

# Introduction to Asia Pacific Energy Research Centre (APERC)

## Workshop on Technology Foresight Scenarios Towards Net-zero Emission and Policy Impact Assessment

28<sup>th</sup> – 30<sup>th</sup> August 2024 – Krabi, Thailand

Thanan Marukatat  
Research Fellow, APERC

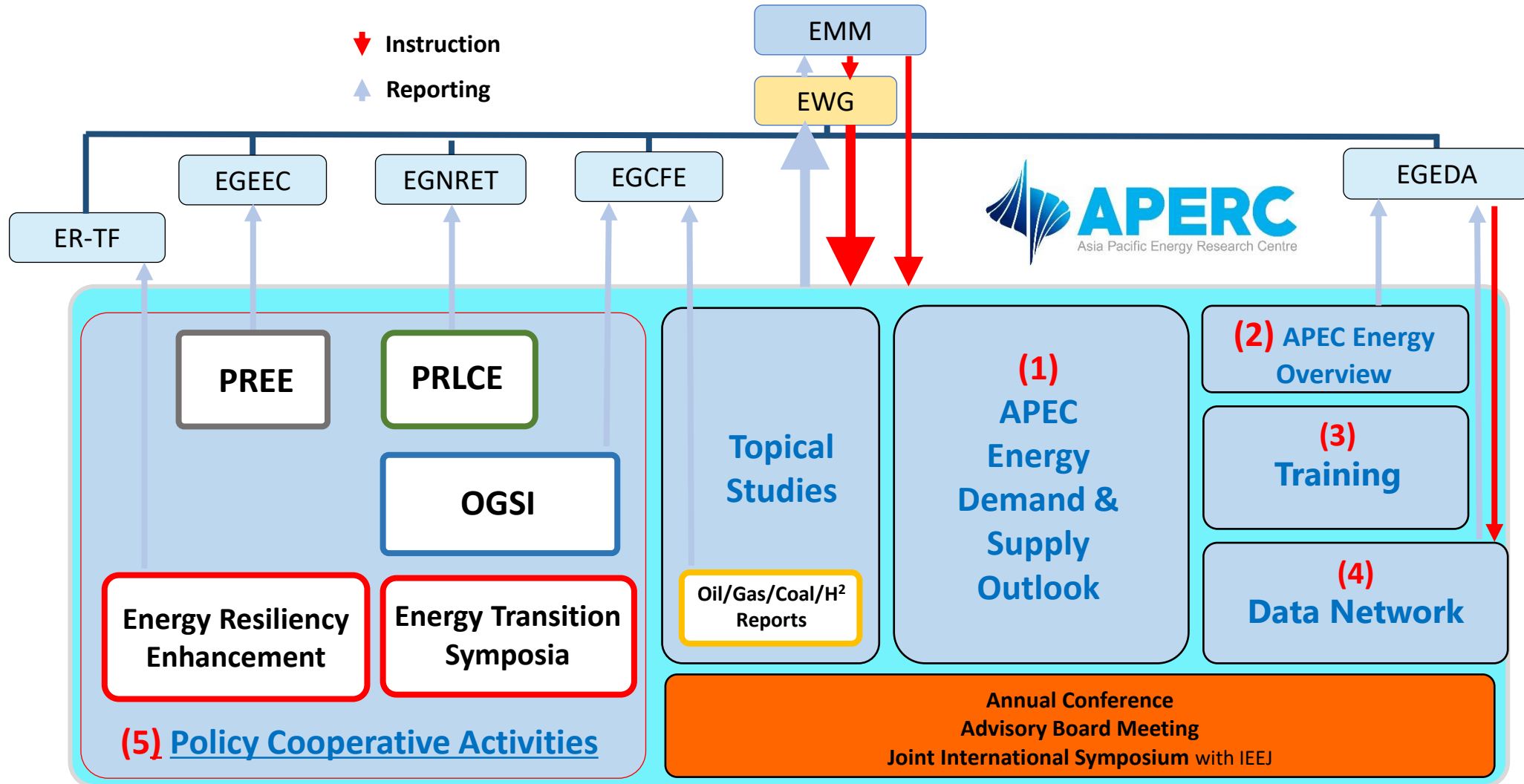


# Asia Pacific Energy Research Centre (APERC)

A research institute to support energy cooperation under APEC.


