

APERC Update

**Joint Meeting EGNRET 58 and EGEDA 34
Hawaii, 4 April 2023**

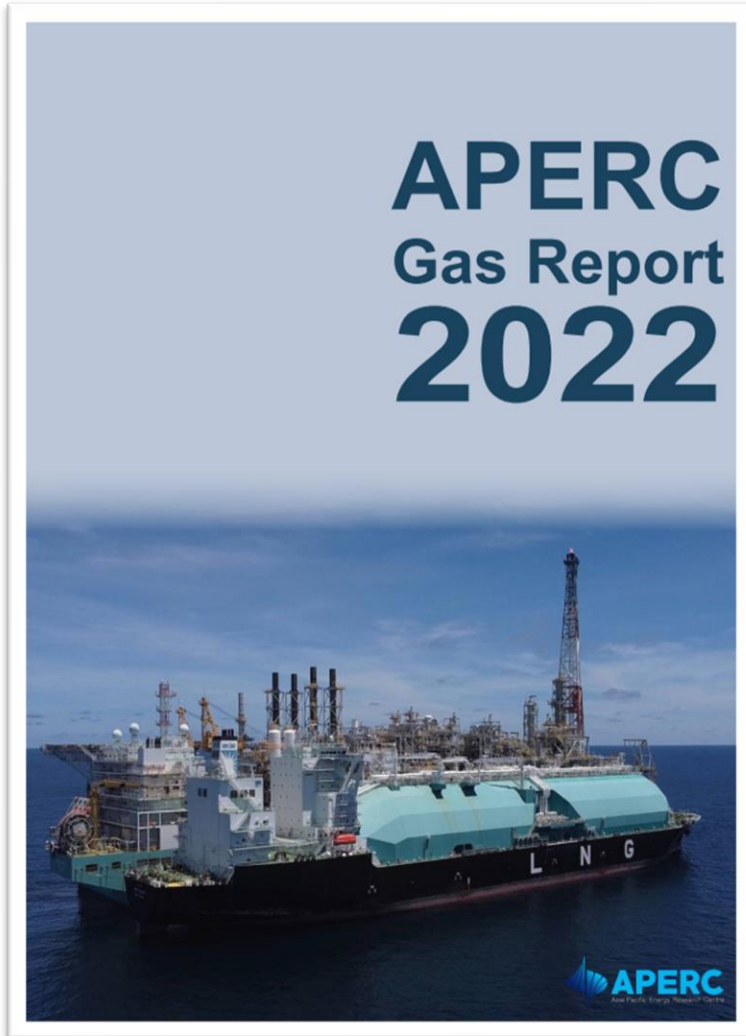
Ario JATI – Senior Researcher



Outline

- ❑ **New report releases: Fossil fuel reports**
- ❑ **Roadshows for the APEC Energy Demand and Supply Outlook 8th Edition**
- ❑ **Planning for the APEC Energy Demand and Supply Outlook 9th Edition**
- ❑ **29th APEC seminar on energy modeling**

