

APERC Research Activities

35th Meeting of APEC Expert Group on Energy Data and Analysis

17-19 January 2024

Glen Sweetnam

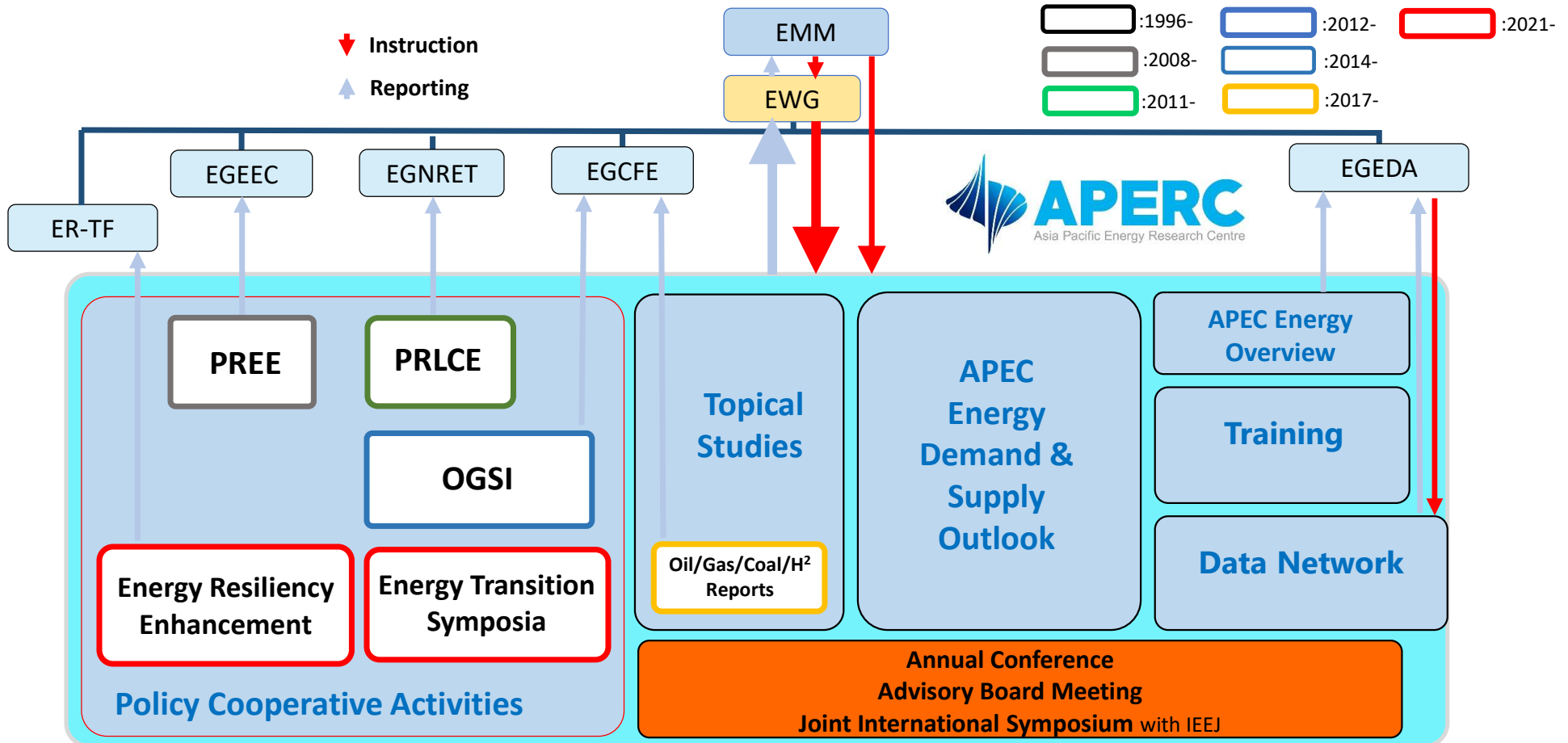
Senior Vice President, APERC



Outline

1. Overview of APERC Activities
2. Policy Cooperative Activities
3. Topical Studies
4. APEC Energy Demand and Supply Outlook

