Asia-Pacific Economic Cooperation

APERC Asia Pacific Energy Research Centre

EGEDA updates

The Joint Meeting of the Four Expert Groups of the APEC Energy Working Group

9 April 2025 – Hong Kong, China

Mr Glen SWEETNAM
Chair, EGEDA

Outline

- Data collection and processing update
- APEC energy demand and supply trends
- Tracking the APEC energy goals
- EGEDA training courses and workshops
- International cooperation activities
- Conclusions

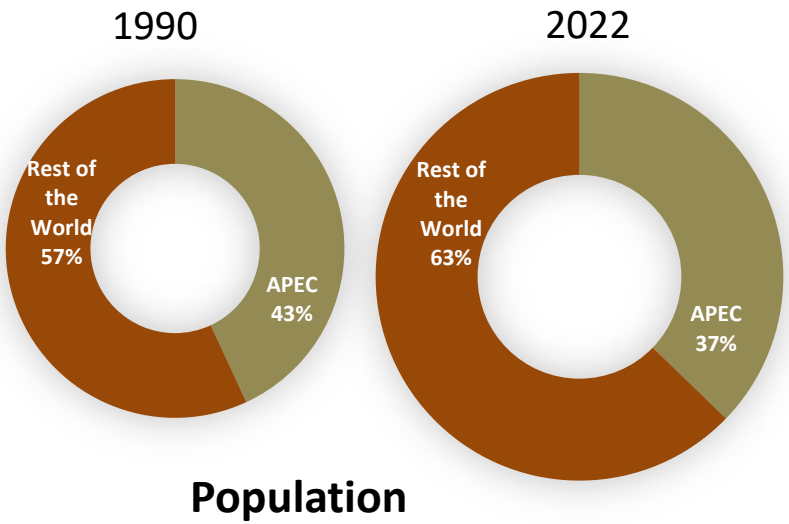
Data collection and processing update

Regular APEC energy data collection

- The secretariat has completed the collection and processing of the **2022 annual energy supply and demand data.**
  - The **APEC Energy Statistics 2022,** which will be published **online,** and the **APEC Energy Handbook 2022,** which will be printed, are now being drafted. The target publication date is 30 April 2025.
  - The secretariat requested 2023 annual energy supply and demand data from member economies by 31 March 2025. To date, the Secretariat has received 2023 data from 5 economies.
- Other data collection
  - Annual energy prices
  - Annual GHG emissions
    - CO_2, CH_4 and N_2O emissions from energy combustion and fugitive emissions
    - CO_2 transported and stored
  - Energy efficiency indicators
  - Monthly oil and gas supply and demand (JODI)
  - Quarterly energy supply
  - Major economic indicators
  - Energy-related indicators

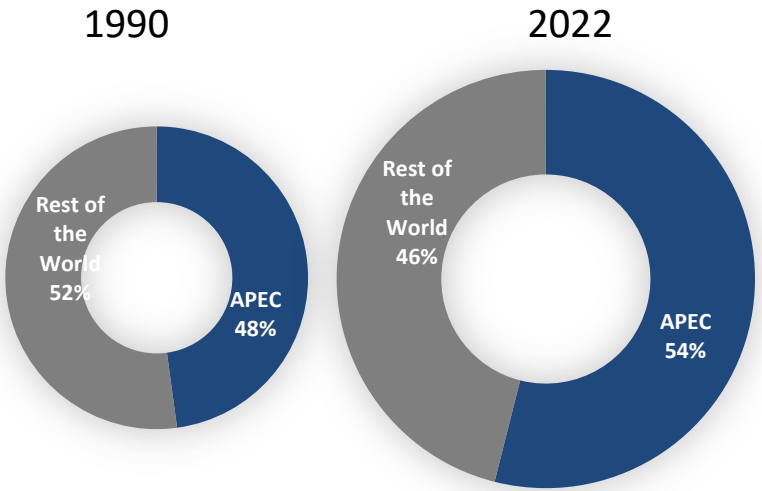
APEC energy demand and supply trends

Comparing APEC and the rest of the world

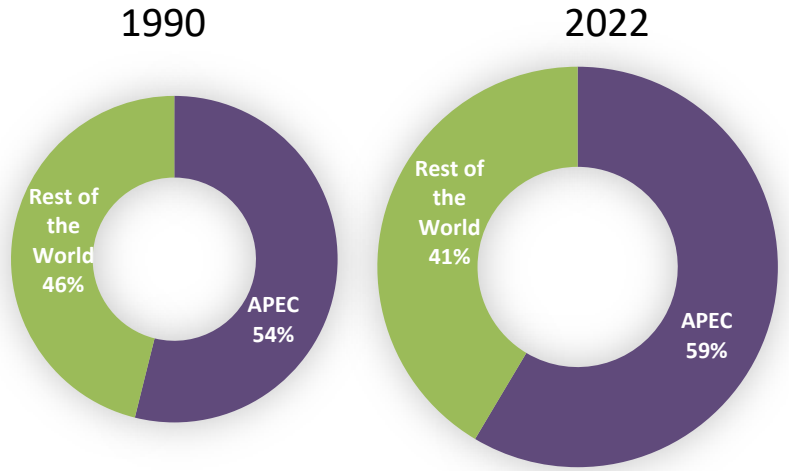


Population

- APEC's population grew at a compounded annual growth rate (CAGR) of 0.8% per year resulting in decreased share of the world's population from 43% in 1990 to 37% in 2022.
- On the other hand, APEC's GDP (constant 2021 PPP) grew at a CAGR of 3.5% increasing its share of the world's total from 43% in 1990 to 54% in 2022.
- APEC's primary energy supply grew at a CAGR of 2.0% resulting in an increased share of the world's total from 54% in 1990 to 59% in 2022.

