

2G3. Report on the 23rd APEC Workshop on Energy Statistics

The 37th meeting of APEC Expert Group on Energy Data and Analysis (EGEDA)

Guangzhou, China, 8-10 April 2026

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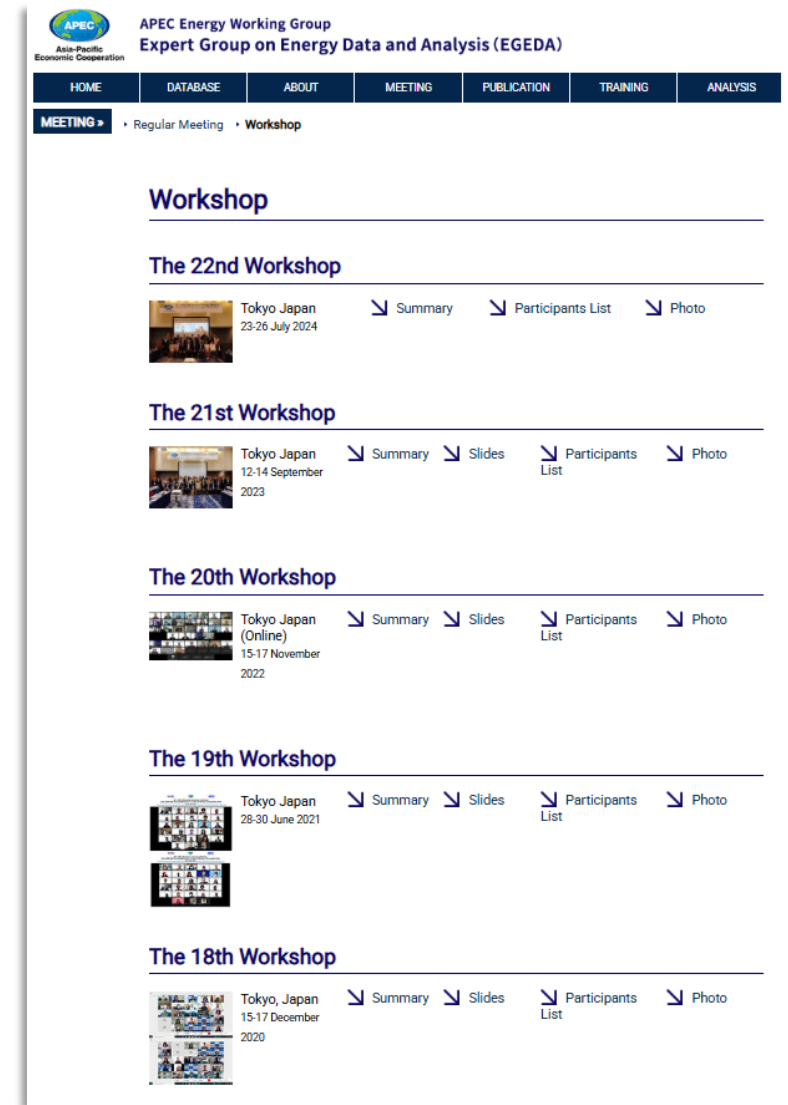


Outline

- Workshop Objective and Agenda
- Session Highlights
- Reflection by Participants

About the APEC Workshop on Energy Statistics

- The **APEC Workshop on Energy Statistics** has been held annually since 2002, established following a directive from APEC Energy Ministers to APERC to build a foundation for sound energy policymaking.
- Japan's Ministry of Economy, Trade and Industry (METI) has provided continuous financial support since the workshop's inception.
- The workshop aims **to improve the timeliness, completeness, and quality of energy data** submitted by APEC member economies.
- It also serves as a platform **to harmonize energy definitions** between international organizations and APEC economies.
- Each annual workshop features **a distinct theme reflecting evolving priorities and emerging challenges** in energy data across the region.



