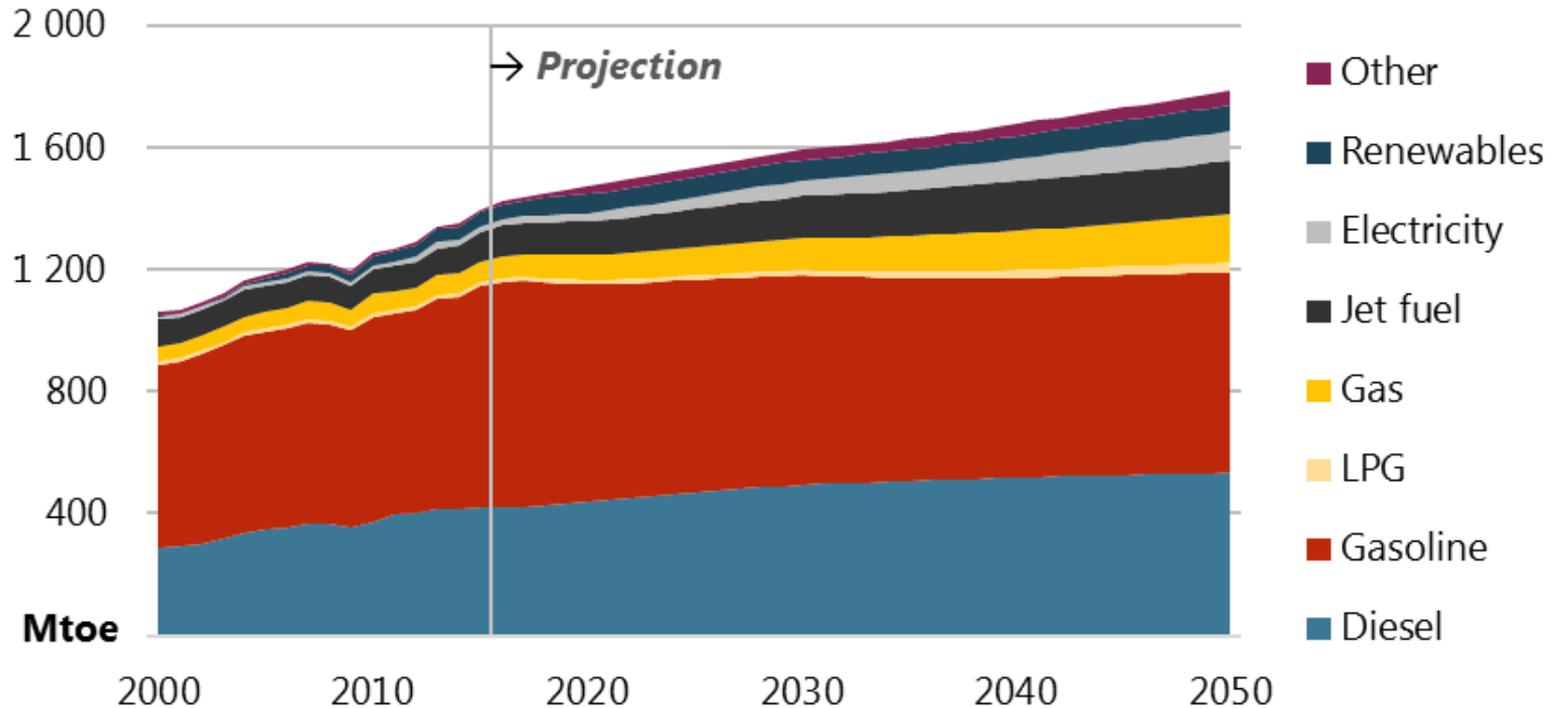


Sources: APERC analysis and IEA (2018a).

*South-east Asia demand more than doubles. In China, demand increases by 70%.*

# Transport FED grows by 25% in 2050

Transport fuel demand in BAU, 2000-50



Sources: APERC analysis and IEA (2018a).

*Fossil fuels remain dominant, but growth slows due to fuel efficiency standards. Electricity increases but remains a minor fuel.*

# Vision for the 8th Edition Outlook (1)

- New name: APEC Energy Outlook, 8th edition
- Current intention is to include three core scenarios:
  - **BAU**: as with past editions, this scenario will include existing policies and provide a baseline for comparison
  - **APEC Target (TGT)**: this scenario will explore policies and pathways to meet APEC's aspirational goals + opportunities for increasing ambition
  - **Climate Change**: explore decarbonisation policies and pathways to support economy commitments under the Paris Climate Agreement
- ... and several side cases
  - High/low fuel prices
  - High / low resource availability
  - Topic focus (e.g., trade, technology, etc)

# Vision for the 8th Edition Outlook (2)

- Update modelling infrastructure
  - Objective: improve start-to-finish run-times and usability
  - Provide a platform for Outlook and other APERC research projects
  - Make available APERC modelling tools to economies
- Update modelling methodologies
  - Adopt open-source frameworks and components
  - Further introduce price and quantity linkages among sectors
  - Represent transformation and supply sectors as cost optimisations



# Thank you!

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

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