- ▶ Located in Tokyo
- ▶ Established in 1996
- ▶ Financially supported by the Japanese Government
- ▶ Currently 30 staff, including 16 visiting researchers

# APERC Activities Overview



# (1) APEC Energy Demand and Supply Outlook




  
Asia-Pacific  
Economic Cooperation


**APEC Energy Demand  
& Supply Outlook**  
8<sup>th</sup> edition **2022**

Volume 1

DRAFT.  
FINAL IMAGES MAY CHANGE.

  
Asia Pacific Energy Research Centre




  
Asia-Pacific  
Economic Cooperation

**APEC Energy Demand  
& Supply Outlook**  
8<sup>th</sup> edition **2022**

Volume 2

DRAFT.  
FINAL IMAGES MAY CHANGE.

  
Asia Pacific Energy Research Centre

[APEC Energy Demand and Supply Outlook \(8th Edition\) - Volume I | APEC](#)

# (2) APEC Energy Overview



**APEC ENERGY OVERVIEW 2023**

# (3) Energy Model Training at APERC in Tokyo.



# Capacity Building in Energy Modeling: Malaysia (June 2024)




# (4) Data Collection and Network



## 6B. Hydrogen and proposed data collection format

32<sup>nd</sup> Meeting of the APEC Expert Group on Energy Data and Analysis (EGEDA)  
Hosted by China; 12-13 October 2021