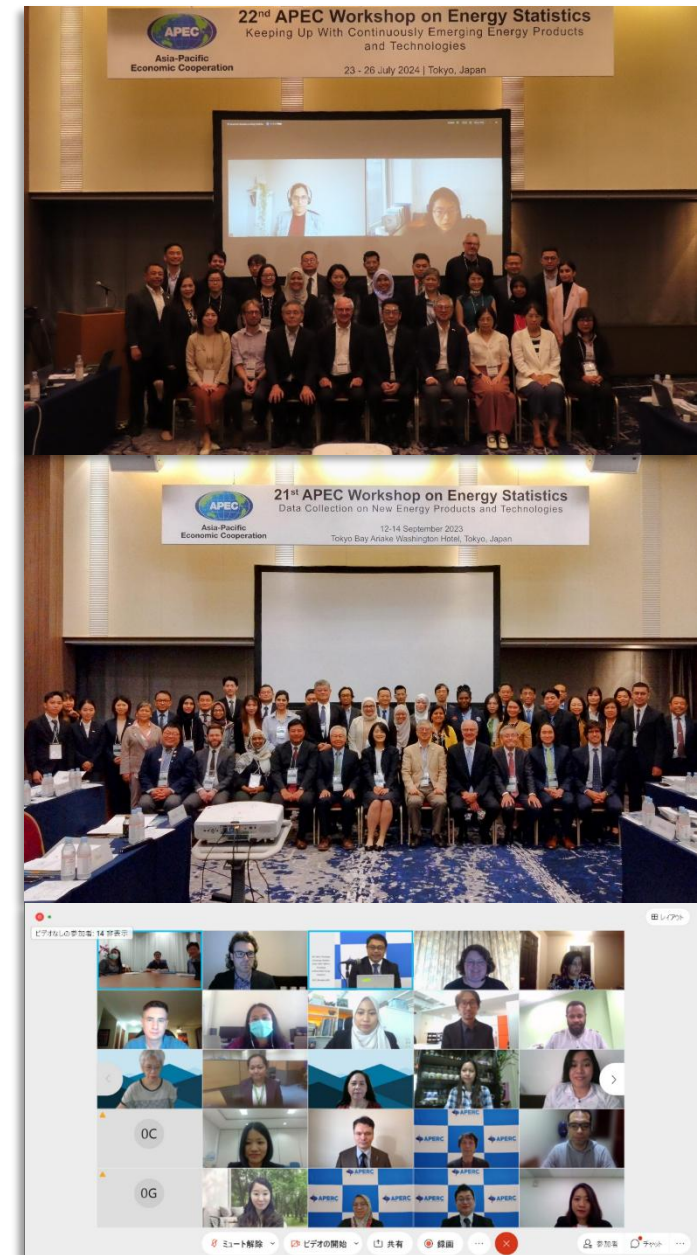
The screenshot displays the APEC Energy Working Group (EGEDA) website. The header includes the APEC logo and the text "APEC Energy Working Group Expert Group on Energy Data and Analysis (EGEDA)". A navigation menu contains links for HOME, DATABASE, ABOUT, MEETING, PUBLICATION, TRAINING, and ANALYSIS. The "MEETING" link is active, showing a breadcrumb trail: "MEETING > Regular Meeting > Workshop".

The main content area is titled "Workshop" and lists several past workshops:

- The 22nd Workshop**: Tokyo Japan, 23-26 July 2024. Links: Summary, Participants List, Photo.
- The 21st Workshop**: Tokyo Japan, 12-14 September 2023. Links: Summary, Slides, Participants List, Photo.
- The 20th Workshop**: Tokyo Japan (Online), 15-17 November 2022. Links: Summary, Slides, Participants List, Photo.
- The 19th Workshop**: Tokyo Japan, 28-30 June 2021. Links: Summary, Slides, Participants List, Photo.
- The 18th Workshop**: Tokyo, Japan, 15-17 December 2020. Links: Summary, Slides, Participants List, Photo.

About the APEC Workshop on Energy Statistics

- **2025:** Capacity building in conducting a household energy consumption survey
- **2024:** Tracking the progress of capacity building from the previous workshop
- **2023:** Data collection on new energy products and technologies (hydrogen, electric vehicles, battery electricity storage, district cooling, and methane emissions)
- **2022 (Online):** APEC-IEA Joint Training Workshop on End-use Energy Consumption Data and Energy Efficiency Indicators (Part 2)
- **2021 (Online):** APEC-IEA Joint Training Workshop on Energy Efficiency Indicators (Part I)
- **2020 (Online):** Joint APEC-IRENA Workshop on Renewable Energy Statistics Virtual Workshop



General Information

Dates

17-19 September 2025

Venue

On site: Tokyo Prince Hotel

Online: Webex

Participants

- No. of economies – **14** (Australia; Chile; China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; PNG; Philippines; Chinese Taipei; Thailand; United States; and Viet Nam), IEA, METI and APERC
- No. of participants – **51** [In-person (35) and Online (16)]



Workshop Information

Objective

The workshop's main objective is **to enhance the EGEDA members' capability in end-use data collection through an energy consumption survey**. The workshop will also be an avenue to learn from the members' experiences in collecting end-use data through sharing best practices. The workshop will also invite experts/statisticians who will impart their knowledge in survey design and implementation, including sampling design, questionnaire design, and survey methodology, among others.

Purpose

- The first one and a half days would be allotted for **discussion on the current situation of the collection on energy efficiency indicators template** in APEC. Experiences of member economies in energy consumption surveys will also be shared. Expert presentations in conducting surveys will be provided.
- The last one and a half days would be allotted for **the preparation of a household end-use energy consumption survey questionnaire**. At least two member economies will be requested to use the questionnaire for pilot surveys. These pilot surveys are to be conducted preferably in 2026. Lessons learned will be reported during the 25th APEC workshop on energy statistics in 2027.

