



**Asia-Pacific
Economic Cooperation**



2-1. Introduction and Scenario Definition

APERC Workshop

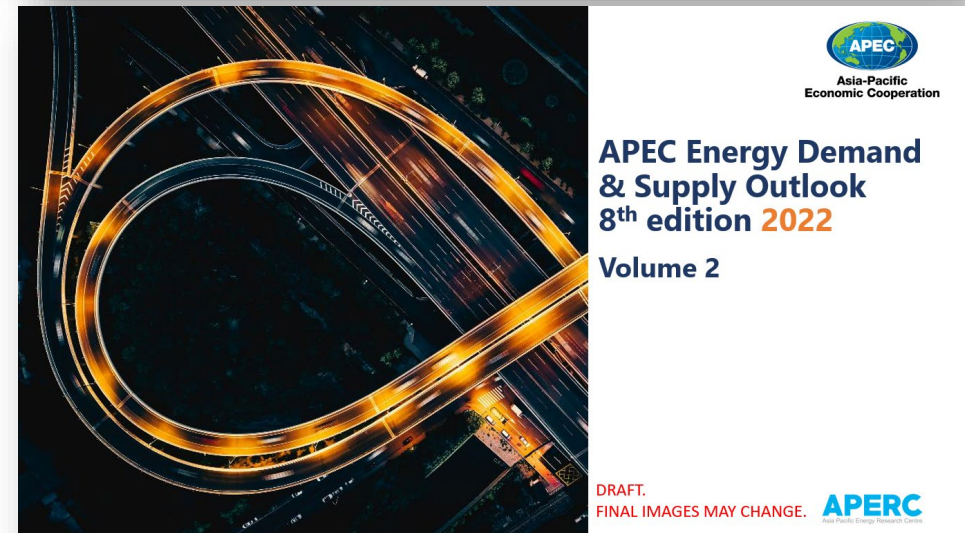
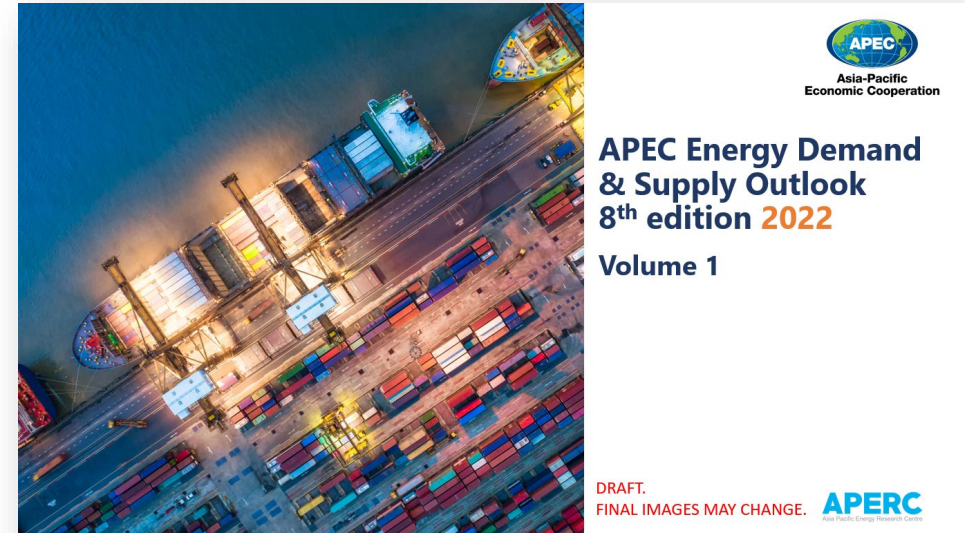
The 63rd Meeting of APEC Energy Working Group (EWG)
13 June 2022 (GMT+8)