Edito BARCELONA, ESTO/APERC





# Proposed trial data collection format

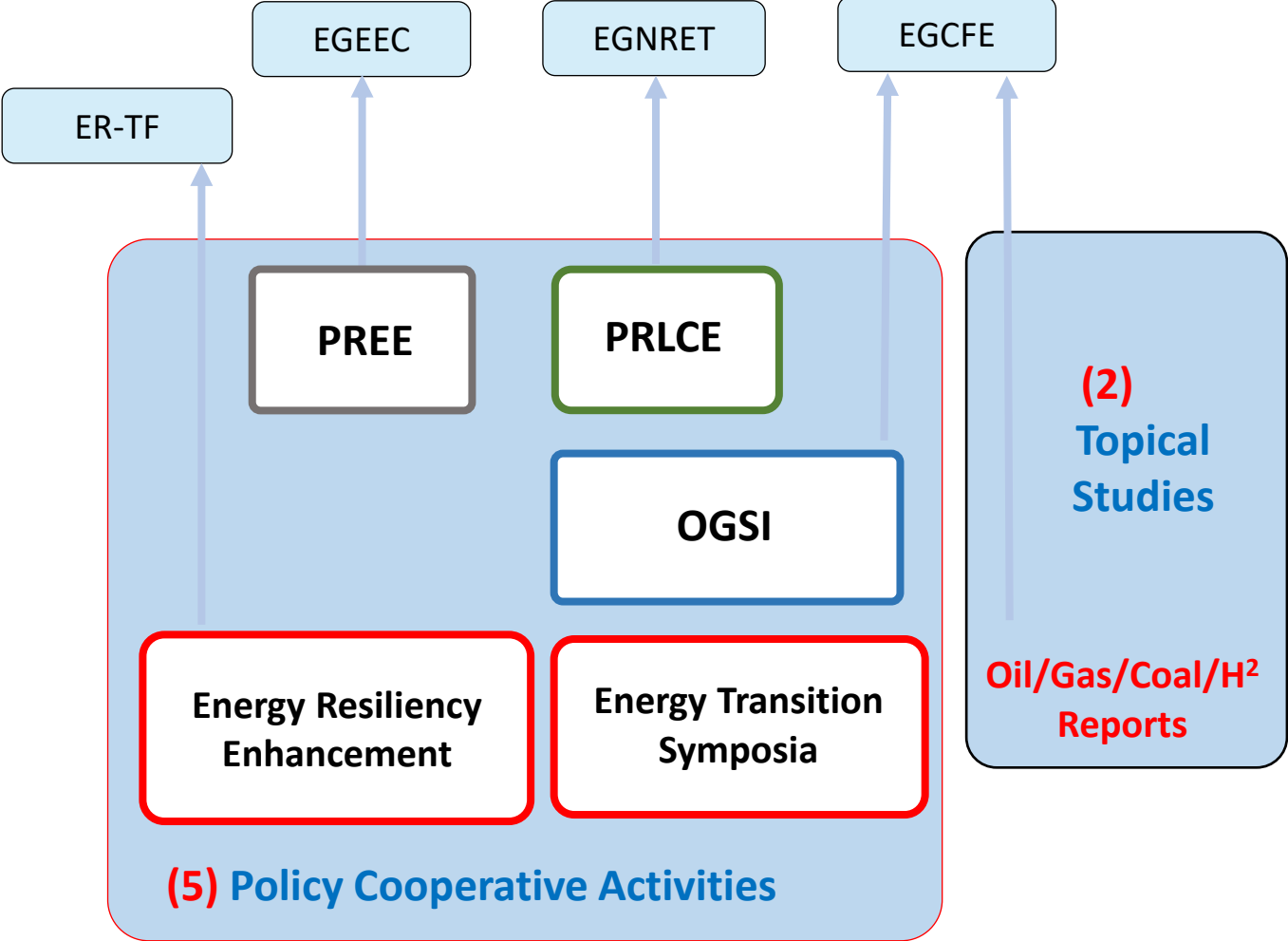
## APEC format for annual Hydrogen data

Table 1a. Production and supply

Unit: Terajoules

		Hydrogen	Ammonia	Methyl-cyclohexane	Total
		A	B	C	D
<b>PRODUCTION</b>	1	0	0	0	0
<b>Thermal process</b>	2	0	0	0	0
Natural gas reforming	3				
Petroleum products reforming	4				
Coal gasification	5				
Biomass gasification	6				
Biofuels reforming	7				
<b>Electrolytic processes</b>	8	0	0	0	0
Electricity from renewables	9				
Electricity from non-renewables	10				
<b>Other processes</b>	11	0	0	0	0
Solar-driven processes	12				
Biological processes	13				
Imports	14				
Exports	15				
International marine bunkers	16				
International aviation bunkers	17				
Stock change (opening-closing)	18	0	0	0	0
Gross inland deliveries (calculated)	19	0	0	0	0
Statistical difference (+ or -) (11 minus 13)	20	0	0	0	0
Gross inland deliveries (observed)	21	0	0	0	0
<b>Stocks</b>					
Total stocks in national territory- opening	22				
Total stocks in national territory- closing	23				

# (5) Policy Cooperative Activities and Expert Groups



# EWG 67th Meeting

## **Policy Dialogue Workshop Agenda:** **Green and Low-Carbon Hydrogen** as an Enabler of the Energy Transition Policy Dialogue (24 February 2024)

24 February 2024 – 26 February 2024

Lima, Peru



EWG 67th  
Lima, Peru  
Feb. 2024

# APERC Clean Hydrogen Workshop Photos



# EWG 68<sup>th</sup> Statement

## Aug. 2024, Lima, Peru.

### APEC Intensifies Cooperation in Low-Carbon Hydrogen as Clean Energy Carrier

Issued by the APEC Energy Working Group  
Lima, Peru | 13 August 2024



- APEC member economies are intensifying cooperation to harness the power of **clean and low-carbon hydrogen** as a key component of the region's sustainable energy future.
- Need for **harmonized regulatory frameworks and innovative financing mechanisms** to drive the adoption of hydrogen technologies
- Taking into account the stages of the sector's value chain: **transport and electricity generation**