Day 1 AM (08:30 – 12:30)

08:30-09:00	Registration
09:00-10:00	Session 1 – Opening session Moderator: Mr. Nobuhiro SAWAMURA, ESTO/APERC
	<ul style="list-style-type: none">- Welcome Remarks by METI official- Opening Remarks by Dr. Kazutomo IRIE, APERC President- Self-introduction by participants
10:00-10:30	Photo session and AM Break
10:30-12:30	Session 2 – Setting the tone: This session gives an overview of the members' end-use data and how they were collected Moderator: Mr. Glen SWEETNAM, Senior Vice President, APERC
10:30-10:50	C. Current APEC situation by Ms Elvira GELINDON, APERC
10:50-12:30 (20 mins each)	D. Members' sharing on end-use energy consumption survey in the residential sector <ul style="list-style-type: none">5) Australia – Mr Sean LAWSON6) China – Ms Yanxin CHAI7) Japan – Dr Hiroaki OKAMOTO8) Chinese Taipei – Ms WU Jy-Ping
12:30-13:30	Lunch break

Day 1 PM (13:30 – 17:30)

13:30-14:30	<p>Session 3a—Household energy consumption survey—This session will show how the household energy consumption surveys were conducted through collaboration between the energy office and the statistics office. The presentation will showcase planning (date and coverage), the roles of each government agency, questionnaire/survey designing, etc.</p> <p>Moderator: Mr. Edito BARCELONA, ESTO/APERC</p>
30 mins each	<ol style="list-style-type: none"> 1) Indonesia – Dr Pudji ISMARTINI 2) The Philippines – Ms Diana BUNAGAN
14:30-16:00	<p>Session 3b – Other energy consumption survey—This session will show how the survey was conducted through outsourcing, defining the roles of the contractor and the host economy.</p>
	<ol style="list-style-type: none"> 1) Hong Kong, China – Mr Kevin LEE 2) United States – Dr Ian MEAD 3) Malaysia – Mr Faiz
16:00-16:15	PM break
16:15-16:40	<p>Overview of the collection of energy efficiency indicators template by IEA Ms Agnieszka KOSCIELNIAK, Statistics Manager, IEA</p>
16:40-17:00	<p>Experiences in end-use energy consumption surveys in OECD by IEA Mr Thomas ELGHOZI, Energy Data Officer, IEA</p>
17:00-17:30	Wrap-up/Closing

Day 2 Part 1 (09:30-10:10)

09::00-9:30	Registration
09:30:00 - 10:10	<p>Session 4a—Survey design and implementation workshop—This session intends to impart how the survey is designed and implemented, with the end product being an energy consumption survey design that the members can implement. The questionnaire workshop will initial focus on indoor climate control systems and lighting technologies.</p> <p>Moderator: Ms. Elvira GELINDON, ESTO/APERC</p>
9:30-10:10	<p>A. Expert presentation on conducting surveys Ms Den Marie Joy PE, Statistical Specialist, Philippine Statistics Authority</p> <ul style="list-style-type: none">a. Questionnaire designb. Survey scope and coveragec. Sampling Design <p>B. Pilot survey expert presentation: Experience in household energy consumption survey in Thailand Dr Wongkot WONGSAPAI, Vice President, Office of National Higher Education Science Research and Innovation Policy Council</p>
10:10 – 10:25	AM Break

Day 2 Part 2 (10:25-17:30)

10:25 – 12:00	Session 4b – Breakout Sessions
10:25 – 12:00	C. Mechanics of the Breakout Sessions D. Workshop by two breakout groups (warm and cold economies)
12:00-13:00	Lunch break
13:00-17:00	Session 4c – Continuation of Breakout Sessions
13:00 – 15:00 15:00 - 16:00	E. Continuation of Workshop by two breakout groups (warm and cold economies) F. Presentation and testing of the questionnaire
16:00-16:15	PM break
16:00 – 17:00	G. Discussion and feedback on the questionnaire
17:00- 17:30	Wrap-up/Closing

Agenda » Part 2: Preparation of a Household End-use Energy Consumption Survey Questionnaire

Day 3 (09:00-15:00)

