

APERC Update

EGEEC 60 Meeting, 2023, Hong Kong, China

15 March 2023

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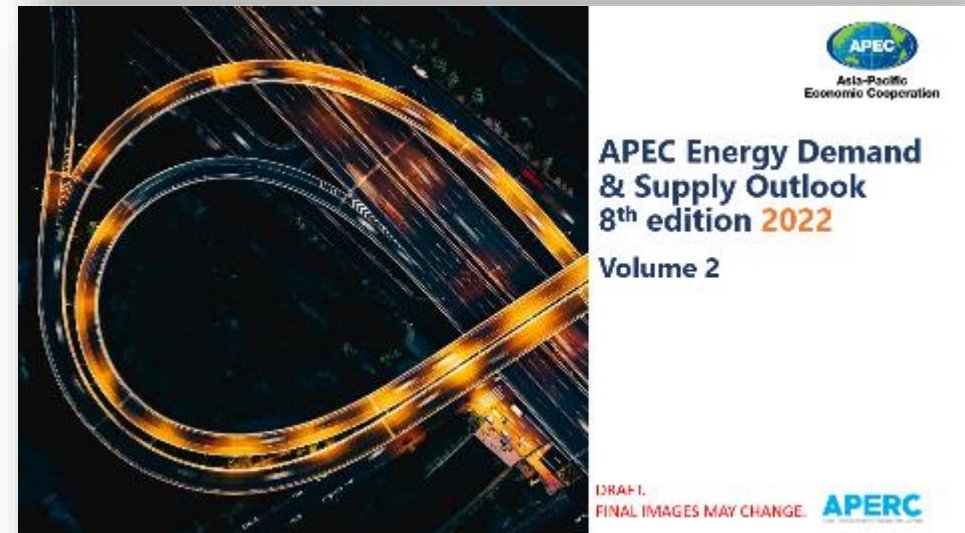
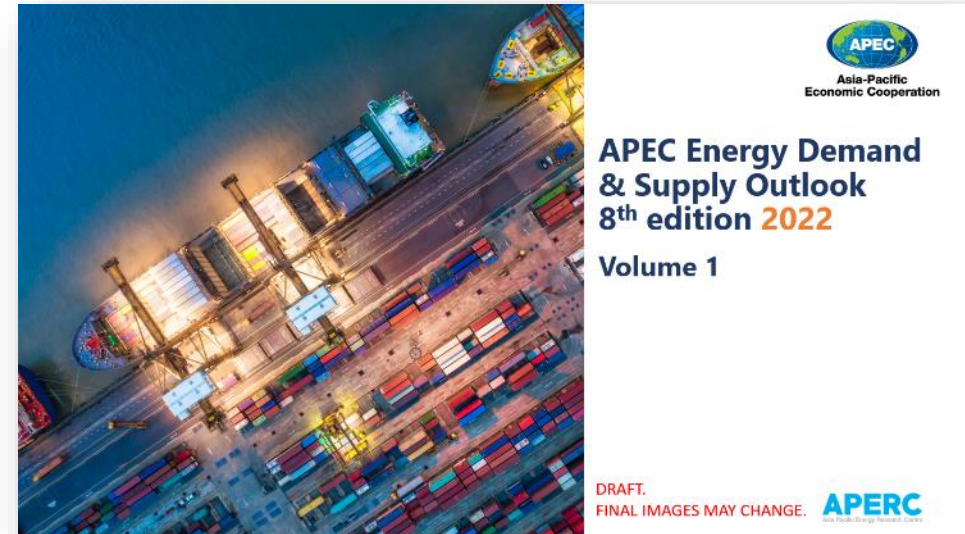
Outline

- Roadshows for the *APEC Energy Demand and Supply Outlook 8th Edition*
- Preparation for the *APEC Energy Demand and Supply Outlook 9th Edition*
- Updates to the Energy Efficiency Policy (EEP) Workshop

Roadshow activities for the *APEC Energy Demand and Supply Outlook 8th Edition*

(Reference) APEC Energy Demand and Supply Outlook 8th edition

- Published every three years
- 8th edition: official launch end of September 2022
(<https://aperc.or.jp/reports/outlook.php>)
- Provides coverage on projected energy demand and supply trends
 - APEC-wide trends (Volume 1)
 - Economy-specific trends (Volume 2)
- For the 8th edition:
 - Projections: 2018-2050
 - Emissions focus (Kaya Identity)
 - Two scenarios: Reference and Carbon Neutrality



Efforts to disseminate the Outlook 8th Edition

- With the official launch event in last September, APERC has had around 40 opportunities to share the result of the 8th edition.