**Thank you.**

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

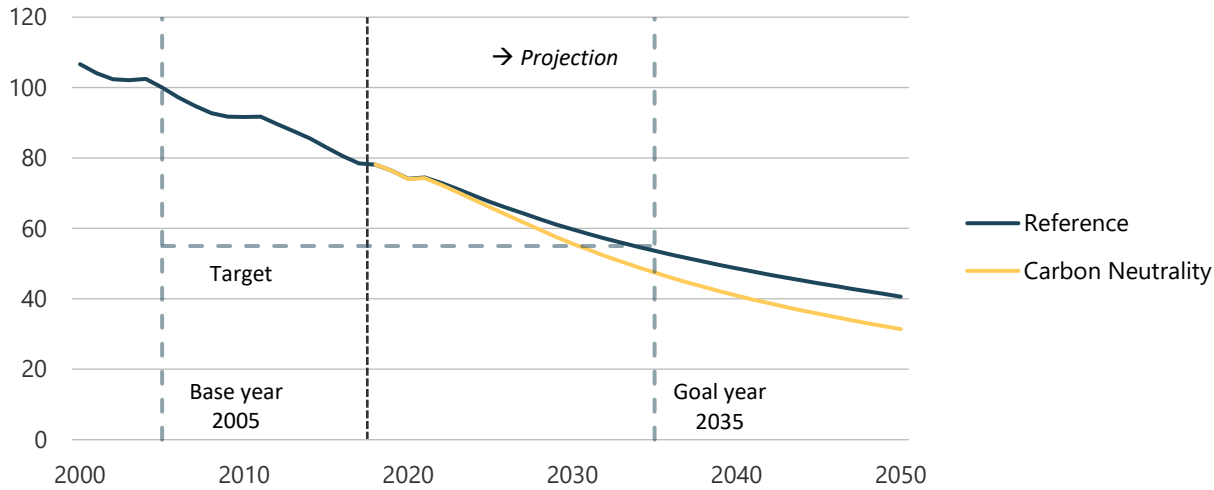


# Outline

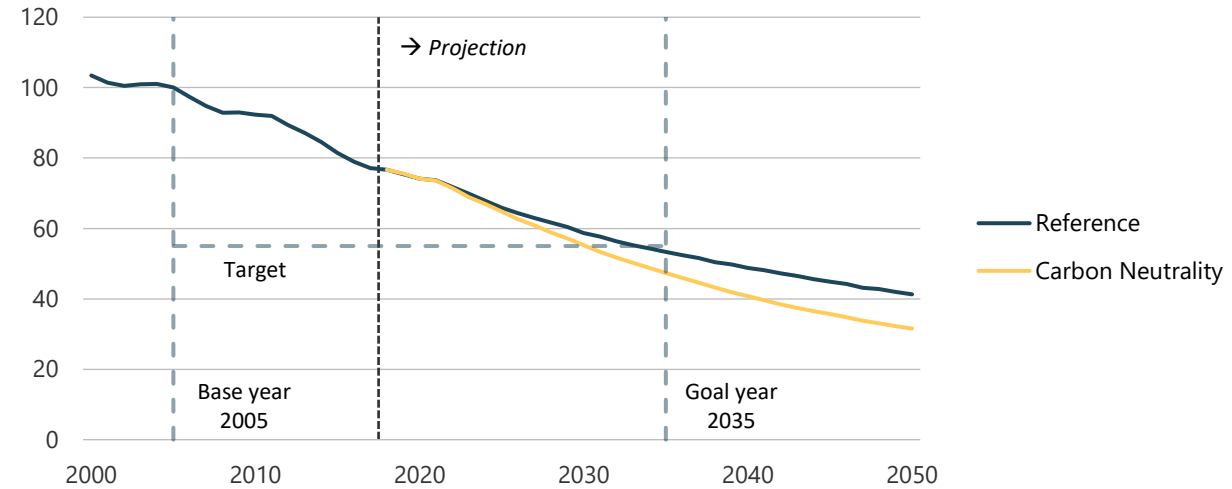
- Introduction to Asia Pacific Energy Research Centre (APERC)
- Activities:
  1. APEC Energy Outlook
  2. Research
  3. Training
  4. Data Management
  5. Policy Cooperative

# APEC Energy Goals: Energy intensity and Modern renewable energy share

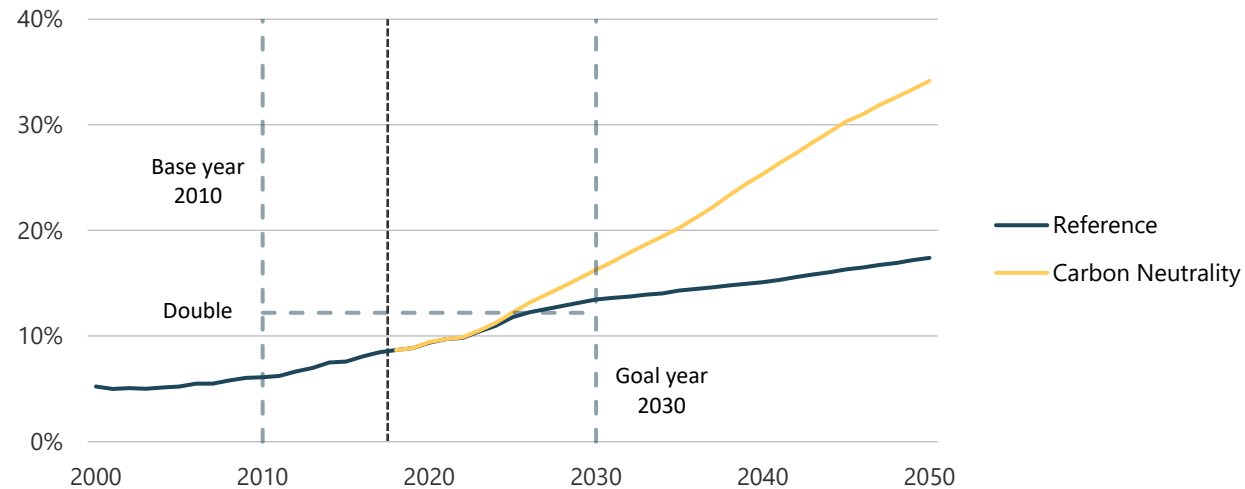
**Final energy intensity in REF and CN (2005=100).**