09:00-09:30	Registration
09:30 -12:30	Session 5—Questionnaire Workshop — This session continues the questionnaire workshop, with a specific emphasis on household systems such as kitchen appliances, laundry equipment, and entertainment technologies. Moderator: Dr. Matthew DUMLAO, ESTO/APERC
9:30 – 10:30	A. Workshop by two breakout groups (emerging and developed economies)
10:30 – 10:45	AM Break
10:45 – 11:30	B. Continuation of breakout workshop
11:30 – 12:00 12:00 – 12:30	C. Presentation and testing of the questionnaire D. Discussion and feedback on the questionnaire
12:30 – 13:30	Lunch break
12:30 – 15:00	Session 6—Survey Implementation—This session focuses on strategizing the rollout of the energy consumption survey, discussing implementation methods and challenges. It also aims to identify economies willing to conduct the pilot survey. Moderator: Mr. Glen SWEETNAM, Senior Vice President, APERC
13:30 – 14:30	E. Discussion on the potential survey implementation F. Identifying economies that will conduct the pilot survey
14:30-15:00	Wrap-up and Closing session

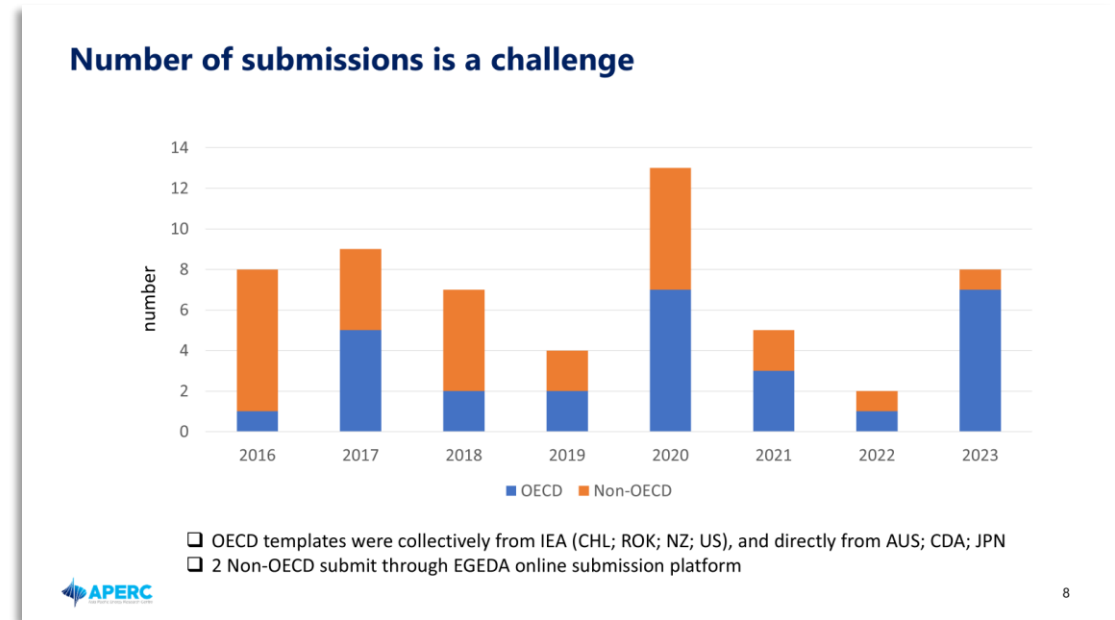
Session 1 – Opening Session

- **Ms Yuna Natsumi**, Deputy Director for Natural Resources and Energy Research, International Affairs Division, Ministry of Economy, Trade and Industry (METI), Japan
 - She welcomed the delegates and emphasized the vital role of accurate, timely energy data in achieving APEC's regional goals.
 - This year's focus on end-use energy consumption addresses persistent challenges faced by many economies, and the workshop aims to support data development and foster collaboration to strengthen energy efficiency efforts across the region.
- **Dr Kazutomo Irie**, APERC Chairman and President
 - Opened the workshop and highlighted this year's focus on building capacity for household energy consumption surveys.
 - Emphasized the importance of sharing best practices among member economies to improve end-use data collection.
 - Urge participants to value and use energy wisely, and encourage collaboration throughout the workshop.



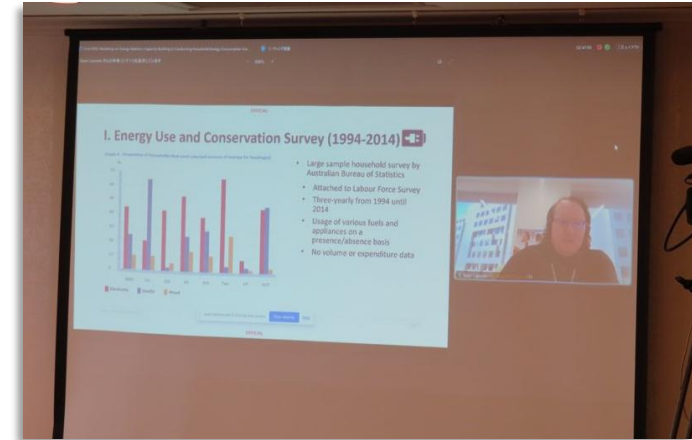
Session 2 – Setting the Tone

- **Ms Elvira Torres Gelindon**, Research Fellow at APERC and EGEDA Secretariat
 - Presented an overview of APEC’s current situation in end-use energy data collection
 - Traced the development of the EEI template since 2014 and noted collaborative initiatives with the IEA
 - Despite progress, data completeness remains a challenge, especially in submitting disaggregated residential energy data among non-OECD economies.