	Embassy visits in Japan	Roadshow events	Other activities	Total
In person	12	14	5	31
Virtual	-	3	6	9
Total	12	17	11	40

- For the 8th edition, APERC activities newly included visits to APEC economies' embassies in Japan.
(e.g.) Thailand Embassy visit, November 2022



International events

- There were some presentations and interviews in international conferences as well.

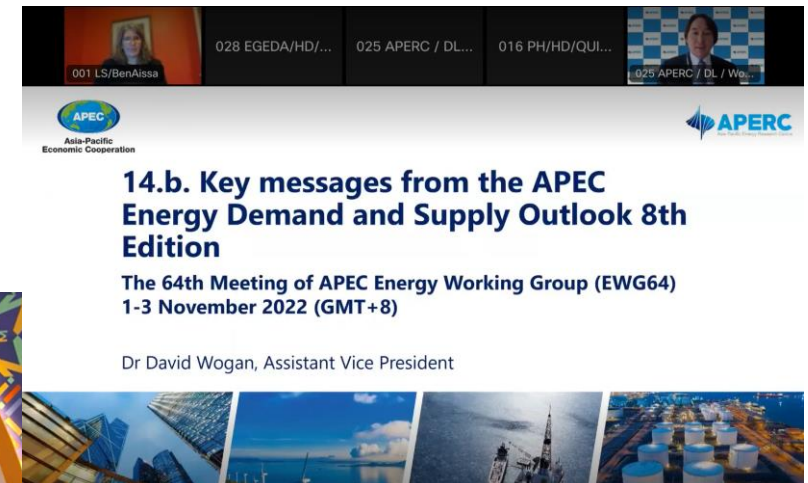
SIEW, October 2022



SIEW live interview, October 2022



APEC EWG 64, November 2022



APEC economy roadshows

- Apart from the Embassy visits and presentations at international events, APERC has held a series of roadshows in each economy to provide the key findings of the 8th edition.

Chile



Malaysia



Viet Nam



Korea



USA



Australia



- Some additional roadshows will be scheduled in the first half of this year.

Discussion and feedback in the roadshow

- APEC economies agreed that energy transition for carbon neutrality is a primary issue but still recognized uncertainties about its future.
- There was a general concern about the energy transition and high natural gas prices during the transition since many economies planned to shift from coal to gas.
- Despite the difficulties in commercialization of hydrogen, most economies were interested in the long-term potential of hydrogen.
- There was some interest in nuclear power as one of more sustainable and reliable options.
- Some discussions included technical issues such as energy modelling and activity changes that reduce in energy consumption.*

* (e.g.) Virtual meeting technology improvement during the pandemic reduces transportation needs.

- Some economies discussed carbon neutrality goal related with potential cooperation between the developing and developed economies.