New report releases: APERC Gas Report 2022

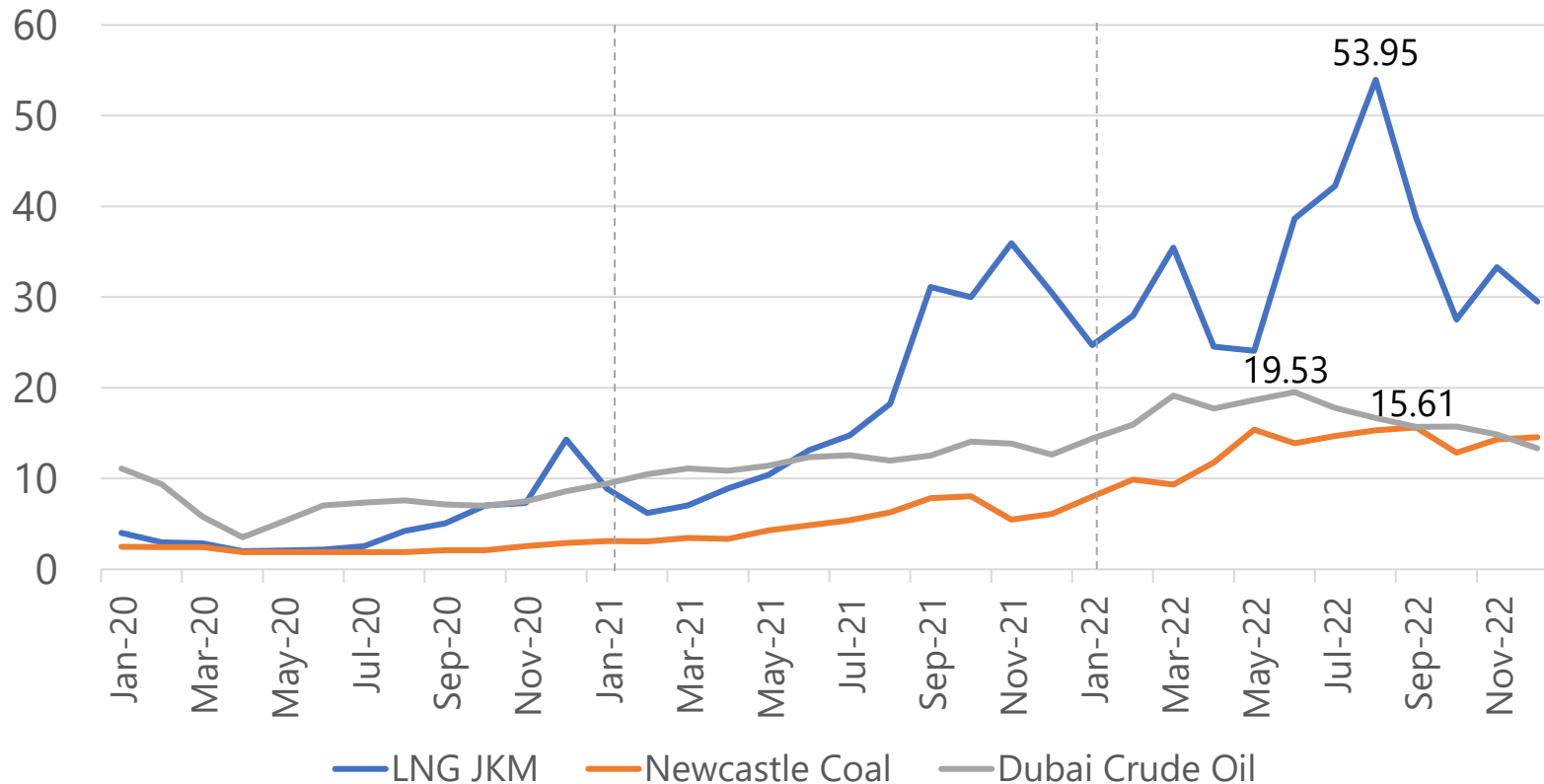


- *Key highlights :*
 - APEC natural gas consumption rebounded in 2021.
 - APEC's natural gas production in Southeast Asia declined by an average of 1.1% per annum.
 - Case Study: APEC SEA's response to high gas prices

Full Report : https://aperc.or.jp/reports/fossil_fuel_report.php

For a variety of reasons, fossil fuel prices jumped in 2H21 and 2022

Monthly fossil fuel prices in 2020-2021 (USD/MMBtu)