Session 2 – Setting the Tone: Member’s Sharing

- **Mr Sean Lawson**, Department of Climate Change, Energy, the Environment and Water, Australia
 - Title: “Australian residential consumption and end-use reporting”.
 - Outlined the scope of electricity and gas networks, noting that residential data is primarily sourced from state distributors
 - Detailed three key data sources: the Energy Use and Conservation Survey, the 2012 Household Energy Consumption Survey, and the Residential Baseline Study (RBS)
 - Noted that **future research will rely more heavily on administrative data and smart meter analytics**, as survey programs are unlikely to resume.
- **Ms Yaxin CHAI**, Energy Development Research Institute, China Southern Power Grid, China
 - Presented a detailed analysis of China’s electricity consumption and energy transition, highlighting the growing role of electrification in achieving low-carbon goals.
 - Regional disparities and industrial restructuring were explored, showing strong growth in high-tech and service sectors.
 - Noted the **rapid expansion of green electricity trading** and China’s active role in APEC energy cooperation.



Session 2 – Setting the Tone: Member’s Sharing

- **Dr Hiroaki Okamoto**, Jyukankyo Research Institute, Japan
 - Presented an overview of Japan’s Household CO2 Emission Survey (HCES).
 - The HCES was developed to capture detailed data on household energy use, CO2 emissions, and related behaviors.
 - The survey, conducted annually since 2017, covers 13,000 households economy-wide using both random sampling (RSS) and online panels (OPS).
 - Highlighted **challenges such as data inconsistencies and the shift from paper bills to online platforms**, which have affected response rates.
 - OPS is not based on random sampling and therefore lacks statistical validity
 - RSS faced some refusals from participants unwilling to engage
- **Ms Jy-Ping Wu**, TRI, Chinese Taipei
 - Presented an overview of the Energy Consumption Survey in the Residential Sector, which supplements official energy statistics.
 - Conducted every five years, the survey uses stratified random sampling and face-to-face interviews to gather data on household energy use, equipment, and building characteristics.
 - Highlighted **discrepancies between survey results and official statistics and how survey feedback has led to improved data quality.**
 - Future plans include increasing survey frequency to every three years, integrating cross-sector surveys, and refining estimation parameters.



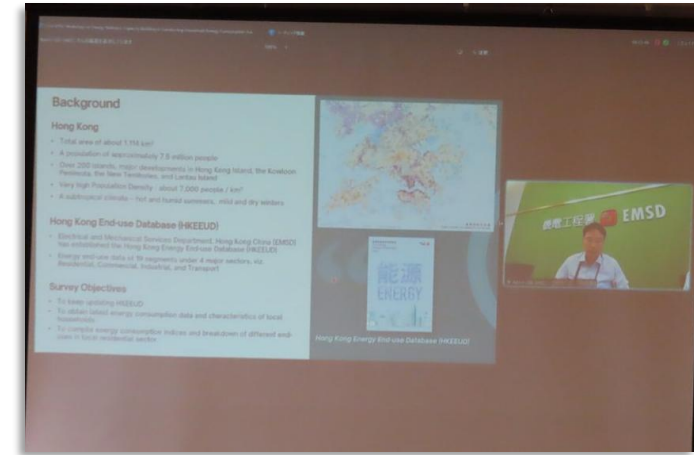
Session 3a – Household energy consumption survey

- **Dr Pudji Ismartini**, Statistics Indonesia (Badan Pusat Statistik, BPS), Indonesia
 - Presented on capturing end-use energy consumption in the economy through the National Socioeconomic Survey (SUSENAS).
 - Explained that while supplier sales data are traditionally used, SUSENAS provides more accurate household energy insights through direct surveys.
 - The challenges **identified include lengthy interview times, consumption pattern shifts during holidays, and respondent fatigue.**
 - Emphasized that improving household energy data is essential for informed policymaking and for achieving the Sustainable Development Goals.
- **Ms Diana Bunagan, Mr Kleffaine-J Viernes**, Department of Energy, Philippines
 - Shared results from the 2023 Household Energy Consumption Survey (HECS), covering 45,000 households nationwide
 - Applied a two-stage cluster sampling design to collect data on electricity, petrol. products, and renewable energy for lighting, cooking, and transport.
 - Examined fuel switching, conservation practices, and energy program awareness.
 - Conducted through extensive training, field supervision, and both paper-based and digital interviews.
 - Highlighted **the importance of HECS in supporting evidence-based energy planning and policy development.**