Preparation for the *APEC Energy Demand and Supply Outlook 9th Edition*

Preparing the Outlook 9th Edition

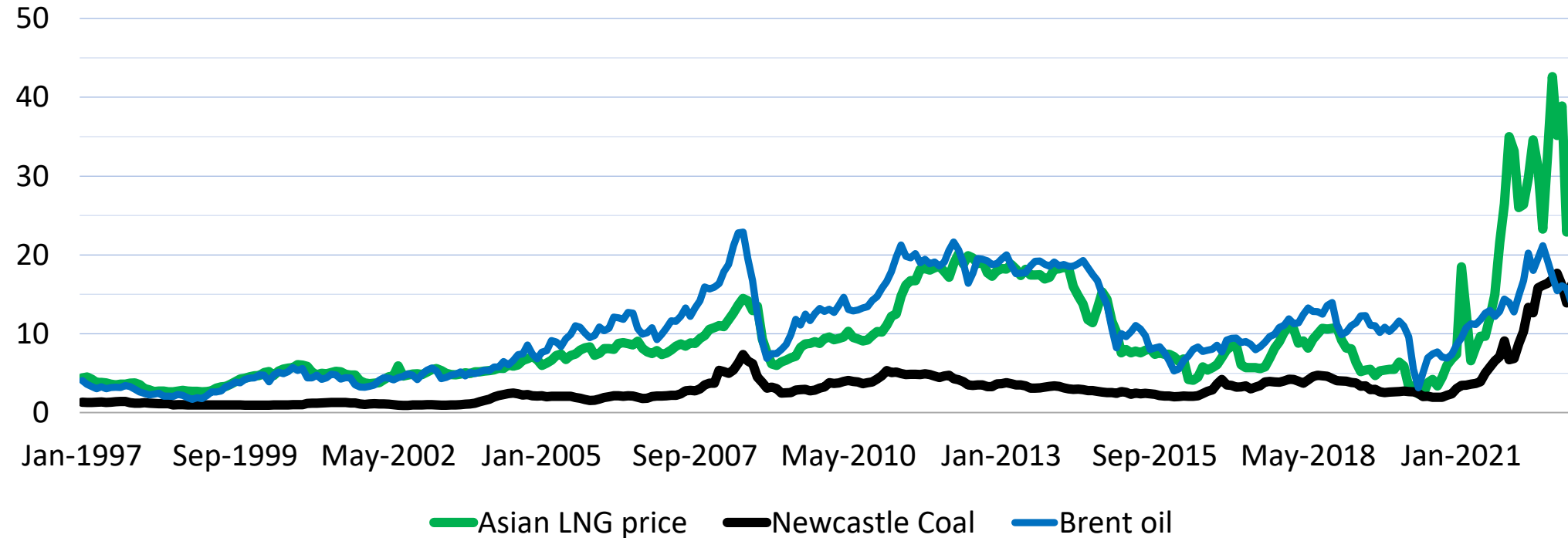
- Since the 1st edition was published in 1998, the APEC Energy Outlook has responded to global trends.
 - From 5th to 8th edition of the APEC Energy Outlook, the scenarios have been continuously updated.

	5th	6th	7th	8th
Period	2009-2035	2013-2040	2016-2050	2018-2050
Base year	2009	2013	2016	2018
Scenarios	Business-as-Usual (BAU) High Gas (HG)	Business-as-Usual (BAU) Improved Efficiency (IE) High Renewables (HR) Alternative Power Mix (APM)	Business-as-Usual (BAU) APEC Target (TGT) 2-Degrees Celsius (2DC)	Reference (REF) Carbon Neutrality (CN)
Publication	2013	2016	2019	2022

- APERC is brainstorming scenario directions for the APEC Energy Outlook 9th Edition.
 - Projection period for the Outlook 9th Edition will likely be extended to 2060 (preliminary).
 - One of key considerations is the Energy Trilemma (Energy Sustainability, Security and Affordability).

Energy trilemma is now emerging in policy discussions

Monthly fossil fuel prices on an energy equivalent basis, 1997 to 2022 (USD per MMBtu)



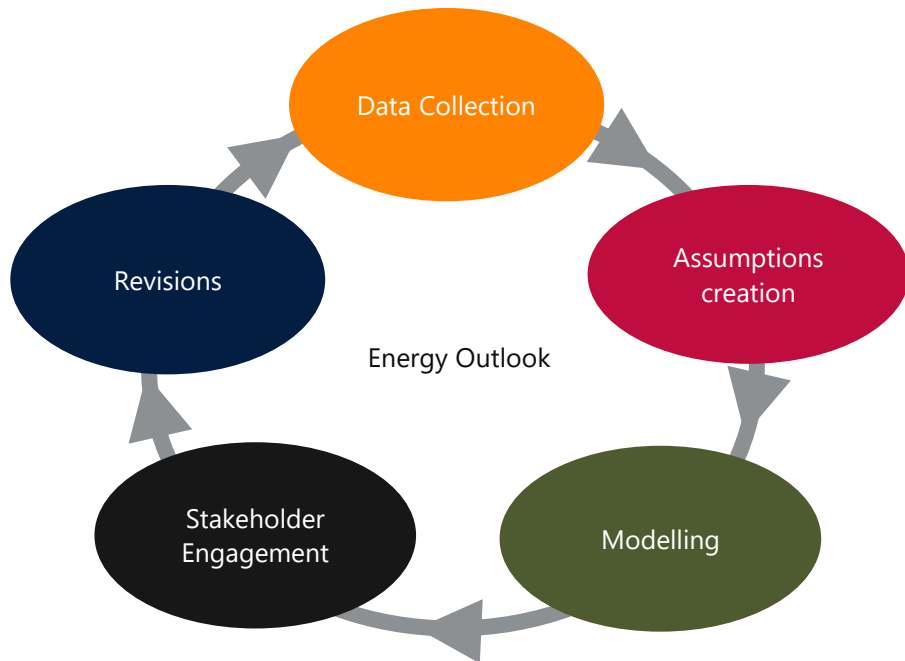
Source: IMF, JOGMEC, EIA, APERC analysis

- Pandemic recovery is prompting a rebound in energy demand.
- Energy supply growth is constrained by several actors.
- Russia-Ukrainian war is affecting energy trade flows.