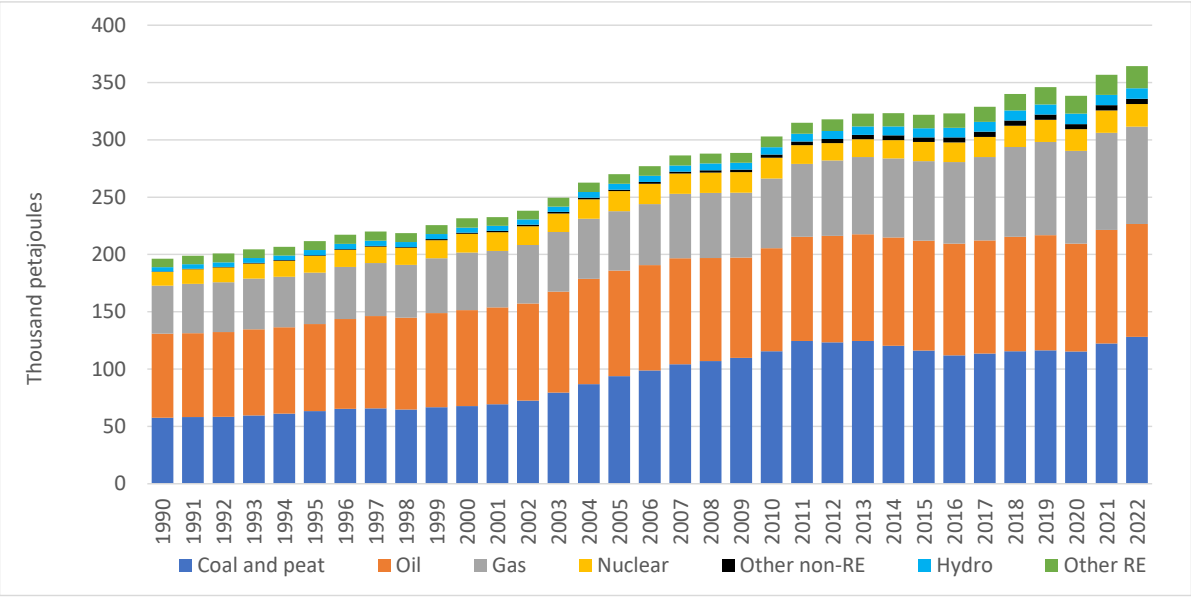


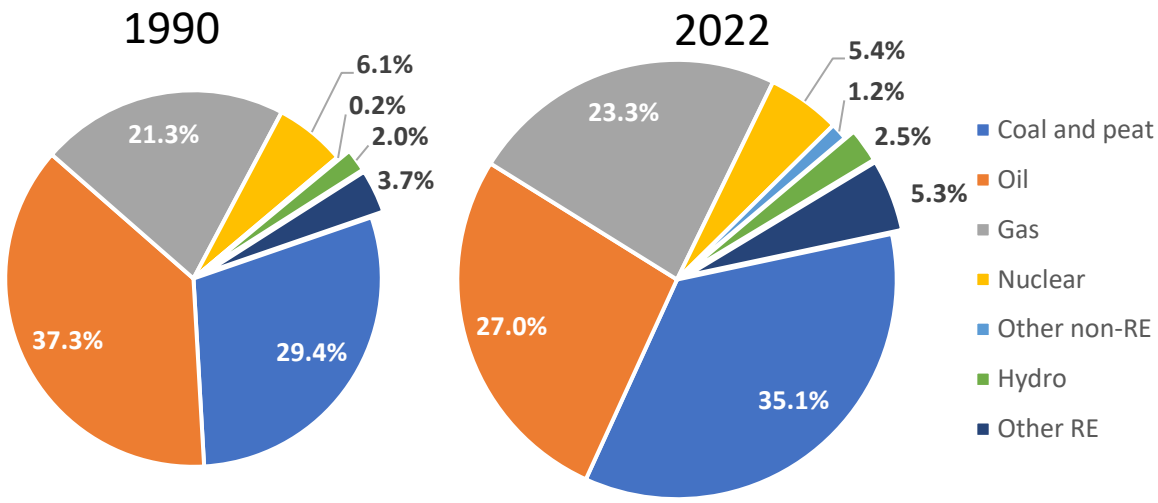
Gross domestic product



Primary energy consumption

APEC energy use has returned to a pre-pandemic trajectory





- Despite the 2.2% decrease from 2019 to 2020 due COVID-19 lockdowns, APEC's energy supply has returned to its pre-pandemic trajectory.
- Coal's share of total primary energy supply increased from 29.4% in 1990 to 35.1% in 2022.
- Oil and natural gas continued as major energy sources.
- The share of renewables in primary energy supply (including hydro) increased from 5.7% in 1990 to 7.8% in 2022.

