
Summary Record

34th EGEDA/58th EGNRET Joint Meeting Hosted by the United States 4-5 April 2023

The 34th meeting of APEC Expert Group on Energy Data and Analysis (EGEDA) was held jointly with the 58th APEC Expert Group on New and Renewable Energy Technologies (EGNRET) meeting on 4-5 April 2023 in Honolulu, Hawaii, USA. This is the first time that the EGEDA meeting was held jointly with EGNRET in view of the increasing concerns on new and renewable energy technologies data and statistics. This meeting was hosted by the United States and organized by Hawaii Natural Energy Institute, HNEI.

Delegates from 12 APEC member economies (Australia; Brunei Darussalam; Hong Kong, China; Japan; Republic of Korea; Papua New Guinea; The Philippines; Singapore; Chinese Taipei; Thailand, the United States and Viet Nam), and representatives from four APEC fora, including EWG, APEC Expert Group on Energy Efficiency and Conservation (EGEEC), Expert Group on Clean Fossil Energy (EGCFE) and Asia Pacific Energy Research Centre (APEREC) attended. In addition, representatives from three organizations including International Renewable Energy Agency (IRENA), Hawaii National Energy Institute (HNEI) and US-Support for Economic Growth in Asia (US-SEGA) participated in the Joint Meeting as observers and guest speakers (**ANNEX 1**).

Day 1—4 April 2023

❖ Opening Session

The **Welcome Remarks** were delivered by **Dr. Cary Bloyd**, Senior Advisor, Pacific Northwest National Laboratory, the United States. He highlighted the importance of the joint meeting and collaboration and sharing of facts and ideas to achieving APEC clean energy goals. He also mentioned that the outcome of the joint meeting and collaboration will be reported to EWG.

In his opening remarks, **Mr. Glen Sweetnam, Chair of EGEDA**, extended his gratitude to the United States for hosting the event. He mentioned the importance of gathering together to understand current developments on new energy technologies and learn from each other how to address the challenges that come with the collection, and in providing reliable and accurate data.

Dr. Chi-Wen Liao, Chair of EGNRET introduced himself as this was his first EGNRET meeting as Chair. He expressed his appreciation to the United States for hosting this meeting. He was glad to have the first joint meeting between EGNRET and EGEDA and looked forward to working with the members.

❖ Host Economy Presentation

Ms. Beth Urbanas, Deputy Assistant Secretary of International Affairs of US DOE delivered the host presentation. She presented notable developments in the U.S. including hydrogen and clean energy projects, Inflation Reduction Act (IRA), Earthshots and the Bipartisan Infrastructure Law. She also mentioned that the current framework of the U.S. focuses on the APEC 2023 theme: *“Creating a Resilient and Sustainable Future for All”*. Following were the important notes of the presentation:

- The Bipartisan Infrastructure Law provides funding for federal infrastructure including investment for clean transportation, water, power and resilience to climate change.
- The IRA would help the economy in confronting the threat brought by climate crisis. In terms of budget, IRA’s duration is 10 years, which would benefit the creation of the climate and

clean energy policy and promote electrification which would send a strong signal to the market. The Law would help the promotion of heat pumps, water heaters, solar panels, wind turbines, and EVs, strengthening the U.S. supply chain and energy security.

- Energy Earthshots is a US initiative that will accelerate breakthroughs of more abundant, affordable, and reliable clean energy solutions within the decade. The initiative will drive major innovation breakthroughs and help solve the climate crisis and help reach its 2050 net-zero carbon goals and create job opportunities for the new clean energy economy. The Earthshots includes hydrogen shot, long-duration storage shot, carbon negative shot, enhanced geothermal shot, floating offshore wind shot, and industrial heat shot.

❖ Cross-fora updates

EWG updates

Ms. Ariadne BenAissa, EWG Lead Shepherd presented the EWG updates. She mentioned that the US will host the Ministerial, Senior Official and EWG meetings this year. EWG65 takes place in Detroit, Michigan, USA on 19-22 May 2023.

