

The 1st Joint Meeting of Four Expert Groups of the APEC Energy Working Group

Hong Kong, China

9 and 10 April 2025

Meeting Summary

1. Introduction

The 1st Joint Meeting of Four Expert Groups of the APEC Energy Working Group (EWG) was held in Hong Kong, China (HKC) on 9 April 2025 and in the afternoon of 10 April 2025. This joint meeting brings together the four expert groups of the APEC EWG for the first time, namely the Expert Group on Energy Data and Analysis (EGEDA), the Expert Group on Energy Efficiency and Conservation (EGEEEC), the Expert Group on New and Renewable Energy Technologies (EGNRET), and the Expert Group on Clean Fossil Energy (EGCFE). Each expert group conducted its individual meeting in the morning of 10 April 2025. A joint meeting between EGNRET and EGCFE was held in the same morning.

The joint meeting was accompanied by the APEC Workshop on Promoting Energy Efficiency Enhancement in Electricity Generation (EWG 211 2023A), and the 8th Oil and Gas Security Network (OGSN) Forum (EWG 07 2024S), both held on 8 April 2025, and along with a technical visit on 11 April 2025.

Delegates from eighteen (18) APEC member economies (Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Papua New Guinea; Peru; The Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; and Viet Nam), and representatives from eight (8) APEC fora and sub-fora (APEC Secretariat; EWG; EGEDA, EGEEEC, EGNRET, EGCFE, Asia Pacific Energy Research Centre (APEREC); APEC Sustainable Energy Center (APSEC)), and four (4) international organisations (International Energy Agency (IEA), International Renewable Energy Agency (IRENA), International Energy Forum (IEF), Collaborative Labelling and Appliance Standards Program (CLASP)) participated in the joint meeting.

2. Joint Meeting of Four Expert Groups (9 April 2025, 09:00 – 16:20)

The session was co-chaired by Mr. Takehiko SAEKI (Acting EGCFE Chair), Mr Glen

SWEETNAM (EGEDA Chair), Dr LIU Meng (EGEEC Chair), and Dr Chi-Wen LIAO (EGNRET Chair).

2.1 Official Welcome

Mr TSE Chin-wan, Secretary for Environment and Ecology, HKC, welcomed attendees to the inaugural Joint Meeting of the Four Expert Groups. He highlighted the critical role of APEC economies, which account for 60% of global energy consumption. As the member economies pursue rapid and ongoing economic growth and urbanisation, energy demand and carbon emissions in the region will continue to rise, making it crucial to accelerate the transition to green energy, mitigate climate change risks and ensure energy security and sustainable economic development. He also outlined HKC's commitment to achieve carbon neutrality before 2050, through four major decarbonisation strategies, namely, net-zero electricity generation, energy saving and green buildings, green transport, and waste reduction. HKC is actively implementing various decarbonisation measures, such as planning infrastructure to import more zero-carbon electricity from neighbouring regions, enhancing energy efficiency in buildings, promotion of electric vehicles and promoting hydrogen energy development for achieving a green and sustainable future.

2.2 Opening Remarks

Prof. SHAN Weiguo, APEC EWG Lead Shepherd (LS), delivered the opening remarks, emphasizing the importance of this joint meeting of the four expert groups to enhance cross-forum communication and collaboration, promote cooperation among economies, and provide an excellent example for organising future meetings. LS identified three major challenges in the current energy transition: the impact of rapid electricity demand growth on power system stability, the need for increased efforts to improve the economic competitiveness of low-carbon energy, and tariff barriers that hinder energy trade and technology development. LS shared three suggestions: balance energy security with affordability, strengthen international cooperation and energy diversification, and embrace new technologies like artificial intelligence to enhance efficiency. He concluded by thanking attendees and encouraging representatives to share insights and innovative solutions for sustainable energy development.

2.3 Host Economy Presentation

Mr. POON Kwok-ying, Raymond, Director of Electrical and Mechanical Services Department (EMSD), HKC, highlighted HKC's longstanding participation in the EWG since 1991 and contributions including organising meetings, projects and leadership roles in the EWG. He emphasized the critical role of collaborative efforts in combating climate change, noting HKC's pledge for carbon neutrality by 2050 and achievement in reducing energy intensity by 33.5% since 2005 and its.

Mr. POON shared various initiatives to achieve carbon neutrality, including establishment of energy database, benchmarking tools, and mandatory energy audits for buildings, which have led to a 20% reduction in energy utilization. District Cooling System was showcased as it provides multi-faceted benefits, while advancements in AI and data analytics are being leveraged to optimize energy management.