Overview of APERC Activities



PREE, PRLCE

□ Peer Review on Energy Efficiency (PREE)

- The **7th EEP workshop** on “Electrification and Energy Efficiency” was held in conjunction with EGEEC 61 and EGNRET 59 in October 2023 in the Philippines. 22 participants from 9 economies attended the workshop discussing and exchanging the issues on energy efficiency and electrification toward a decarbonized power system. Its summary report is expected to be published in April 2024.
- The Project Proposal of **Follow-up PREE for Chile** and the **8th EEP workshop** was endorsed by EWG and they will be held in 2024.

□ Peer Review on Low Carbon Energy Policies (PRLCE)

- The last **PRLCE was hosted by Peru** on 5-7 December 2023.

Oil and Gas Security Initiative

❑ Oil and Gas Security Exercise (OGSE)

- The **5th OGSE in Thailand** was held on 6-8 September 2023. Its summary report is expected to be published in December 2023.

❑ Oil and Gas Security Network (OGSN)

- The **7th OGSN Forum** is planned to be held in the first half of 2024.
- Issued **54th OGS Newsletter** as of November 2023. Preparation for the **56th issue** is ongoing and will be published by the end of **February 2024**.

❑ Oil and Gas Security Studies (OGSS)

- The **19th OGSS**, “Oil and Gas Security During the Energy Transition” was published in September 2023, and is available on the APEC and APERC website.
- The Topic for the **20th OGSS**, “What are the energy security implications of recent declines in both APEC and global spare petroleum refining capacity?” was discussed at the 6th OGSN Forum and approved by EGCFE. Draft report to be completed by February 2024 and final report by May 2024.

Energy Resiliency

❑ Workshops on Energy Resiliency Principle

- APERC has supported METI in conducting [APEC Energy Resiliency Principle Project](#).
- The [Summary Report](#) of APEC Workshop on Energy Resiliency Principle and [APEC Energy Resiliency Guidelines](#) were approved in January 2023 and the [Completion Report](#) was approved in October 2023 by the EWG.

❑ Energy Resiliency Enhancement Project

- APERC continues to support METI for [APEC Energy Resiliency Enhancement Project](#), which includes 1) developing an evaluation model, 2) creating sectoral guidelines for energy infrastructure companies, and 3) holding a workshop for dissemination as the follow-up actions.
- The [Workshop on Energy Resiliency Enhancement](#) was held in San Francisco, the USA, on [9-10 November 2023](#).
- The Project was delayed because of the contracting process with the contractor and the unexpected change in the contractor's organization. The extension request of the Project period was submitted and approved to change the Project end date from December 2023 to May 2024.

Energy Transition

□ Series of Sectoral Symposia on Energy Transition

- APERC organized [the APEC Symposium on the Holistic Approach of Decarbonization towards Carbon Neutrality](#) online in August 2021.
- The symposium emphasized not only renewable energy but also other various measures, including energy efficiency and conservation; hydrogen/ammonia; carbon capture, utilization and storage (CCUS); and nuclear energy can be mobilized.
- APERC has planned to follow up the symposium by holding **a series of sectoral symposia** related to decarbonization for the energy transition.
- The first one on **Symposium on Decarbonizing Fossil Fuels** was held in Kobe, Japan on 11-12 October 2023. It will be followed by **Symposium on Promoting Energy Efficiency and Energy Management System**, which is scheduled to be held in Tokyo on 23-24 January 2024.