She added that reviewing energy security items is significant due to Ukraine crisis. Finally, she reiterated the importance of fulfilling APEC goals and having more female participants at workshops and meetings.

EGNRET updates

Dr. Tarcy Sih-Ting Jhou, EGNRET Secretariat reported on the meeting outcome of EGNRET 57 Meeting, and the selection for the positions of EGNRET Chair and Vice Chair for the 2023-2024 term. She also reported EGNRET projects updates.

EGEDA updates

Ms. Elvira Torres Gelindon, EGEDA Secretariat, reported on the status of data collection (annual and monthly-JODI), APEC energy publication, and the recently conducted in-person training activities and workshops. The following were the highlights of the report.

- Future workshops and training will hopefully be held in person hence, the secretariat encourages members to participate in these training courses.
- The next workshop is focused on hydrogen and district cooling. In view of the issues raised during the discussion on the definitions and methodologies in the collection of emerging new technologies, it could probably be expanded to include e-fuels, storage batteries, etc.

EGEEC updates

Ms. Jovian Cheung, EGEEC Secretariat, reported that the EGEEC60 meeting was held on 15-17 March 2023 in Hong Kong, China. She also updated that Dr Liu Meng from China was selected as the new Chair and Ms Jovian Cheung from Hong Kong, China as the Vice Chair of EGEEC from July 2023 to June 2025.

Ms. Cheung highlighted EGEEC's close collaboration with the International Energy Agency (IEA), Energy Efficiency Hub (EE Hub), the World Green Building Council (World GBC) and Collaborative Labeling and Appliance Standards Program (CLASP), EGEDA, and EGNRET. The next meeting will be hosted by the Philippines in October 2023.

EGCFE updates

Ms. Reiko Eda, Chair of EGCFE reported on the rescoping of EGCFE by which she was appointed as the new chair for 2023-2024 term and revised its Terms of Reference. As the Vice Chair post is still open, she shared that members are encouraged to nominate a candidate.

Future plans were also reported such as the upcoming EGCFE 2023 meeting to be held on 20 April 2023. She mentioned that energy transition and energy security are the increasingly important issues EGCFE is focusing on such as fossil fuel decarbonization technologies, including hydrogen, ammonia, and CR/CCUS, in addition to existing fossil fuels.

APERC

Mr. Ario Jati, Senior Researcher, APERC presented the APERC recent activities including the updates of the 9th edition of APEC Energy Outlook, the Fossil Fuel (gas and coal) reports and the Outlook modeling training which was held on 6-10 March 2023.

On scenario making **Mr. Jen-Yi Hou, EGEDA Vice Chair** suggested to rediscuss with the economies where the Outlook roadshows were conducted to ensure that all issues and concerns of the roadshow are captured well. Mr. Sweetnam shared that during the roadshow economies were cautious on the terms “carbon neutrality” or “carbon zero” .

❖ **Energy statistics reports**

EGEDA

Overview of APEC Energy Situation (including Tracking of APEC Energy Goals)

Ms. Gelindon of the EGEDA secretariat shared an analysis on the energy demand and supply situation in APEC in 2020. The report indicated a decrease in energy supply and consumption between 2019 and 2020 due to the lockdown measures imposed during the pandemic. The report also highlighted the progress of APEC goals such as the increasing share of renewable energy to the energy mix and reduction in energy intensity, which indicated that APEC goals are likely achievable.

However, it was noted that the significant improvement in energy intensity may be partly attributed to reduced mobility during the pandemic, and hence the post pandemic energy consumption should be closely monitored.

IRENA

Latest Trends in Renewable Energy in APEC economies

Ms. Nazik Elhassan, Energy Statistician from IRENA reported on the latest trends in renewable energy in APEC economies including the challenges in renewable energy data collection and analysis. She also highlighted the differences in electricity generation reporting between APEC and IRENA. She likewise presented some key points for the round table discussion.