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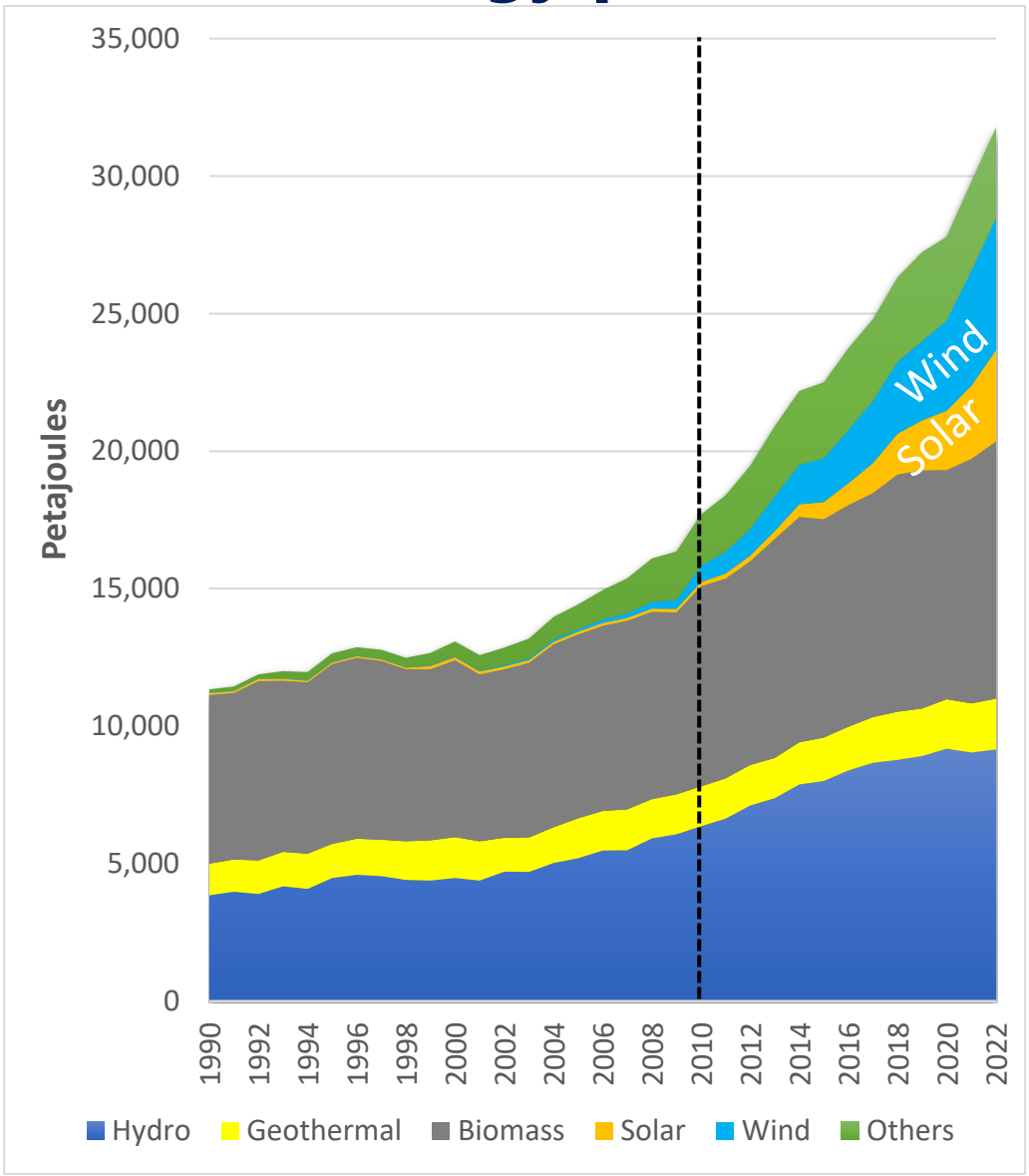
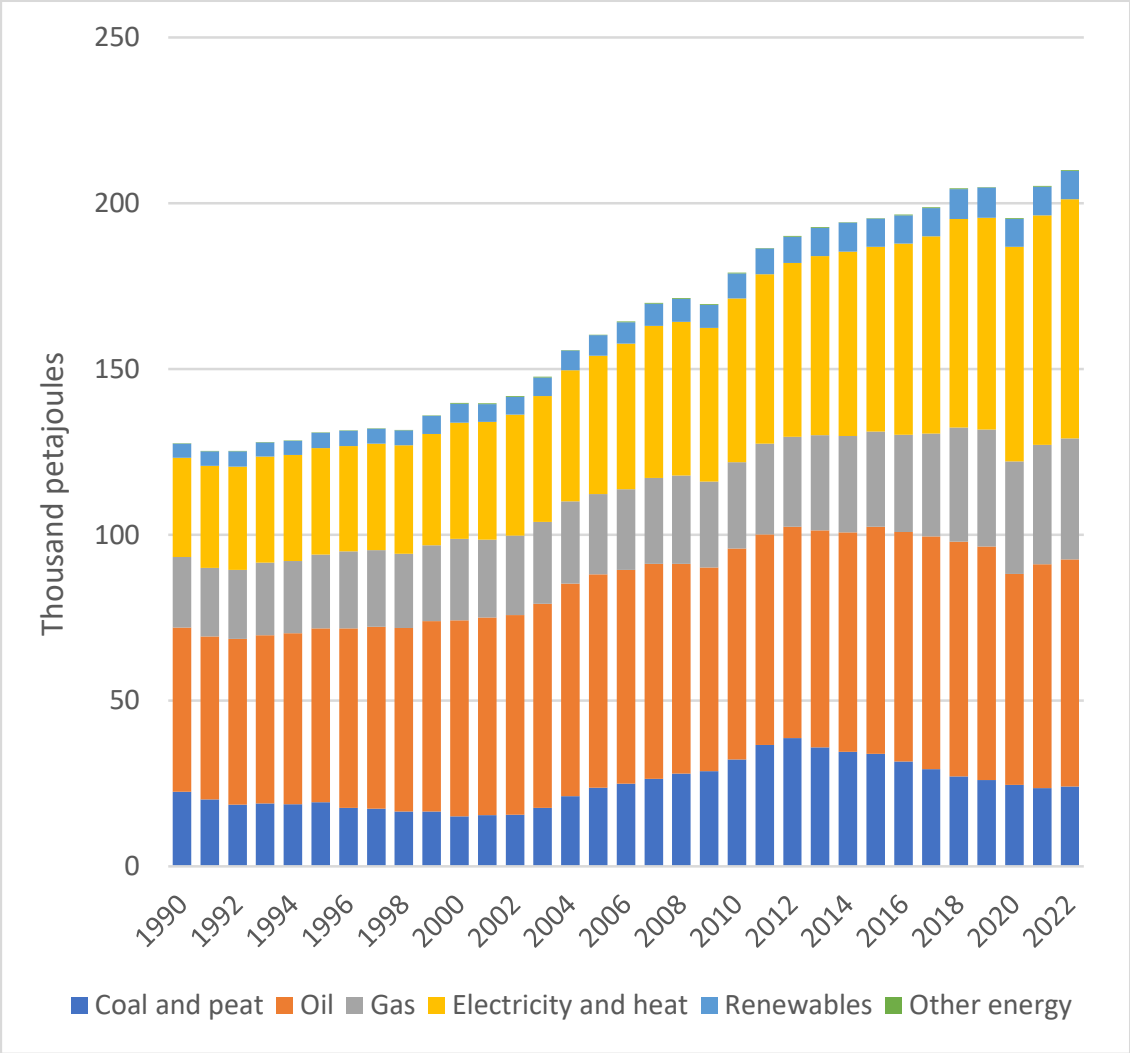
Renewable energy production in APEC is accelerating