Source: Investing.com

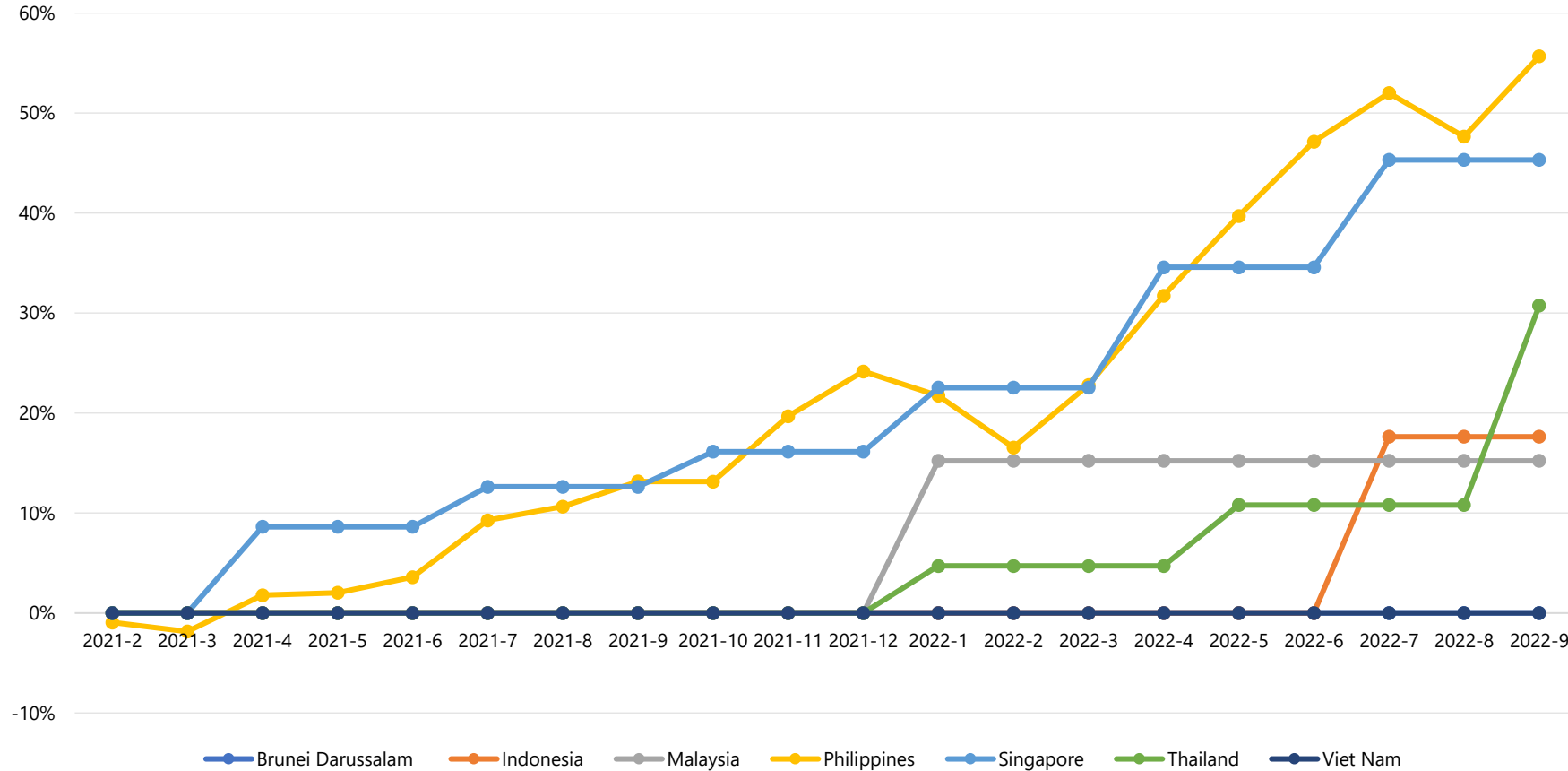
Percentage Price Change Relative to 1H21

	2H21	1H22	2H22
Oil	18%	60%	43%
Gas	195%	222%	313%
Coal	77%	209%	295%

- The pandemic depressed prices in 2020
- By 1H21, prices had recovered
- Under-investment and then the Russia-Ukraine war caused substantial price increases

Southeast Asia's responses to high fossil fuel prices

Average electricity tariff changes (in percentage) in 2021-2022 in APEC SEA (compared to January 2021 level)



- Significant increase in electricity tariff in Singapore and the Philippines.
- Brunei Darussalam and Viet Nam Governments absorbed all the impact and maintained the electricity prices at the same level.