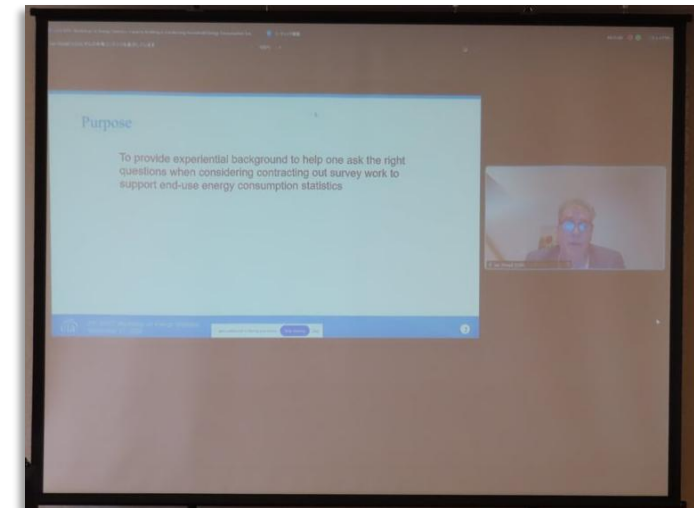


Session 3b – Other energy consumption survey

- **Mr Kevin Lee, Mr Raymond Yuen, EMSD***, Hongkong, China
 - Presented HKC's residential energy consumption survey that supports the Hong Kong Energy End-use Database (HKEEUD)
 - Used a stratified sampling by housing types and districts, self-report energy data via online questionnaires, verified through follow-up visits or calls.
 - Addressed key challenges such as access restrictions, low response rates, and incomplete billing data through official announcements, flexible participation options, and estimation techniques.
 - Emphasized the **importance of careful planning, concise questionnaire design, and robust quality control.**
- **Dr Ian Mead**, Energy Information Administration (EIA), U.S.
 - Shared insights from US's Residential Energy Consumption Survey (RECS), focusing on lessons for contracting out survey work.
 - Emphasized the importance of combining household-reported characteristics with utility billing data, noting that contractors often lack energy expertise and require close coordination.
 - **Reconciliation between household and utility data is key to validating responses, especially for estimating space heating.**
 - End-use modeling relies on billing data, housing characteristics, and weather information, using either statistical or engineering approaches.



*Electrical and Mechanical Services Department (EMSD)



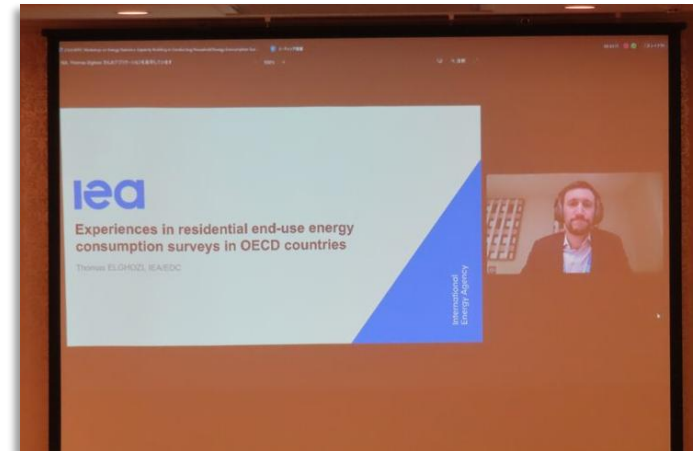
Session 3b – Other energy consumption survey

- **Mr Mohamad Faiz bin Anuar**, Energy Commission (ST), Malaysia
 - Presented his agency's outsourcing approach to the economy's Energy Consumption Survey, covering residential, commercial, and manufacturing sectors.
 - The 21-month project (May 2025–Jan 2027) aims to collect data from 12,000 samples economy-wide
 - ST appointed a contractor to manage fieldwork, allowing ST to focus on oversight, methodology, and integration into the economy's EBT.
 - Mentioned that **participation is encouraged through e-wallet incentives, awareness campaigns, and local engagement.**
 - ST emphasized future plans to retain internal control over design while outsourcing execution, and to collaborate closely with the Department of Statistics Malaysia for enhanced credibility and coverage.