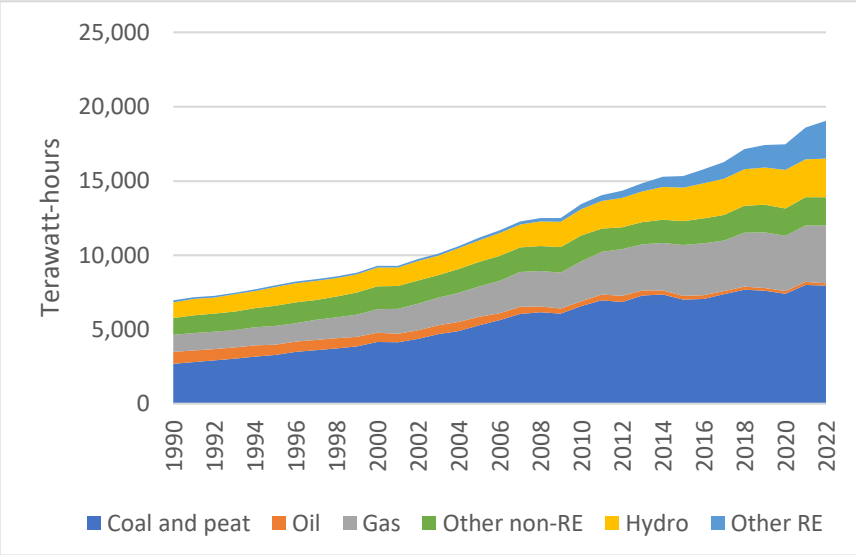
- For renewable energy production, the compound annual growth rate (CAGR) from 1990 to 2022 was 3.3% per year.
- From 2010 (which is the reference year of the APEC RE doubling goal) to 2022, the CAGR increased to 5.0% per year.
- Among renewable energy sources, solar and wind energy production had the fastest growth rates at 29.0% and 19.2%, respectively, during the same period.
- Hydro, geothermal, biomass, and other RE had CAGRs of 3.1%, 2.0%, 2.1% and 4.8%, respectively.

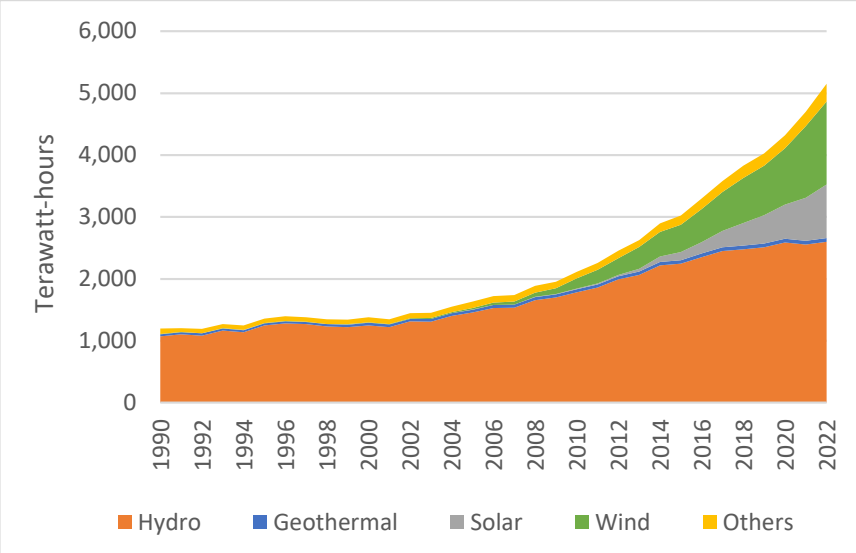
Final energy consumption by energy



- Like energy supply, the growth of final energy consumption returned to pre-pandemic trajectory despite the 4.6% decrease in 2020.
- From 1990 to 2022, the CAGR of final energy consumption was 1.6% per year.
- The fastest growth rate during that period was in electricity and heat consumption at 2.8%.
- However, the CAGRs of coal and oil consumption post-pandemic are lower than pre-pandemic: 0.2% per annum (from 0.5%) and 1.0% (from 1.2%), respectively.
- Final energy consumption of renewable energy had a CAGR of 2.2% from 1990 to 2022.