The EGEDA Vice Chair suggested that EGEDA work closely with IRENA and look into the differences in the reporting and identify the possible sources of the differences. The EGEDA secretariat acknowledged the suggestion and affirmed that EGEDA will look into that. Ms. Gelindon also shared the methodology that EGEDA adopts in estimating the ratio of non-renewable municipal waste: 50% of the total amount of municipal waste for those economies that do not conduct the waste quality survey.

Viet Nam shared that the economy would collaborate and work with other member economies to achieve the APEC energy goal.

United States

Strategies for Collecting Renewable Energy Data

The US presentation served as a kick-off for the roundtable discussion of the members’ challenges and methodologies in collecting data. **Ms. Lejla Villar, EIA Team Lead**, presented the strategies for collecting renewable energy data in the US. In collecting energy data, EIA is guided by the question “what information are needed and how will this information be collected”. The following were the strategies that EIA implements for certain situations such as:

- 1) How has EIA adjusted its survey methods and data cleaning, compilation, and reporting procedures to adapt to the dramatic increase in renewable energy production and consumption?
 - o Modified established survey forms to better understand key drivers of renewable activity
 - o Developed new survey forms to fill data gaps
 - o Developed models to cover areas that are impractical for survey
- 2) In addition to electricity-based participation, how has EIA handled non-power renewable energy?
 - o Developed surveys specifically designed for biofuel and biomass production

Several issues were raised after the U.S. presentation. EIA was asked how the agency is able to clean and verify the accuracy of data. Ms. Villar mentioned that the EIA regularly checks the collected data and the frame using information provided by regional organizations, administrative data that companies are required to make public, third-party purchases (such as consulting companies) and internal models, among others. In addition, EIA leverages data collected by other Federal agencies, when appropriate. This includes customs data and satellite data. In the case of satellite data, for example, EIA is beginning to investigate how to leverage these data to validate or supplement the data EIA collects, including for example the location of solar PVs.

EIA is mandated to collect data and clearance is needed from the Office of Management and Budget before EIA can collect data. As part of the clearance process, EIA sets and justifies thresholds for what data is to be collected.

❖ Round table discussion

Guided by the foregoing U.S. experience, the EGEDA Chair led the round table discussion on members’ methodology, estimation and sources of data and the following were some of the points provided by the members.

Economy	Update
Australia	<ul style="list-style-type: none"> • Shared that currently, solar PV data were obtained from in-house estimation based on capacity, but Australia is considering moving to publicly available estimates that utilize satellite data. • More work is needed in the collection of hydrogen and batteries data as these are not currently available.

Brunei Darussalam	<ul style="list-style-type: none"> • Collects data (including petroleum and gas) from power producers and electricity authority. • Reports that were submitted need further verification and conversion for consistency.
Hong Kong, China	<ul style="list-style-type: none"> • Shared that 85% of renewables were from municipal waste. • Studies are in place for the collection of hydrogen data.
Japan	<ul style="list-style-type: none"> • Submits reports to the government not only RE from waste to energy but also plastics and other bioenergy. • To check the quality of data, a municipality survey is conducted every 3 months.
Korea	<ul style="list-style-type: none"> • Shared that the economy targets 20% share of RE in the mix by 2030.
Papua New Guinea	<ul style="list-style-type: none"> • As the agency is just newly created, it needs capability enhancement in data collection and analysis to prepare their energy balance table. • Capacity building in energy statistics required to prepare PNG's greenhouse gas inventory; conduct energy modeling to guide the preparation of their National Energy Transition Plan 2023-2030.
The Philippines	<ul style="list-style-type: none"> • Shared that targets and directives were from National Renewable Energy Program. • A household energy consumption survey is set to be conducted this year.
Singapore	<ul style="list-style-type: none"> • Shared that hydrogen data collection strategy is in place in anticipation of large amount of hydrogen in the future.
Chinese Taipei	<ul style="list-style-type: none"> • The industry sector submits renewable energy data such as bioenergy and solar energy. • Developing a methodology to estimate missing data such as heat and agriculture energy consumption data.
Thailand	<ul style="list-style-type: none"> • Shared difficulty in collecting data, the economy is developing a methodology in the collection of hydrogen data.
Viet Nam	<ul style="list-style-type: none"> • Currently studying hydrogen data collection. • The economy needs capability enhancement on data analyses and how to collect new and renewable energy.