Topical Studies

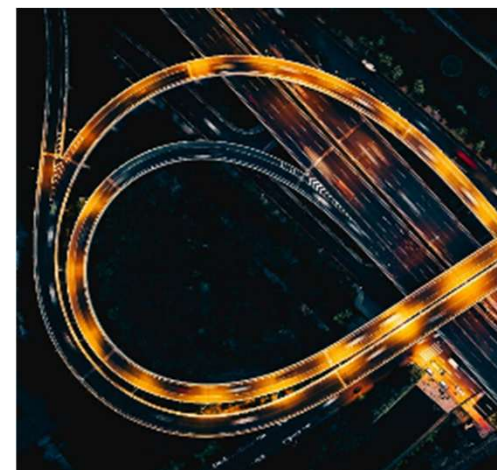
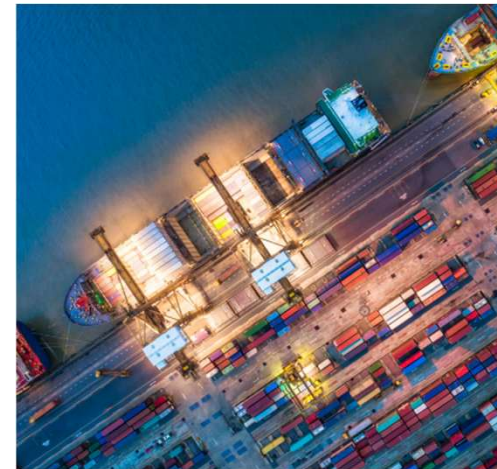
- Along with the Outlook and the Overview, APERC has been conducting research on topics relevant to energy issues and policies in the APEC region.
- Studies focusing on fossil fuels (coal, oil and natural gas) to support the [Expert Group on Clean Fossil Energy \(EGCFE\)](#) have been published since 2017.
 - Summaries of the APERC Fossil Fuel Reports 2022 were presented at EWG64 in November 2022.
 - [APERC Fossil Fuel Reports 2022: Coal Report 2022 and Gas Report 2022](#) were published in January/February 2023.
 - APERC is finalizing the [APERC Fossil Fuel Reports 2023 series](#), adding the [Hydrogen Report in 2023](#).
- Each researcher pursues research topics based on his/her research interest within the scope of energy economics and energy policy of the APEC region.

APEC Energy Demand and Supply Outlook

- The **APEC Energy Demand and Supply Outlook** project is a priority task for APERC under the APEC Energy Action Programme adopted by leaders in 1995.
- The Outlook provides quantitative analyses and policy insights on projected trends for energy demand and supply in APEC economies through 2050.
- APERC has produced eight editions of the APEC Energy Demand and Supply Outlook.
- The **8th Edition Outlook** was published in September 2022. APERC researchers have shared the findings with member economies.
- The **modelling tools developed for the Outlook** are used for training activities in APEC economies.
- APERC researchers have begun modelling for **the 9th Edition Outlook** to be published in 2025. Preliminary results are beginning to be shared with member economies.

Outline of the APEC Energy Demand and Supply Outlook

- 9th Edition scheduled for publication in 2025
- Two volumes:
 - Volume 1: APEC-wide trends and results, including estimated progress on energy-related goals
 - Volume 2: 21 economy analyses
- Supplemental dataset and model methodology
- Projections through 2060
- Utilizes EGEDA historical energy balances



Scenarios in the 9th Edition

The Reference scenario (REF)

- a set of economy-specific pathways where existing policies are retained, and new policy measures are included if and only if they are supported by implementation details.
- in the absence of details, energy intensity, fuel switching, investment, technology deployment, and energy supply are assumed to loosely follow historical trends.

The Target scenario (TGT)*

- illustrates a hypothetical pathway for each economy towards realizing energy-related policy targets, even if implementation details are not available.
- when details are not available, economy targets provide directional guidance and a general sense of policy priorities to inform assumptions.