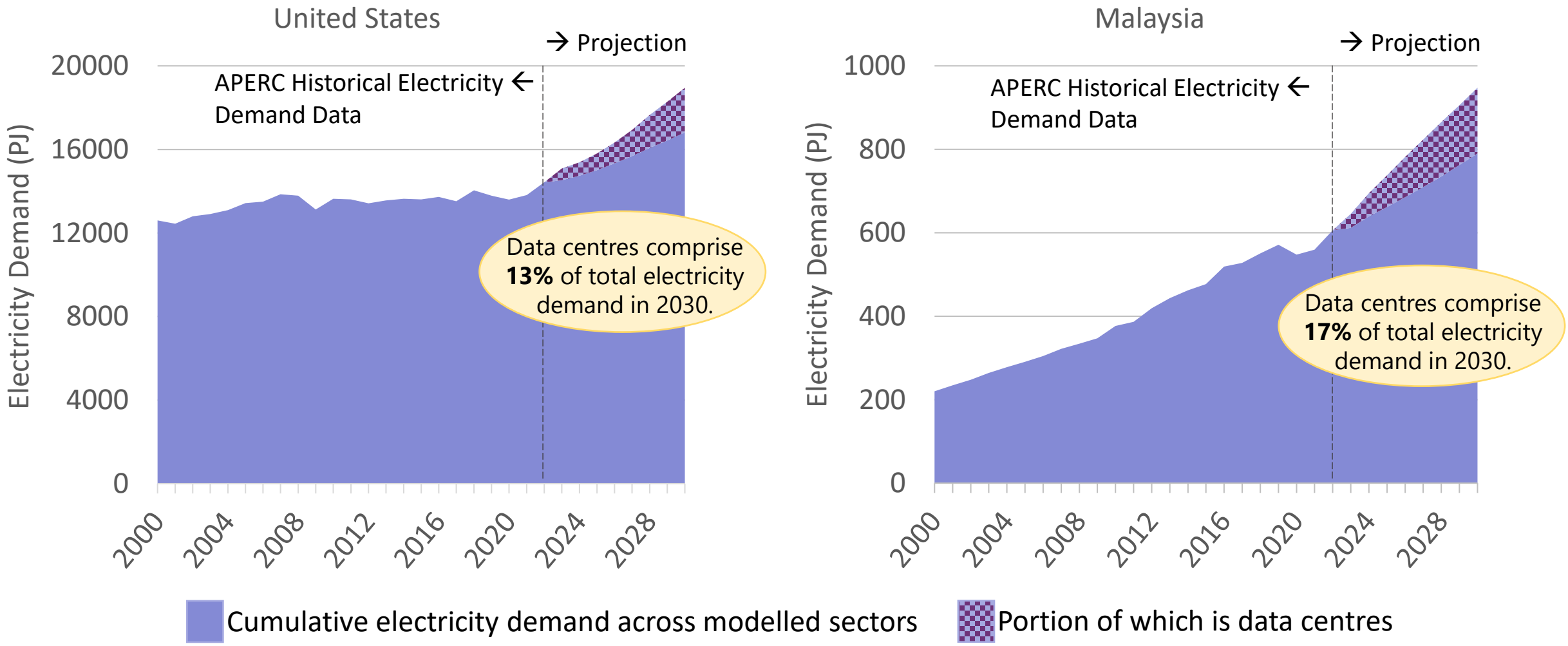
Electricity generation is growing but the mix is shifting





- The growth of electricity generation also returned to the pre-pandemic trajectory of 3.2% per year.
- However, the CAGR of electricity from coal and gas moderated to 3.4% (from 3.6%) and 3.9% (from 4.2%), respectively.
- Electricity generation from solar and wind increased at CAGRs of 24.7% and 20.9% per annum from 1990 to 2022.
  - Solar power production grew even faster from 2010 to 2022 with a CAGR of 46.3%.
- Hydro, geothermal and other RE had slower CAGRs of 2.8%, 2.2%, and 3.7%, respectively from 1990 to 2022.

Early indications that electricity growth may be accelerating



Preliminary 9th edition target scenario results.
Subject to revision. Do not distribute.

Tracking the APEC energy goals

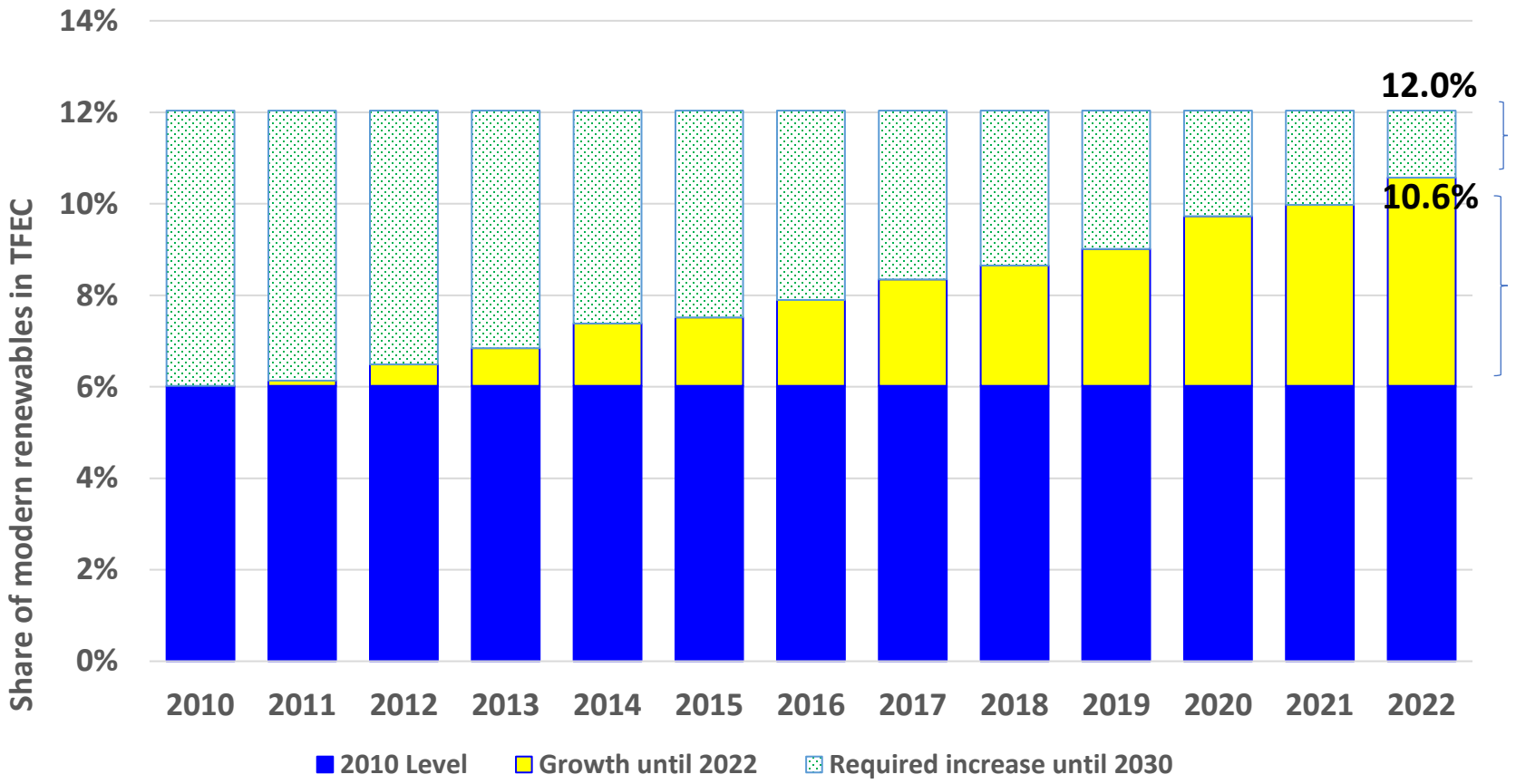
APEC's final energy intensity continues to decline