New report releases: APERC Coal Report 2022



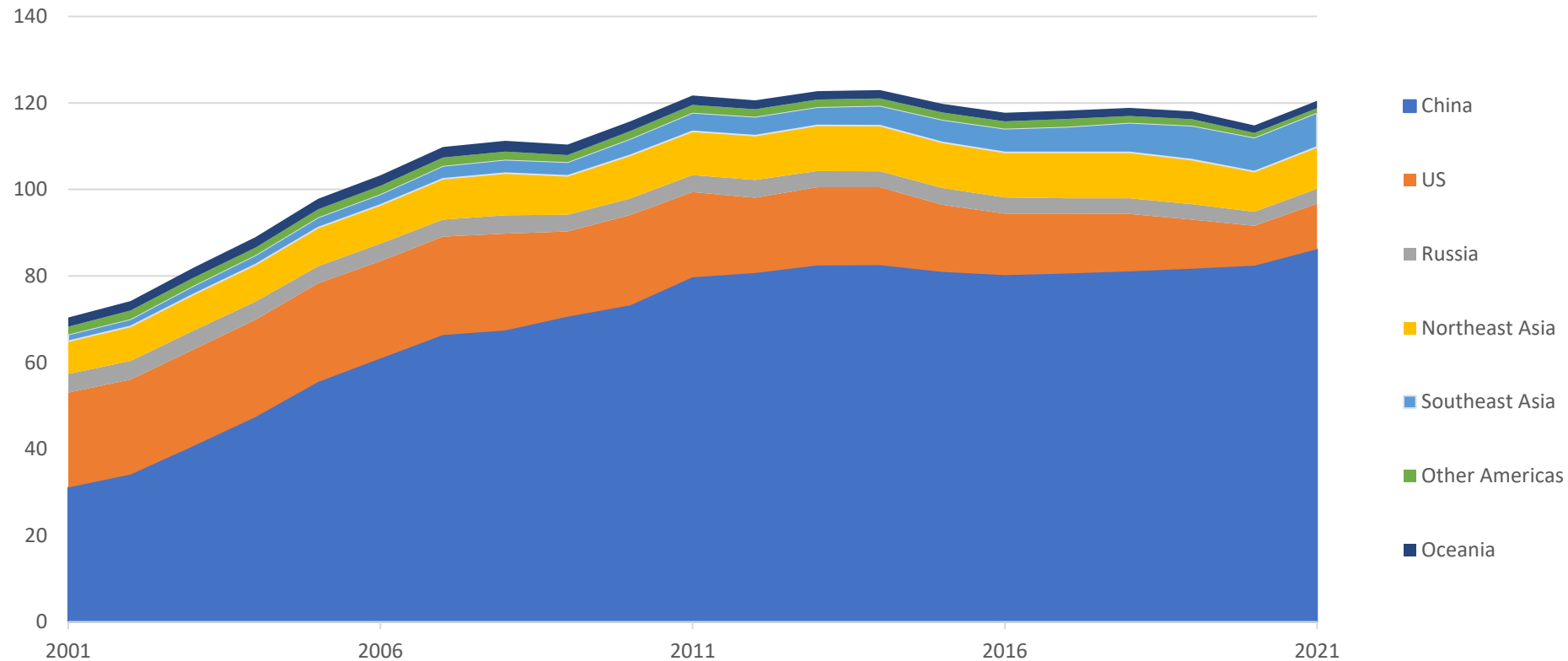
APERC Coal Report 2022

- Key highlights :
 - Most APEC Economies committed to achieving NZE in 2050 or 2060.
 - APEC coal consumption bounced back strongly in 2021.
 - APEC Coal production rose by 6.1% in 2021.
 - Coal prices surged in the second half of 2021 and 2022.

Full Report : https://aperc.or.jp/reports/fossil_fuel_report.php

Coal consumption bounced back in 2021

APEC Coal consumption by region, Exajoules (EJ)



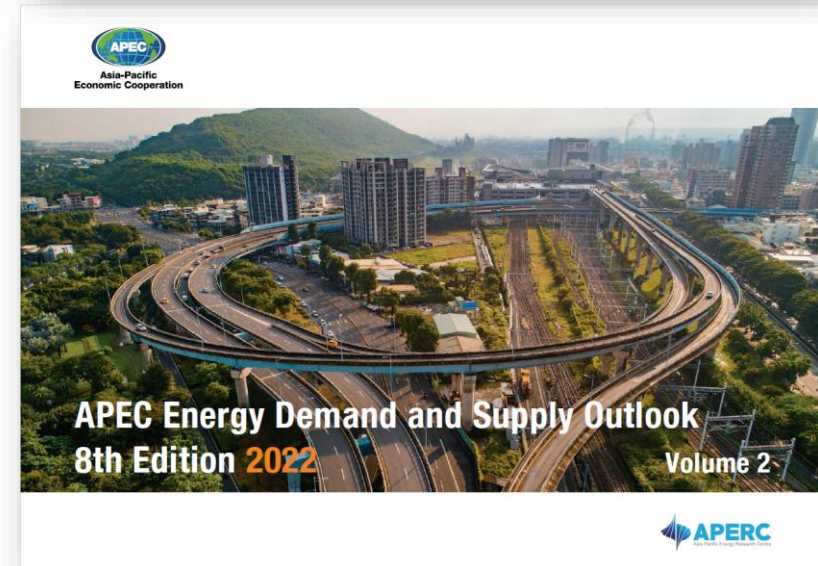
- APEC coal consumption rebounded by approximately 5% in 2021, driven by the five largest coal consumption economies (China, United States, Japan, Russia, and Indonesia).
- APEC-wide coal consumption reached 120 EJ in 2021, close to its previous peak in 2014.

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

Outline of the APEC Energy Demand and Supply Outlook

- Published every three years
- 8th edition: official launch end of September 2022
- 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

(<https://aperc.or.jp/reports/outlook.php>)



Efforts to disseminate the Outlook 8th Edition

- With the official launch event last September 2022, 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 APEC economies' embassy visit 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



CERAWEEK, March 2023



APEC EWG 64, November 2022



APEC economy roadshows

- Apart from the Embassy visit and the attendance of 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



- Additionally, several more roadshows are planned for the coming months, including visiting NDRC – China and Peking university.