Day 2—5 April 2023

The second day started with two more EGEDA reports as follows:

Update on Hydrogen Data Collection Template

Mr. Nobuhiro Sawamura, Senior Researcher, APERC provided a report on EGEDA's efforts in collecting hydrogen data. He mentioned the international meetings that the Energy Statistics and Training Office (ESTO) of APERC has attended where the proposed template was introduced.

During Q&A, **Dr. Tom Lee**, EGNRET secretariat suggested that EGEDA review the template to ensure the consistency of categories. He also raised concerns on the definitions of e-fuels and biofuel. A clear definition would help the consistency for data collection and analysis. The EGEDA secretariat appreciated the suggestion and mentioned that ESTO regularly attends international meetings to discuss the definition and methodology of these new energy technologies and EGEDA secretariat assured that members will be updated with the result.

Mr. Hou, Vice Chair of EGEDA reiterated his suggestion that the secretariat extend its pilot testing of the hydrogen data collection to give enough time for revision of questionnaires if needed. Also, as there are OECD members in APEC that submit data to IEA or other international organizations, it is important to unify the forms that are used in the collection of data. The EGEDA secretariat welcomed the suggestions and assured the members that APEC's questionnaire and tables are aligned with IEA and other international statistics agencies as much as possible.

The EGEDA Chair asked the members if there are updates on the collection of hydrogen production/consumption that were reported in the EGEDA 33 meeting. The following were the updates:

- **Japan** has several pilot studies in place.
- **Thailand** is currently conducting study/demonstration projects on the use of hydrogen for transport.
- **Hong Kong, China** accepted the reality that hydrogen will be an emerging new technology and hence, in preparation, the economy is formulating plans for the use of hydrogen and ammonia. It was also mentioned that town-gas could be the source of hydrogen in the economy that can be used for transport, especially large buses and raised concerns as well on the need for capability enhancement in the collection.

Finally, the secretariat informed the members of the scheduled APEC Energy Statistics Workshop in 2023 will include hydrogen as one of the main topics. The EGEDA Chair encouraged the members to participate in this important activity.

JODI Data Submission in APEC

Ms. Risa Pancho, Researcher, APERC, reported on the progress of the data submissions for JODI Oil and Gas in APEC region by giving explanations about JODI participation assessment, reports on smiley faces, sustainability, timeliness, and completeness of these data submissions. After the report **Singapore** raised its concern on the reporting of completeness as its monthly submission depends largely on the submission from their stakeholders and are generally available only at the end of the year. **PNG** expressed again its need for capability enhancement on data collection and compilation. The EGEDA secretariat will look into these matters.

❖ Progress/Status of EGNRET Projects

The EGNRET Secretariat gave a brief background on APEC project submission and funding process. She described the different funding sources that EGEDA members may tap if the members are interested in developing project proposal. She mentioned that Hong Kong, China submitted the concept note for session 1 of 2023. Finally, the secretariat presented EGNRET's ongoing and completed projects.

The following members reported the status of their projects.

Economy	Update
Hong Kong, China	Its new project, "Promoting Digital Solar Resource Maps and Management Technologies in Advancing Renewables Growth in APEC,"

	aims to promote digital technology and innovate and improve capacity in the development and deployment of renewables, particularly solar energy, of APEC economies. EWG endorsed this project's concept notes.
Thailand	Introduced its project on achieving carbon neutrality through the bio circular green (BCG) economy model. The workshop was held in the margins of the joint EGEDA34/EGNRET58 meeting from April 6 to 7, 2023, in Hawaii.
United States	Explained two ongoing projects. The first project is about lessons learned on resilience and uptake of variable energy resources from island grids that support APEC clean energy goals, focusing on ten grids in the APEC region (selected case studies). This project will be completed within 2023. The second project is the workshop furthering university collaboration to support data gathering and analysis in energy efficiency, renewable energy, and energy resiliency.
Viet Nam	Shared the result of its hybrid workshop on promoting renewable energy for rural and remote areas.