Annual change in APEC final energy intensity, 2006-22

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2005-22
Change in Final Energy Consumption (FEC)	2.5%	3.5%	0.8%	-1.0%	5.6%	4.2%	1.9%	1.4%	0.8%	0.6%	0.5%	1.2%	2.8%	0.2%	-4.6%	5.0%	2.3%	30.9%
Change in GDP (PPP, constant 2021 US dollars)	5.3%	5.5%	3.0%	-0.3%	5.7%	4.2%	4.2%	3.9%	3.8%	3.7%	3.4%	4.0%	4.1%	3.4%	-1.3%	6.2%	2.5%	82.3%
Change in final energy consumption intensity	-2.7%	-1.9%	-2.1%	-0.7%	-0.1%	0.0%	-2.2%	-2.4%	-2.9%	-2.9%	-2.8%	-2.8%	-1.3%	-3.1%	-3.3%	-1.2%	-0.2%	**-28.2%**

- *GDP growth in 2022 was lower than all except two years since 2006.*
- *The drop in energy intensity was also considerably less than the historical average.*
- *We still expect APEC to meet its energy intensity goal by 2035.*

APEC is close to meeting its renewable energy doubling goal

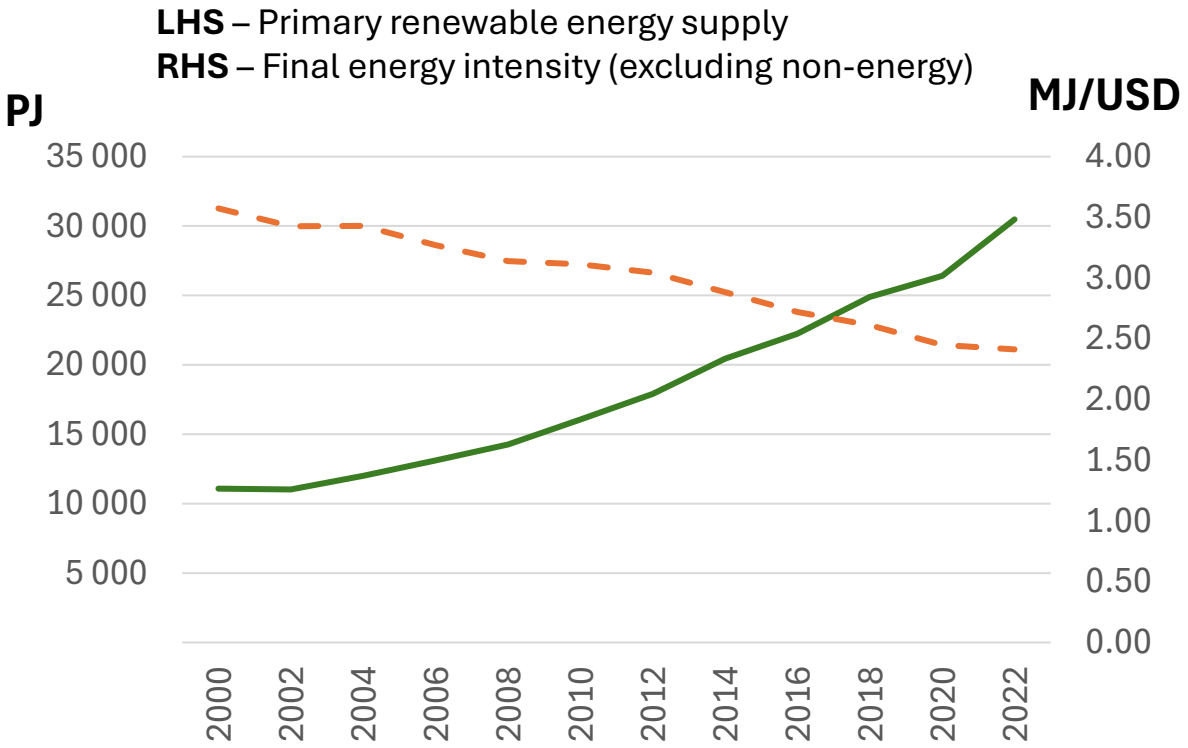


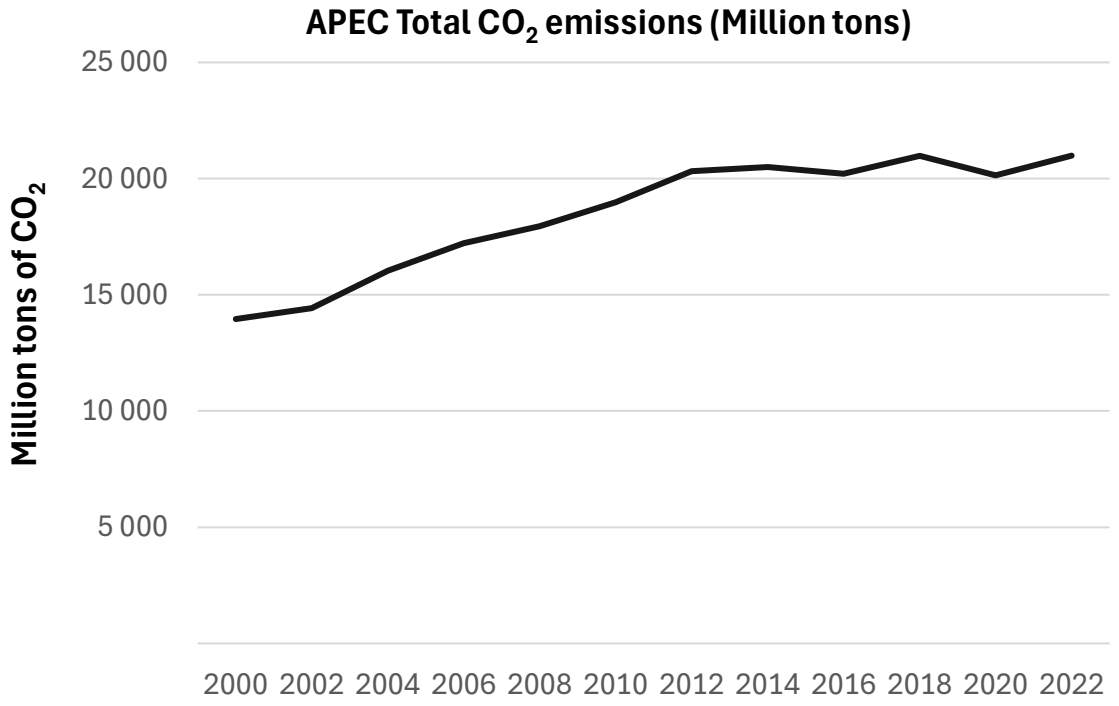
1.4 percentage point needed by 2030

A 4.6 percentage point increase since 2010

- *APEC's goal is to reach a 12.0% renewable share by 2030.*
- *By 2022, APEC had already reached a 10.6% renewable share, so we only need a 1.4% percentage point increase in share by 2030 to meet the doubling goal.*

The energy transition quandary





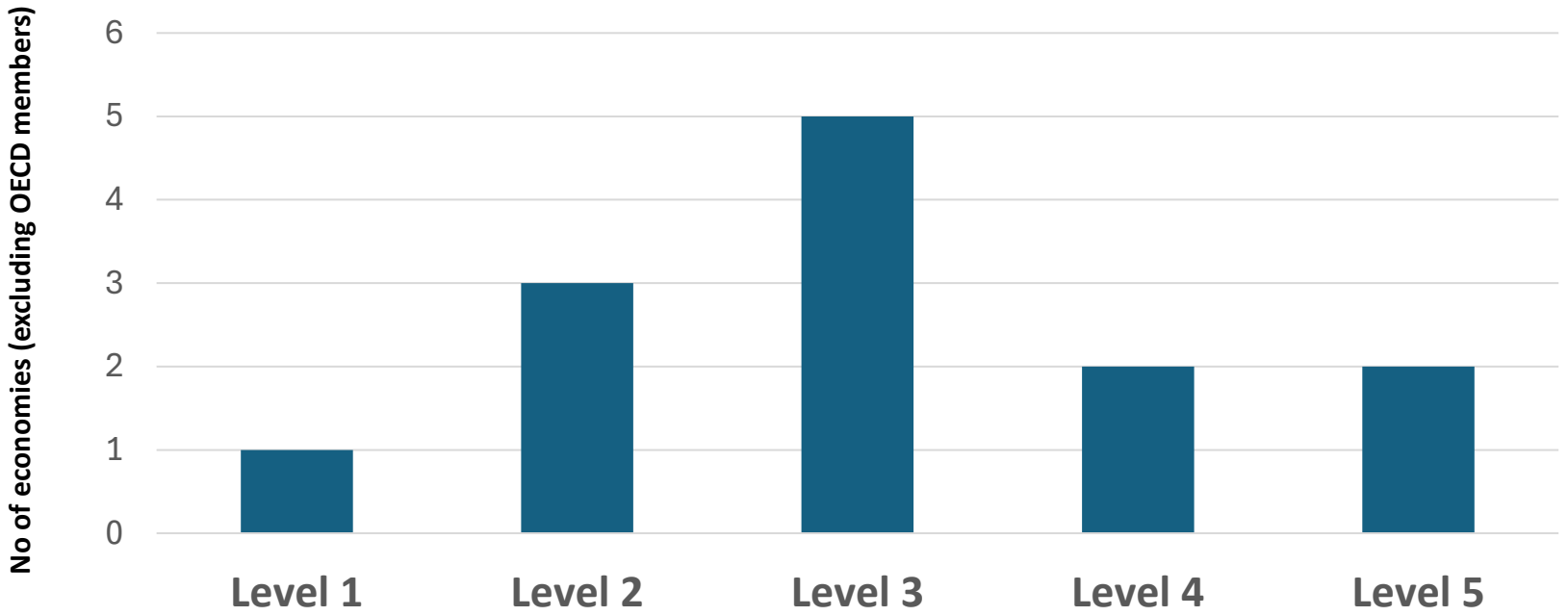
- *APEC energy intensity continues to decline and the growth in renewable energy supply is accelerating.*
- *APEC is on track to meet or exceed its energy intensity and renewable energy goals, yet from 2012 to 2022, CO_2 emissions have remained relatively constant.*