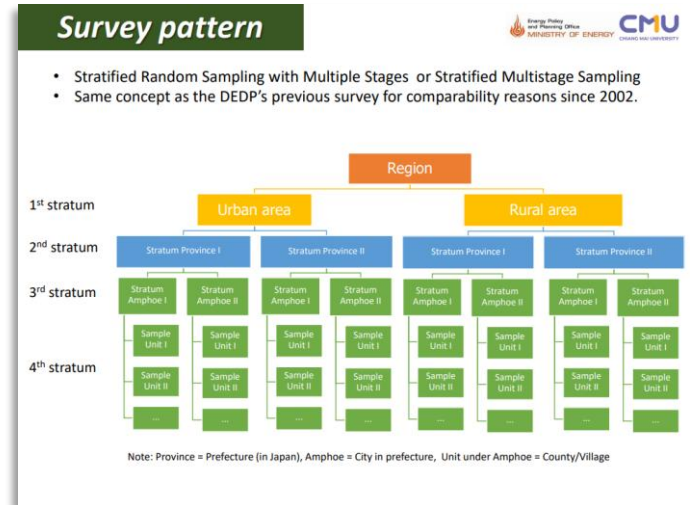
Session 3c – Insights from International Partners

- **Ms Agnieszka Koscielniak**, International Energy Agency (IEA)
 - Presented the IEA Energy End-uses and Efficiency Indicators Questionnaire, focusing on the residential module.
 - Highlighted the importance of detailed end-use data on space heating, cooling, lighting, and appliances to understand energy use and shape policy.
 - Covered data collection on dwelling characteristics, fuel types, appliance stocks, and macroeconomic indicators across 61 economies.
 - **Stressed the need for clear definitions, internal consistency checks, and plausibility testing to ensure data reliability.**
 - Emphasized cross-checking with government statistics and energy balances.
- **Dr Thomas Elghozi**, International Energy Agency (IEA)
 - Shared experiences from residential end-use energy consumption surveys among OECD members.
 - Emphasized the need for careful survey planning, use of existing data sources, and alignment with national statistical practices.
 - Discussed survey design principles, sampling strategies, and activity data collection on demographics, dwelling characteristics, and appliance usage
 - Highlighted the **importance of clear documentation, repeatability, and international comparability.**
 - Presented IEA tools including manuals, guidebooks, and modeling toolkit.



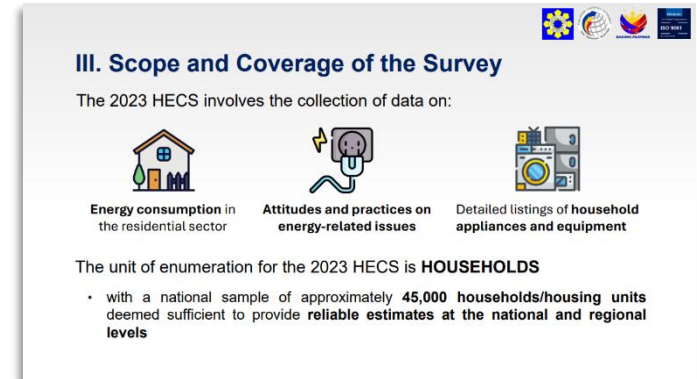
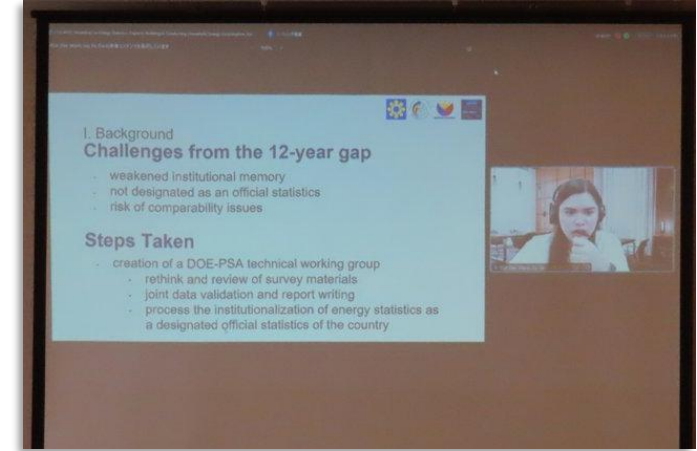
Session 4a – Survey design

- **Dr Wongkot Wongsapai**, Office of National Higher Education Science Research and Innovation Policy Council of Thailand
 - Presented their extensive experience with household energy consumption surveys and shared their best practices in survey design.
 - Emphasized the importance of **separating households into urban and rural** strata first, then drill down by province, district, and local area. This ensures results are representative and statistically valid across different geographic and socioeconomic contexts.
 - Highlighted the benefits of **having clear structured survey parts** (such as household info, end use, energy sources, etc.) to avoid gaps and make data easier to analyze by sector.
 - Recommended **collecting detailed appliance data** (for each appliance, the power rating, quantity owned, usage hours per day, days per week, and seasonal patterns).
 - Stressed the need to **maintain survey consistency across time** for comparability, so that structural changes in consumption patterns could be tracked over time.
 - Shared that they benefited from **engaging local universities to tap into local knowledge** and improve geographic coverage.