❖ Meeting theme presentation: Economy Movement toward Carbon Free Electricity

Economy	Presentation
Hong Kong, China	Described its Climate Action Plan 2050. The economy has the potential to have a large floating LNG storage and regasification unit in Asia.
Japan	Described its strategic energy plan to change its power generation mix, including hydrogen and ammonia targets for 2030. The economy projects realization of carbon neutrality by 2050.
Singapore	Presented its Singapore Green Plan 2030, a long-term and living plan in advancing the economy's agenda on sustainable development.
Chinese Taipei	Presented its 2050 Net Zero target including the proposed 12 key strategies.
Thailand	Presented its Climate change target, National Energy Plan, Energy Efficiency Plan and Alternative Energy development Plan.
United States	Introduced its target "Net-zero emission economy by 2050 and 50-52% reduction by 2030", "100% carbon-pollution-free electric sector by 2035" and long-term strategy.

- HNEI delivered a special presentation on "*Lessons Learned Along Hawaii's Energy Transition Journey*", describing Hawaii's isolation as a challenge and its huge opportunity for sustainability.
- Finally, Mr Jati of APERC delivered a special presentation on Renewable Energy Certificate (REC)

implementation in the six APEC Southeast Asia (SEA) economies. Starting from the definition of REC, the REC implementation in the developed REC market and in APEC SEA, key summary, and some findings.

❖ Discussion on the APEC Goals

On behalf of the EWG Small Working Group analyzing the potential for new energy-related goals, Ms. Cheung presented its background, progress and the result of the group's discussion. The members' views were grouped into the following four categories:

- 1) Timeframe
- 2) Energy Efficiency-Related Goals
- 3) Renewable Energy Related Goals
- 4) Energy-Related Emission Goals

The discussion outcomes were reported at the 64th EWG meeting in November 2022. Given that the EWG members raised diverse views on the potential new energy-related goal(s), the EWG Lead Shepherd suggested circulating an option paper to collect broader opinions from all members. The following were the two options identified:

- Option 1 – Remain unchanged with current goals and explore new goals when data are available
- Option 2 – Continue to explore new goals

During the discussion the following comments were received from the members:

The **United States** shared that decarbonization of the power sector is the clearer pathways toward green goal. The US amplified its power sector goals by setting aggressive power goals in the mid-term towards 2025.

Viet Nam shared its intention to revise Viet Nam's own goals.

Japan agreed that APEC members should be careful in discussing new goals and that it should not be changed without evaluating accomplishments with the current goals. Each economy is making its own strategies, different positions and opinions. Japan further said that at the moment, goals by sector cannot be determined as it is very precise and hence, subject to the data to be collected and analysed.

❖ Further areas of collaboration between two Expert Groups

Both expert groups see the importance of enhancing collaboration between expert groups. EGEDA Chair opened the discussion on the collaboration and following were raised.

- The **EGEDA Vice Chair** highlighted that it is important that each experts' groups know each other's works. In EGEDA, most members are energy statisticians and most likely not experts on technical issues or aware of the latest progress in the latest technologies. The EGEDA Chair further suggested initiating a concept note for a dialogue that will bring together the respective experts in the form of a seminar/workshop.
- **The US** elaborated that the groups need to look into pathways where they can see each other's model path. The goals should be comprehensive, and an annual meeting should be organized to make sure that all ideas are aligned, and all efforts lead to the same objective.
- **Hong Kong, China** proposed that each APEC member economy collaborates with the expert groups to conduct capability enhancement on data collection. Joint meetings should be organized regularly to ensure members are well informed of the importance of the expert

groups. In addition, Research Centres should consider integrating expert groups' specific issues, e.g., hydrogen, e-fuels, etc.