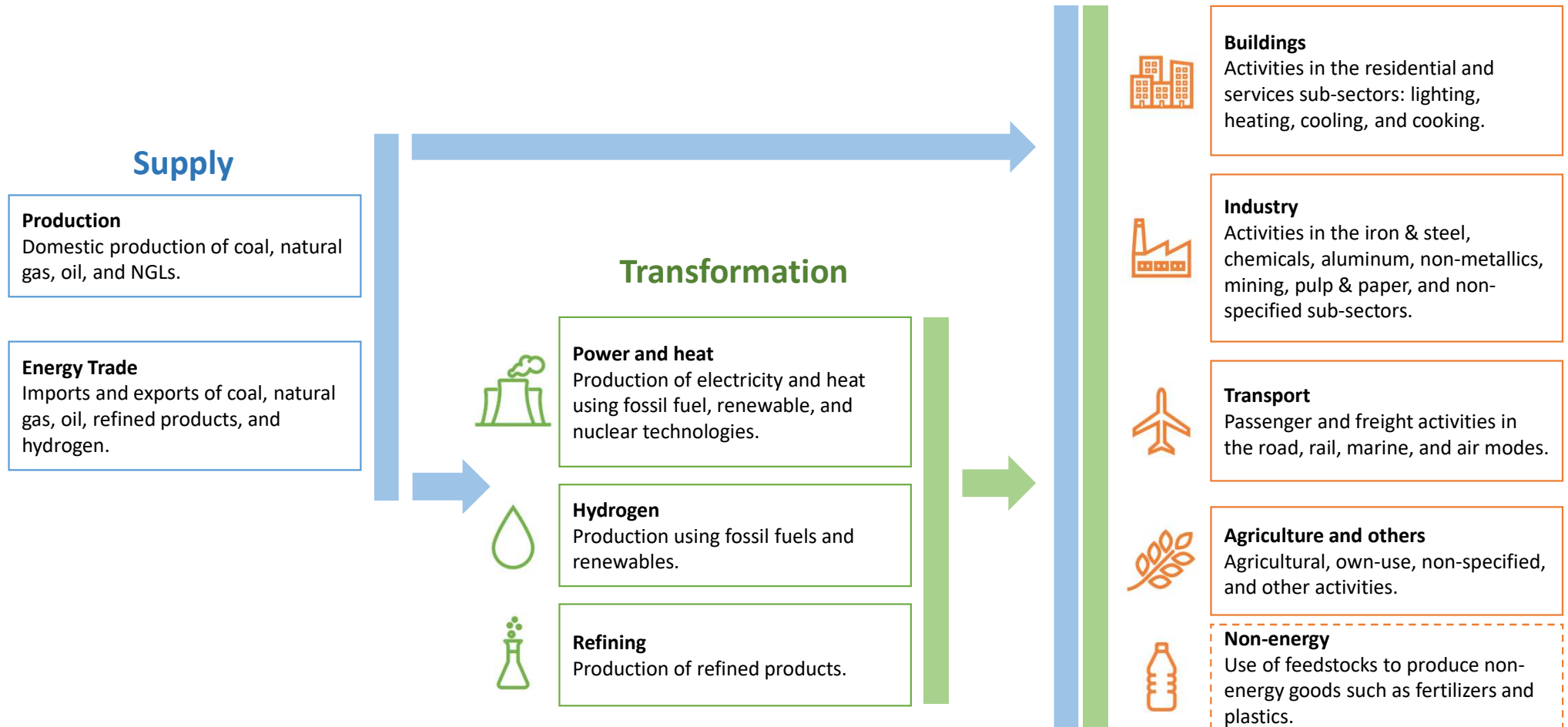
* this scenario is different than the Target Scenario from the 7th Edition Outlook

Important technology trends and uncertainties

- Electric vehicles
- Energy storage (batteries)
- Critical Materials
- Hydrogen (including ammonia)
- Carbon Capture Utilization and Sequestration

- APERC researchers are researching/developing technology perspectives to understand:
 - Technical potential
 - Cost profiles
 - Other barriers (e.g., permitting, regulation)
 - Unintended consequences (e.g., reducing grid reliability)

Components of APEC energy system



Thank you.

<https://aperc.or.jp>