Feedback from the roadshows

- A general concern about the energy transition and high natural gas prices during the transition.
- Desire for increased focus on energy trilemma and more objectivity about the challenges of decarbonization with current technologies.
- Interested in the long-term potential of hydrogen despite the difficulties in commercialization.
- Increased concern about grid reliability and system costs associated with rising VRE share.
- Question about critical minerals' roles in the energy transition and potential supply bottleneck.
- Interest by some economies in nuclear power generation as one of the more sustainable and reliable options.

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

Selecting scenarios for the Outlook 9th Edition

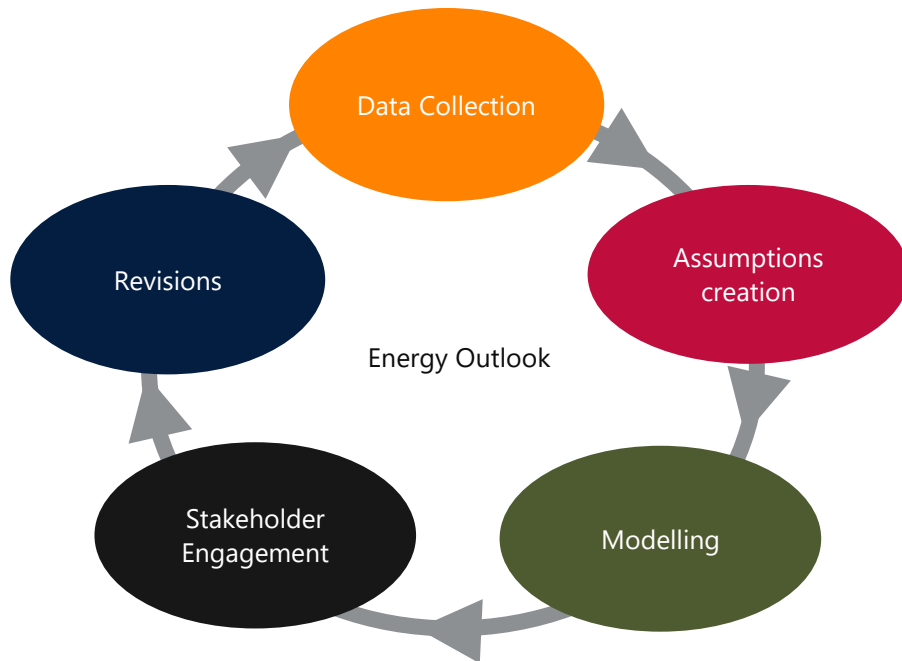
- Since the 1st edition was published in 1998, the APEC Energy Outlook has responded to global trends.
 - From 5th to 8th edition of the APEC Energy Outlook, the scenarios have been continuously updated.

	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 currently developing scenarios directions for the APEC Energy Outlook 9th Edition.
 - Projection period for the Outlook 9th Edition will be 2021- 2060 (preliminary)
 - Roadshows feedback will be incorporated: energy affordability (trilemma), critical minerals, and hydrogen.

Preliminary schedule for the 9th Edition

- Expected to be published in 2025
- Two core objectives
 - Estimating energy demand and supply trends
 - Estimating progress on APEC energy-related goals
- Analysis cycle and expected schedule



		2023				2024				2025			
#	Task	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Scenario development	X	X										
2	Model development	X	X										
3	1 st 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

29th APEC seminar on energy modeling

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□ APERC's **Know-How Transfer Program**

□ Held in Tokyo **6-10 March 2023**

- **27th and 28th were held online**

□ **Participants**

- No. of participants – 14 (10 APERC funded, 4 self-funded)
- No. of economies – 10 (BD; CHL; INA; MAS; PE; PHL; PNG (online) ; CT; THA; VN)
- APERC Experts and Speakers – 5

□ **Goals**

- 1) Provide an understanding of energy model in policymaking.
- 2) Reinforce attendees' capabilities to choose, design, and use energy models that can be implemented in their home economies.
- 3) Strengthen analytical skills to assess results

➤ ***Although the duration of the training was short, participants were all satisfied***



□ **Agenda**

- Basic of energy modeling
- Sectoral modeling: supply, power and demand using OSeMOSYS.
- Scenario making
- Hands-on exercises

Thank you.

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ario.jati@aperc.or.jp