➔ Pragmatic
Decarbonization
Pathways

Basic framework for the 9th Edition

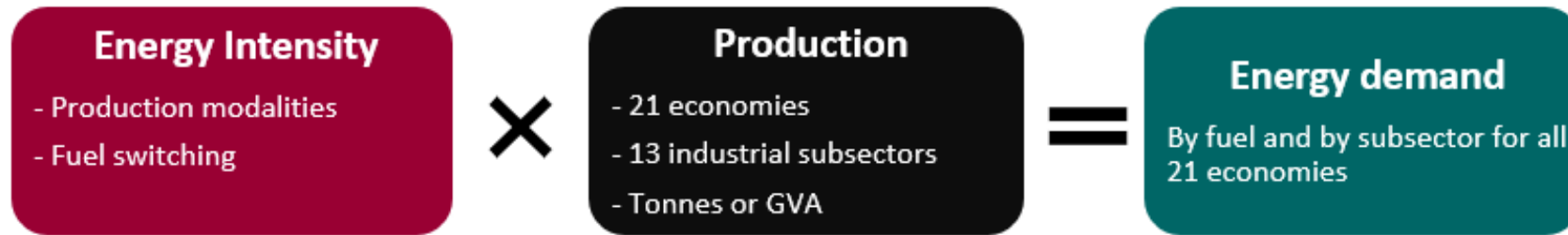
- Two core objectives
 - Anticipating energy demand and supply trends
 - Estimating progress on APEC energy-related goals
- Analysis cycle and expected schedule (preliminary)



#	Task	2023				2024				2025			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Scenario development	X	X										
2	Model development	X	X										
3	Modelling		X	X									
4	Drafting		X	X									
5	Internal Review #1		X	X									
6	External Review #1			X	X								
7	Revisions #1			X	X	X							
8	Internal Review #2				X	X							
9	External Review #2					X							
10	Revisions #2						X	X					
11	Final results							X					
12	Proofread							X	X				
13	Final Draft									X			
14	Copy edit, layout, and publishing										X		
15	Launch										X		
16	Roadshow										X	X	X

Modelling progress in Industry sector

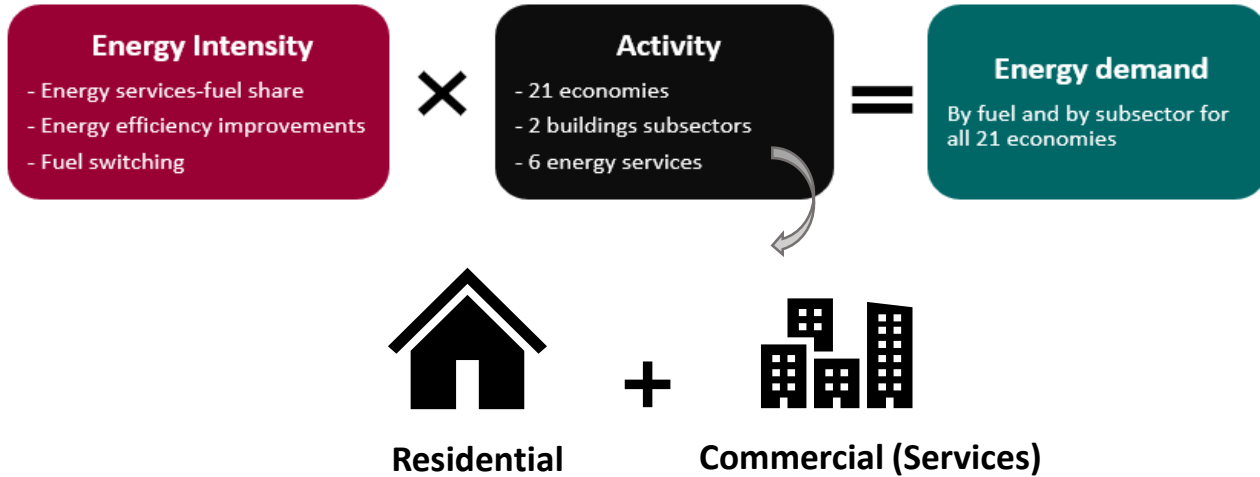
Industry Model Structure



- Estimating 1) production (output) and 2) energy intensity for modelling energy demand in industry sector
 - GDP and population projections will feed into industry output projections at the economy level.
 - Attempting to determine whether certain scenarios, such as a Carbon Neutral scenario, require additional industrial production to build 'clean machines'
 - The 8th edition only considered production activity such as mining activity, but there may be additional investment for establishing the 'low-emitting infrastructure'.
- Refining modelling approach in concert with relevant data collection