EGEDA training courses and workshops

Performance levels for collecting/reporting energy statistics

Level	Performance
0	• Economy does not submit annual energy data to the EGEDA Secretariat • EGEDA Secretariat relies on **energy balances provided by other organizations**
1	• Economy collects energy production data for administrative purposes (e.g., managing private oil and gas companies) • Electricity data (only that collected by the state electricity company); no estimates of renewable energy production • Economy **does not compile energy statistics/balances**; does not complete APEC annual energy collection templates.
2	• Collects energy data from administrative sources; energy balances are incomplete • Energy consumption **data are aggregated and limited to major sectors** (i.e., industry, transportation, buildings, etc.) • Economy does not complete the APEC annual energy data collection templates
3	• Collects energy data from administrative sources; energy balances are incomplete • Some energy consumption data are categorized by subsectors; **no end-use data** • Does not complete the APEC annual energy data collection templates
4	• Collects energy data from administrative sources; energy balances are largely complete • Energy consumption data are broken down into subsectors • Conducts end-use energy consumption surveys; but does not submit end-use data in the APEC EEI template • **Completes the APEC annual energy data collection templates**
5	• Collects energy data from administrative sources; prepares complete and accurate energy balances • Categorizes energy consumption data by subsector • **Conducts end-use energy consumption surveys**; submits end-use energy data in the APEC EEI template • Completes the APEC annual energy data collection templates

APEC members have a wide range of collection and reporting capabilities



- *Majority of the members are not able to complete the APEC annual energy data collection templates.*
- *Most of the data submitted do not reflect the preferred degree of granularity for energy use (fuel by end-use).*

22nd APEC workshop on energy statistics

- **Date:** 23-26 July 2024
- **Theme:** Tracking the progress of capacity built from the last workshops
- **Participants:** 24 persons from 14 economies participated (9 persons online)

  IRENA in-person, 4 speakers from IEA online
- **Objectives**
  - The workshop's main objective was to provide knowledge on the new energy data and statistics required to monitor the energy sector during the energy transition.
  - The workshop enhanced the participants' ability to apply the methodologies and techniques learned from previous workshops in the collection of data such as:
    - new energy products and technologies,
    - energy efficiency indicators, and
    - new and renewable energy data and statistics.
  - The workshop facilitated dialogues on the issues and challenges encountered in collecting these data and statistics through economy presentations and roundtable discussions.

Energy statistics course (Held in Tokyo)

- **10-21 February 2025**
  - No. of economies – 8 (INA; MAS; PNG; PHL; SGP; CT; THA; VN)
  - No. of participants – 11
  - Trainers - EGEDA secretariat
- **Objectives**
  - Increase the capacity of energy statisticians in APEC economies
  - Keep the members up-to-date with new developments in energy statistics.
  - Enhance the human resource network between APEC economies and APERC
  - Increase the level of understanding of the APEC energy database by APEC economies
  - Introduce world trends in energy statistics to APEC economies
  - Improve the reliability of the APEC energy database

23rd APEC workshop on energy statistics

- **Date:** September 2025
- **Theme:** Conducting an end-use energy consumption survey
- **Objectives**
  - The topic of the workshop will be the preparation of instruments for end-use energy consumption surveys and will include:
    - Discussion on sampling methodologies
    - Preparation of survey questionnaire and enumerators' manual
    - Discussion on the conduct of a pilot survey

International cooperation

Secretariat's participation in international meetings

1. **JODI Inter-secretariat working group meetings on 5 December 2024 and 13 March 2025**
2. **Task Team for the Revision of Standard International Energy Classification (TT-SIEC) under International Energy Statistics Working Group (InterEnerStat)**
   - ❑ Discuss revisions to SIEC with the ongoing revisions of Central Product Classification (CPC) and International Standard Industrial Classification (ISIC).
   - ❑ Limited Progress to date.
     - IEA, EUROSTAT and UNSD has proposed the revisions to the Standard International Energy Classification (SIEC).
     - The EGEDA secretariat supported the proposed revisions.
     - Hydrogen and ammonia will be classified under synthetic fuels, removing it from "Other hydrocarbons".
     - The inclusion of district cooling, which the EGEDA secretariat proposed is now part of the revised SIEC and now called "Cold" and covers not just district cooling.
     - The last five meetings were held on 10, 27 and 31 January, 7 February and 8 April 2025.
3. **IEA workshop on end-use data/efficiency indicators in Southeast Asia on 10-12 June 2025**

Conclusions

Conclusions

- APEC's population is growing slower, but its income and energy use is growing faster that the rest of the world.
- APEC's energy growth rates have returned to pre-pandemic levels, and there are early indications that energy growth is accelerating.
- APEC is on track to meet both its energy intensity and renewable energy goals, but total CO_2 emissions are not declining.
- Many APEC economies need to improve their data collection and reporting capabilities. EGEDA will continue to hold energy statistics training courses and workshops as one part of an effort to improve these capabilities.
- The EGEDA secretariat will continue to cooperate with other energy organisations on energy statistics to ensure international definitions and reporting standards meet the needs of APEC member economies during the energy transition.

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Thank you.

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