- The importance of the members' attendance in meetings and workshops was also raised. The Lead Shepherd supported the suggestions and mentioned that this concern will be raised at the EWG meeting. It was also mentioned that a hybrid meeting or workshop be held to ensure wider member participation.
- There was a suggestion to involve the Transportation Working Group in joint collaboration to cover transport-related topics, e.g., EV vehicles. In this connection also, EGEEC welcomed the idea of working with other working groups.

❖ **Next Expert Group meeting**

- The EGNRET 59th meeting will be held jointly with the EGEEC 61st meeting, to be hosted by the Philippines in October 2023.
- The EGEDA 35th meeting will be held in January 2024 in Hong Kong, China.

❖ **Other business**

- The EGEDA Chair mentioned about the suggestion made by the secretariat that in the upcoming version of the APEC Energy Statistics Publication, only the Statistics Handbook would be printed in hard copy while the APEC publication would be exclusively available on the EGEDA website. There was no objection from the members.

Adjournment

There being no further issues and concerns, the meeting was adjourned.

ANNEX 1

No.	Title	Name	Economy
1	Ms.	Caitlin MCCLUSKEY	Australia
2	Mr	Jasrin SERUDIN	Brunei Darussalam
3	Mr	Ak Yusri Suryakusuma Bin Pg Dato Paduka Hj Yusof	Brunei Darussalam
4	Ms.	Sin Man Becky CHIM	Hong Kong, China
5	Mr.	Takao IKEDA	Japan
6	Mr.	Himchul SHIN	Republic of Korea
7	Mr.	Larsen DABOYAN	Papua New Guinea
8	Mr.	Timothy MAIS	Papua New Guinea
9	Ms.	Ruby B. DE GUZMAN	Republic of the Philippines
10	Ms.	Rosanna Yabut TEJUCO	Republic of the Philippines
11	Mr.	Jen-Yi HOU	Chinese Taipei
12	Ms.	Wei-Lu WANG	Chinese Taipei
13	Mr.	Yen-Po LIAO	Chinese Taipei
14	Mr.	Alvin TAN	Singapore
15	Mr.	Kang Yang CHIA	Singapore
16	Mr.	Lucius TAN	Singapore
17	Dr.	Watchara URAIKUL	Thailand
18	Dr.	Sumittra CHAROJROCHKUL	Thailand
19	Dr.	Nuwong CHOLLACOOP	Thailand
20	Dr.	Kampanart SILVA	Thailand
21	Mrs.	Munlika SOMPRANON	Thailand
22	Ms.	Thitima PIKULTHONG	Thailand
23	Dr.	Worajit SETTHAPUN	Thailand
24	Ms	Beth URBANAS	United States
25	Dr.	Cary BLOYD	United States
26	Mr.	Lejla A VILLAR	United States
27	Mrs.	Thi Ngoc Thanh HOANG	Viet Nam
28	Mr.	Long QUANG NGUYEN	Viet Nam
29	Ms	Ariadne BENAISSA	EWG
30	Ms	Kate SELLEY	EWG
31	Ms.	Man Chit Jovian CHEUNG	EGEEC
32	Ms.	Reiko EDA	EGCFE
33	Dr.	Chi-Wen LIAO	EGNRET
34	Dr.	Tom H.T. LEE	EGNRET
35	Dr.	Tarcy Sih-Ting JHOU	EGNRET
36	Mr.	Glen SWEETNAM	EGEDA
37	Mrs.	Elvira Torres GELINDON	EGEDA
38	Mr.	Nobuhiro SAWAMURA	EGEDA

39	Ms.	Risa PANCHO	EGEDA
40	Mr.	Ario Panggi Pramono JATI	APERC
41	Ms	Nazik Hassan ELHASSAN	IRENA
42	Dr.	Adam BORISON	US-SEGA
43	Mr.	Leon ROOSE	HNEI
44	Mr.	Damon SCHMIDT	HNEI
45	Mr.	Marc M MATSUURA	HNEI