Modelling progress in Buildings sector

Buildings Model Structure



	Energy services		Energy services
1	Space heating	2	Space cooling
3	Lighting	4	Water heating
5	Cooking	6	Other usage



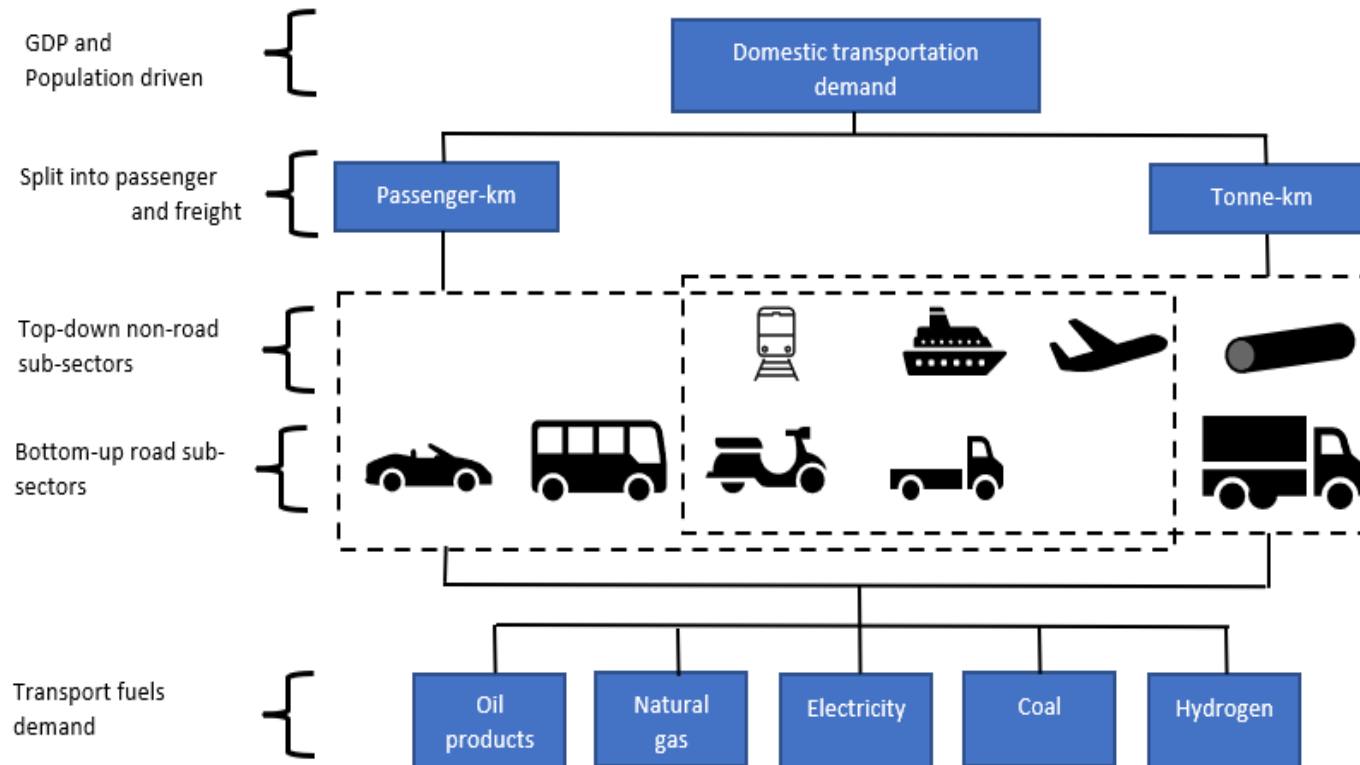
- Updating dataset of buildings sector, including new households' surveys
- Identifying relevant policies, technology innovations, technology acceptability, and potential behavior changes
- Investigating potential effects of Covid-19 on energy in buildings sector