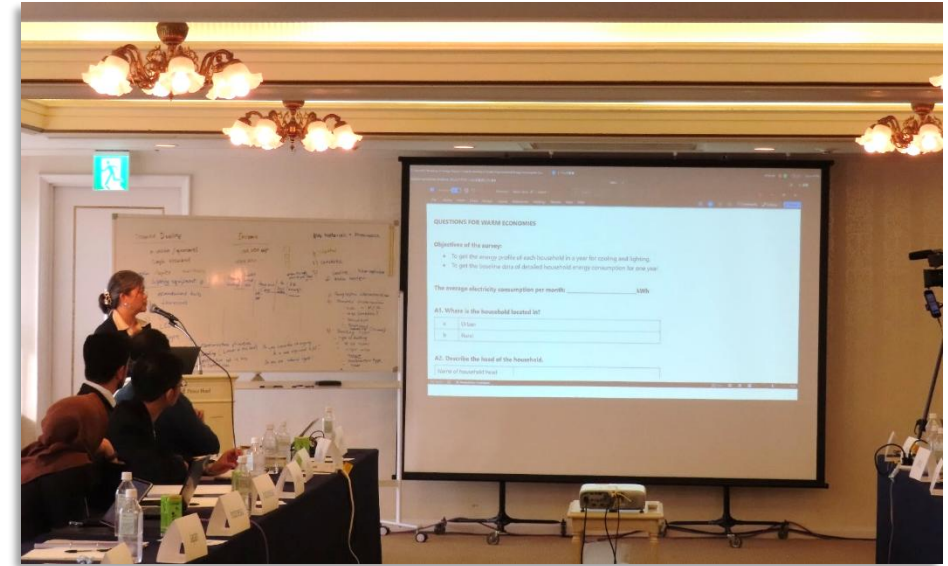
Session 4a – Survey design

- **Ms Den Marie Joy PE**, Statistical Specialist, Philippine Statistics Authority
 - Presented the Philippines' experience on household energy consumption survey design and implementation
 - Highlighted the need to **capture a clear household and geographic profile**, including urban–rural status, location codes, household composition, and basic demographics to anchor all energy indicators.
 - Specified the **collection of comprehensive energy sources, consumption, and expenditures**, covering all fuels and electricity, their quantities, costs, and end-use purposes to map the household fuel/energy mix.
 - Detailed the importance of **identifying major energy-consuming and energy-efficient technologies** by carefully recording appliances, equipment, and transport (including types, numbers, capacities, usage patterns, and vehicle fuel use).
 - Stressed **gathering behaviours, attitudes, and awareness on energy**, such as efficiency practices, fuel-switching history and reasons, perceptions, and knowledge of energy programs to understand drivers of energy use.



- **Breakout Session 1: Warm and Cold**
 - Appliances were divided based on the impact of climate.
 - Space Heating and Cooling
 - Water Heating
 - Lighting

- **Breakout Session 2: Emerging and Developed**
 - Appliances were divided based on the financial capabilities
 - Kitchen
 - Clothing-related Equipment
 - Water Pump and Heater
 - Entertainment Technologies / ICT Devices



- **Mr Glen Sweetnam**, former EGEDA Chair
 - Expressed appreciation to the EGEDA Secretariat for successfully organizing a substantive workshop.
 - Noted that the workshop stood out from typical presentation-heavy sessions by promoting genuine collaboration.
 - Breakout group discussions were particularly effective in shaping the draft residential energy survey questionnaire.
 - Invited economies to reflect on their next steps in residential energy survey implementation.



- **Viet Nam** aims to enhance residential energy data by engaging the National Statistics Office and exploring cost-effective survey integration, supported by university collaboration.
- **USA** plans to revisit its survey priorities, especially around EV electricity consumption, and explore alternative data methods to improve household energy analysis.
- **Thailand** is shifting toward qualitative research, focusing on behavioural change, energy labelling, and residential emissions tracking to support its NDC goals.
- **Chinese Taipei** is considering increasing survey frequency and integrating cross-sector data, while exploring thematic surveys on emerging topics like AI.
- **The Philippines** is forming a technical working group to support strategic survey design and implementation, emphasizing inter-agency collaboration.

- **Papua New Guinea** will refine its questionnaire and expand its survey to a second province, applying lessons learned from the workshop.
- **Malaysia** is preparing for a pilot survey in November and a full rollout in December, incorporating workshop insights to strengthen its approach.
- **Korea** shared its appliance-level tracking system and annual household survey model, highlighting the benefits of consistent data collection and efficiency labelling.
- **Indonesia** emphasized collaboration between the Ministry of Energy and NSO, with a focus on improving data quality and aligning with government account accounts.
- **China** plans to explore administrative data sources and university-led modelling to support future survey efforts, with enterprise-level insights from China Southern Power Grid.
- **Chile** will simplify its next residential survey to reduce respondent fatigue and plans to collaborate with utility companies to access billing data directly.

Thank you for your kind attention!

EGEDA Secretariat

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