**Energy supply intensity in REF and CN (2005=100).**



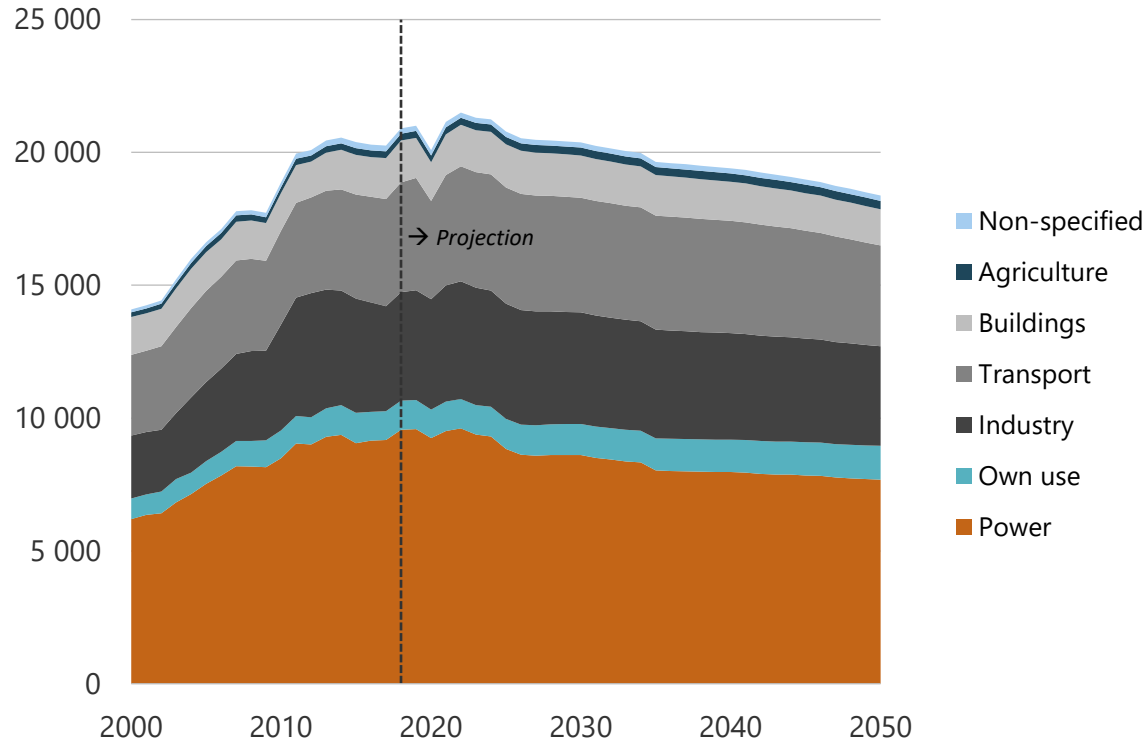
**Modern renewable energy share in REF and CN, 2000-2050.**