Dr David Wogan, Assistant Vice President

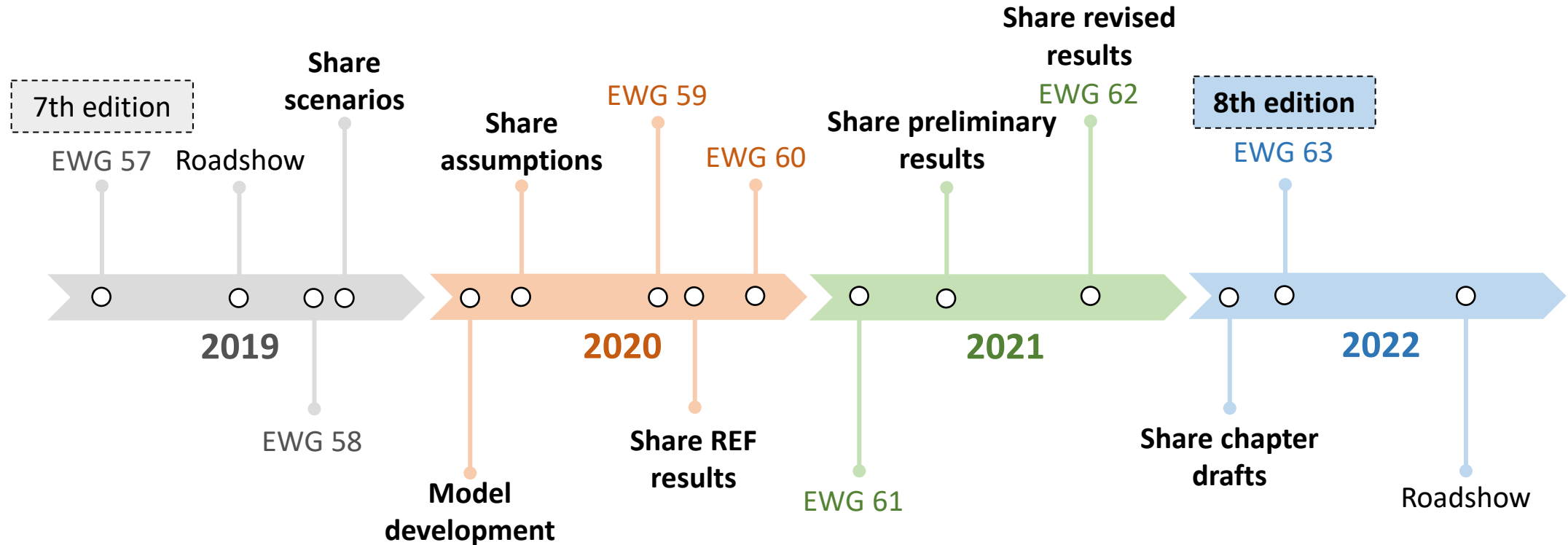


APEC Energy Demand and Supply Outlook

- Published every three years
- 8th edition pending endorsement
- Provides coverage on projected energy demand and supply trends
 - Analysis for each APEC member economy
 - APEC energy goals
- Two volumes
 - Volume 1: APEC-wide trends
 - Volume 2: Economy-specific trends (21 chapters)
- Data tables
- Model methodology



Project timeline



The 8th edition is the product of three-years of planning, analysis, and collaboration by APERC researchers, EWG, and external experts.

New for the 8th edition

- The base year is 2018 and projections run through 2050
- Historical energy balances between 2000 and 2018 are based on EGEDA energy balances
- Macro-economic assumptions are constant across scenarios
 - Population: historical data from World Bank WDI, growth rate projections from UN DESA 2019 Population Prospectus
 - GDP: historical data from World Bank WDI; projections from OECD and internal analysis
- COVID-19 impact on GDP is incorporated in the 2020-2025 timeframe
- Replaced MTOE with petajoules (PJ)
- Emissions analysis considers CO₂ emissions from combustion in the energy sector, excluding non-energy and removals
- The Kaya Identity is introduced to highlight the components of APEC CO₂ emissions

Note: analysis was completed prior to March 2022. The current disruptions in international energy markets, including the impact of the Ukraine Crisis, are not considered in this edition of the Outlook.

Scenarios

	Reference (REF)	Carbon Neutrality (CN)
Definition	Recent trends and current policies.	Hypothetical decarbonisation pathways for each APEC economy.
Purpose	Provides a baseline for comparison with the Carbon Neutrality scenario.	Additional energy sector transformations that support decarbonisation objectives.
Key assumptions	Current policies and trends continue.	Increased levels of energy efficiency, behavioral changes, fuel switching, and CCS deployment.
Limitations	Assumes that recent trends, including relevant decarbonisation measures continue.	Does not consider non-energy impacts on CO ₂ or removal.

Note: does not represent APERC's recommendation or advocacy for a pathway or set of policies.

Components of the APEC energy system

Supply

Production

Domestic production of coal, natural gas, oil, and NGLs.

Energy Trade

Imports and exports of coal, natural gas, oil, refined products, and hydrogen.

Transformation

Power and heat

Production of electricity and heat using fossil fuel, renewable, and nuclear technologies.

Hydrogen

Production using fossil fuels and renewables.

Refining

Production of refined products.

Demand

Buildings

Activities in the residential and services sub-sectors: lighting, heating, cooling, and cooking.

Industry

Activities in the iron & steel, chemicals, aluminium, non-metallics, mining, pulp & paper, and non-specified sub-sectors.

Transport

Passenger and freight activities in the road, rail, marine, and air modes.

Agriculture and others

Agricultural, own-use, non-specified, and other activities.

Non-energy

Production of non-energy goods such as fertilizers and plastics.