➤ Conducting more detailed analysis of commercial/services/public sector with new data sources if available

(e.g.) Impacts of updated NDC measures in buildings sector

Modelling progress in Transport sector

Domestic Transport Model Structure



- Updating the transport dataset, including revamp of efficiency data
- Implementing streamlined data processes to help more input parameters
- Arranging extensive visualization suite to better understand scenarios
- Trying to explore the effects of different transport-related policies implemented in APEC economies (e.g.) EV's sales share requirements

Updates to the Energy Efficiency Policy (EEP) Workshop

Introduction of EEP Workshop

- Part of the Peer Review on Energy Efficiency (PREE) program to promote “high-performance” energy-efficiency policies in APEC by:
 - Focusing on one key issue of Energy Efficiency policy with experts
 - Enabling APEC economies to share useful information for policy planning

- Recent topics have included:
 - Transport fuel economy standards (2019, 4th)
 - Economic Recovery through Energy Efficiency (2020, 5th)

- 6th EEP workshop was held in conjunction with EGEE&C 58 in China on 29 March 2022.
 - 47 participants from 13 APEC economies

The 6th EEP Workshop : Program Overview

- **Topic**

- Energy Efficiency Project Financing

- **Agenda**

09:00-09:05	Opening Remarks by Moderator Welcome Remarks by APERC
Session 1	Project Financing: Expand Investment in Energy Efficiency
09:05-10:00	<ul style="list-style-type: none"> • Vijeta Jangra, Guidehouse’s Energy “Financing Options for EV Charging Infrastructure - A US Case Study” • Akin Olumoroti, Alliance to Save Energy “Energy Efficiency and Digital Technologies” • Elrika Hamdi, Institute for Energy Economics and Financial Analysis “Energy Efficiency in the Midst of Energy Crisis”
10:00-10:30	Discussion and Q & A

Session 2	Financing Models for Energy Efficiency Projects
10:30-11:20	<ul style="list-style-type: none"> • Muhammad Ery Wijaya, Climate Policy Initiative “Innovative Energy Efficiency Financing Scheme for Industrial and Commercial Sector in Indonesia” • Juheon Seok, Korea Energy Economics Institute “Analysis of Financing Model for Energy Efficiency Improvement in Korea” • Johnny Kam & Tony Chan, CLPP Power Hong Kong Limited “Funding scheme for supporting Energy Efficiency Projects in Hong Kong”
11:20-11:50	Discussion and Q & A
11:50-12:00	Summary by moderator Closing Remarks by Host Economy

The 6th EEP Workshop : Messages and Publication

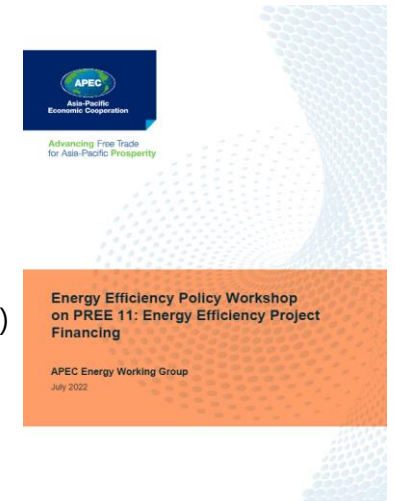
- **Key conclusions**

- It is necessary to establish competitive financial models that address cost reduction incentives, risk management, and technology issues under public and private cooperation.
- Stakeholder awareness of energy efficiency projects must continue to improve.
- Measurement and verification of energy efficiency projects remain a significant concern for many stakeholders.

- **Workshop report**

- A full summary of the workshop is available on the APEC website.

(<https://www.apec.org/publications/2022/07/energy-efficiency-policy-workshop-on-pree-11-energy-efficiency-project-financing>)



Next EEP Workshop

- **Schedule**

- The 7th EEP workshop tentatively aims to be held in conjunction with the EGEEC 61 meeting in the second half of 2023, based on coordination with the host economy.
- Project Proposal is approved by the PMU after the Quality Assessment (QA) process.

- **Topic (under development)**

- How to further improve energy efficiency in industry sector (*TBD*)

“In industry, the rate of improvement in the energy needed to produce one US dollar of industrial value added dropped back from almost 2% per year achieved over 2010-15 to just under 1% over 2015-2020.”

- IEA Energy Efficiency 2022

→ We welcome your suggestions or comments for future workshop topics.

Thank you.

<https://aperc.or.jp>

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