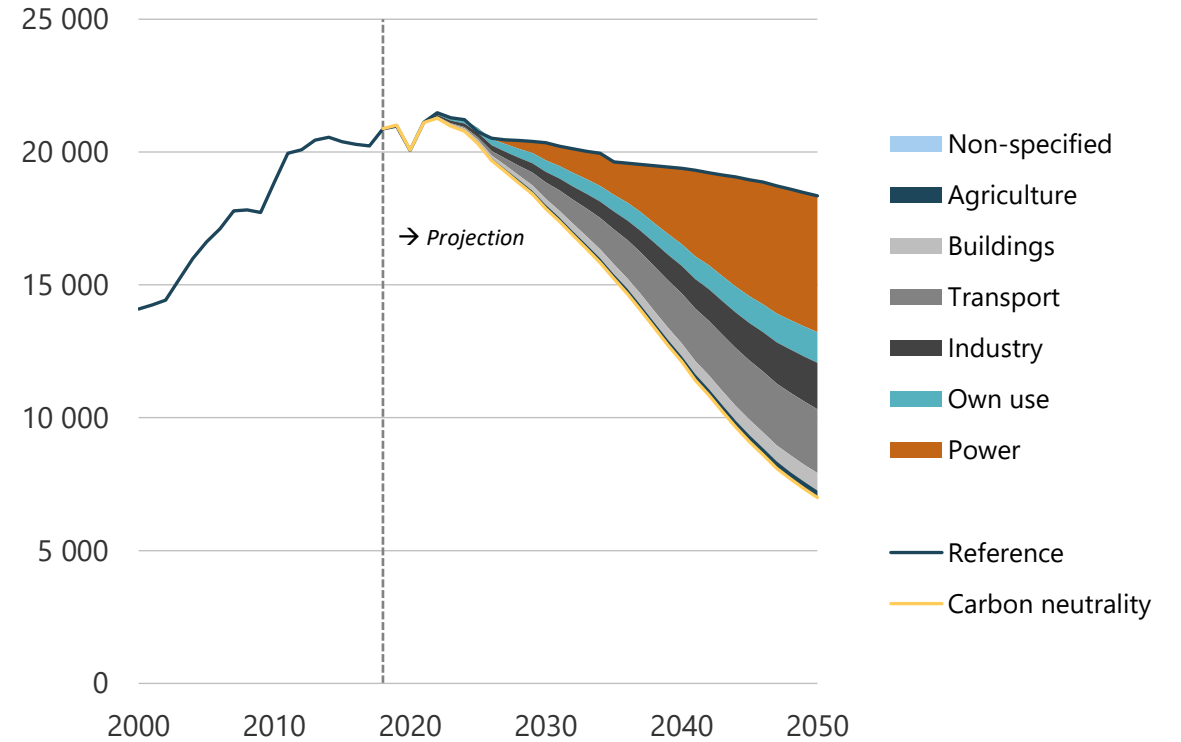


# APEC-wide gross CO<sub>2</sub> emissions

Gross CO<sub>2</sub> emissions in reference scenario, 2000-2050 (million tonnes).



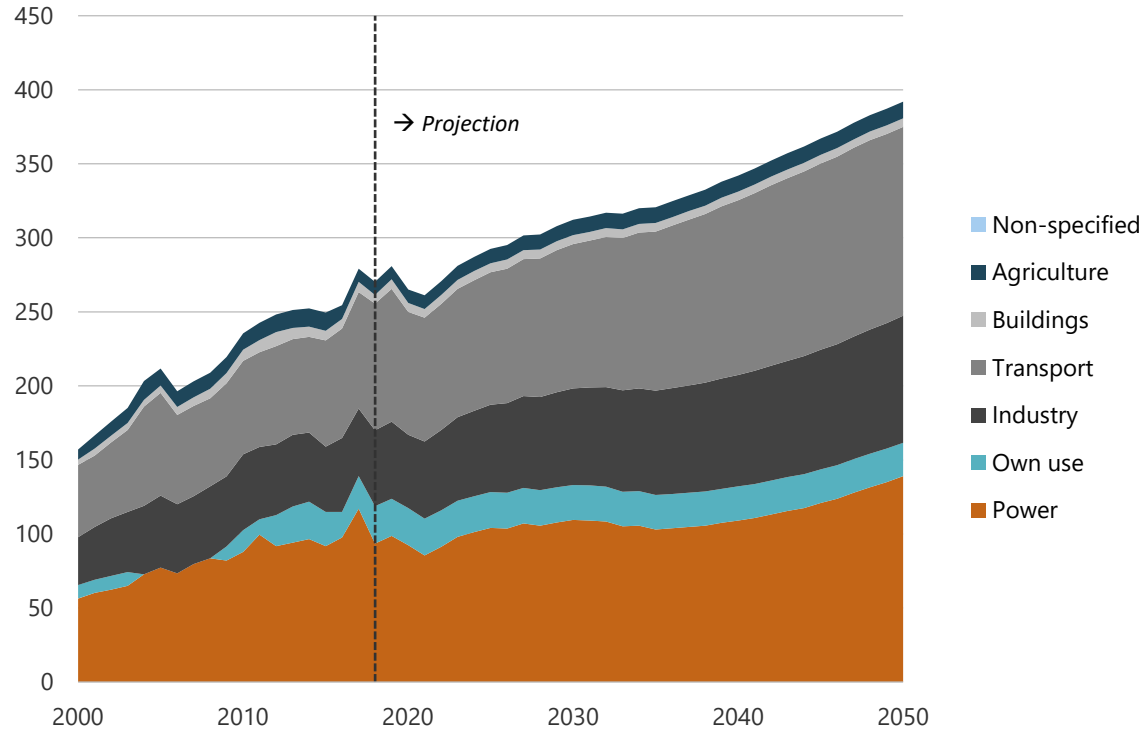
Change in gross CO<sub>2</sub> emissions, Target scenario, 2000-2050 (million tonnes).