Common terminology

Energy demand

End-use demand: buildings, industry, transport, agriculture & others, non-energy

Final energy demand: End-use demand *excluding* non-energy

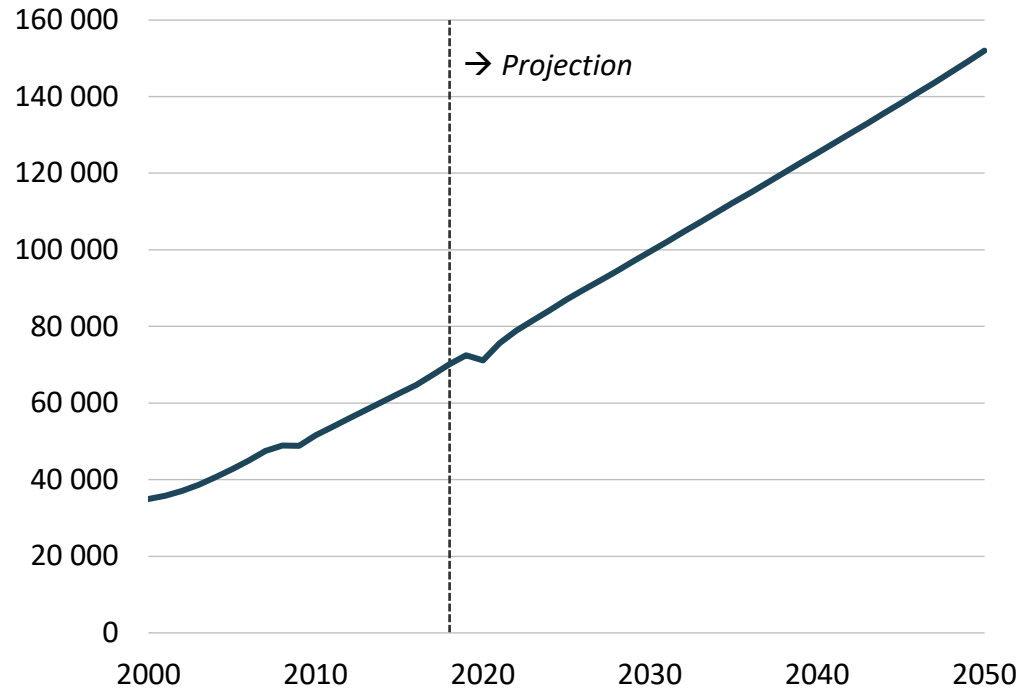
Energy supply

Production + net imports

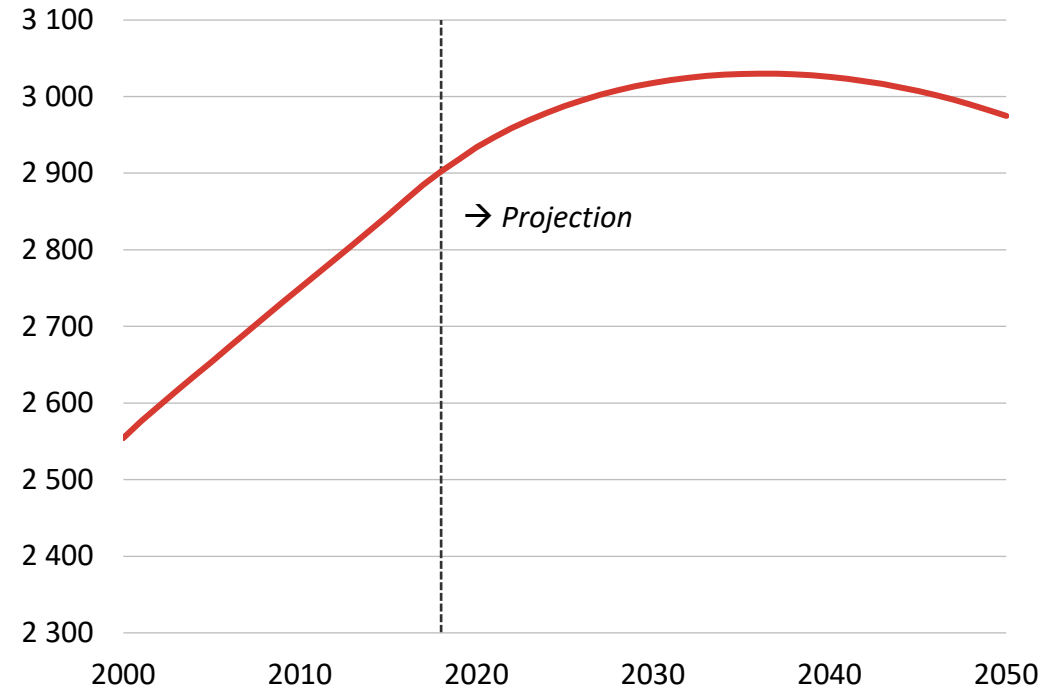
Includes energy needed by power, refining, and hydrogen

Macroeconomic backdrop

GDP in billion 2018 USD PPP, 2000-2050.



Population in millions, 2000-2050.



- Macroeconomic trends are expected to drive energy demand through 2050
- Trends vary by APEC sub-region and economy



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Thank you.

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