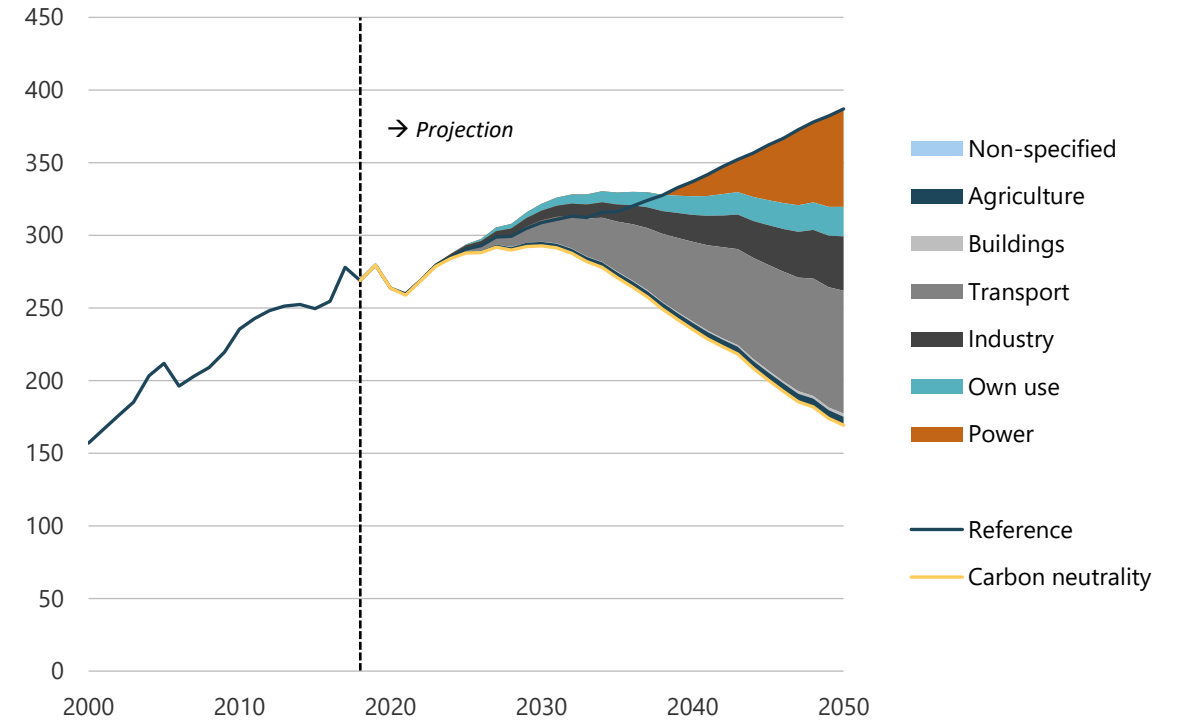
- APEC 8<sup>th</sup> Outlook saw declining emissions towards 2050
  - ▶ 18 000 million tonnes in REF scenario, reduced to 7 000 million tonnes in TGT scenario.
  - ▶ Half of the reduction was contributed from power sector.

# Thailand gross CO<sub>2</sub> emissions

Gross CO<sub>2</sub> emissions in reference scenario, 2000-2050 (million tonnes).



Change in gross CO<sub>2</sub> emissions, target scenario, 2000-2050 (million tonnes).



- 380 million tonnes in REF, reduced to 170 million tonnes in TGT.