Mr. POON also discussed the development of renewable energy technologies, including the waste-to-energy facilities and innovations such as the Hong Kong Solar Irradiation Map and Integrated Self-sustained renewable-Energy Explorer (iSEE) for facilitating RE adoption. He outlined future plans for hydrogen development and the integration of AI in building energy management systems.

2.4 Updates from APEC fora and sub-fora

Eight (8) presentations were conducted as follows:

2.4.1 APEC Secretariat Update

Mr. Takayuki NIIKURA, Project Director of the APEC Secretariat, introduced the important deadlines for the Concept Note and Project Proposal for Project Session 1, 2025. He reminded project overseers to upload the Concept Note to the website, as the deadline is April 16, 2025. Additionally, he mentioned that six (6) Concept Notes for Project Session 1, 2025, have been endorsed by members, and three (3) energy-related projects proposed by PPSTI and SCSC are seeking support from the EWG and its sub-fora.

He reminded members who wish to submit a Concept Note for Project Session 2,

2025, that the deadline is July 2, and they must ensure they use the latest template when developing the Concept Note. The requirements for applying for the EELCER fund include obtaining at least four co-sponsors. Mr. NIIKURA also shared the calendar for APEC EWG-related events, including the next EWG meeting, the Energy Ministerial Meeting, and three APEC workshops. He further introduced the SCE's instructions that EWG sub-fora should update the Terms of Reference, strategic plans, and websites.

2.4.2 EWG updates

Prof. SHAN Weiguo, APEC EWG Lead Shepherd, shared the major activities and key deliverables for the EWG in 2025, as well as the outcomes from the Senior Officials' Steering Committee (SCE-COW) meeting held in early March, including the progress on renewing the Terms of Reference (TOR) for the EWG and its subsidiary bodies, updating the EWG website, and the EWG Strategic Plan for 2025-2030.

Prof. SHAN also outlined the key work plan for 2025, highlighting three main focus areas: expanding clean electricity through carbon-free energy (CFE) technologies, enhancing grid security to ensure stable and reliable energy supply, and promoting energy innovation such as artificial intelligence.

2.4.3 EGEDA Updates

Mr. Glen SWEETNAM, EGEDA Chair, presented the latest EGEDA Updates, which provided an overview of the current status of energy data collection and processing across the APEC region. His presentation included an analysis of APEC's energy demand and supply trends, noting a return to pre-pandemic growth and a rising share of global energy consumption, despite slower population growth. He also highlighted APEC's progress toward its energy goals, with projections indicating likely achievement of energy intensity and renewable energy targets, although CO₂ emissions have remained largely unchanged, highlighting the need for further action on emissions reduction. Additionally, Mr. Sweetnam emphasized the importance of enhancing energy statistics capabilities among member economies, outlining various training initiatives and ongoing international collaborations aimed at harmonizing data

standards.

2.4.4 EGCFE Update

Mr Takehiko SAEKI of METI, Japan and acting Chair of EGCFE, reported on the group's 2024 activities and 2025 plans. Key 2024 events included joint meetings, workshops on Clean Hydrogen and Energy Transition, and reports on various fossil fuels. The APEC Oil and Gas Security Initiative (OGSI) featured forums, exercises, and studies to enhance energy security. For 2025, planned initiatives include further OGSI activities, new reports, and a workshop on cleaner fossil energy operations. Japan's hydrogen policies and the Hydrogen Society Promotion Act, aimed at supporting low-carbon hydrogen projects, and e-methane promotion activities were also discussed.

2.4.5 EGEEEC Updates

Dr LIU Meng, EGEEEC Chair, reported on the EGEEEC's recent activities during the EGEEEC 63 Meeting held in Tianjin, China, under the theme "Energy Efficiency and Energy Management: Accelerating the energy transition for a sustainable future." Key highlights included a half-day technical visit organized by CNIS, an APERC workshop on energy management standards and best practices, and participation from 11 APEC economies, 6 APEC fora, and 4 non-APEC organizations. Presentations featured cross-fora updates, economy reports, and invited contributions from CLASP, Energy Foundation China, and the Energy Efficiency Hub, with discussions focusing on demand-side response for residential air conditioning and the integration of AI. Collaboration with APERC, EGEDA, and APSEC was emphasized to enhance energy data collection and support new EWG energy goals. Governance updates included the endorsement of the EGEEEC logo, drafting of the Terms of Reference, and ongoing chair selection.

2.4.6 EGNRET Updates

Dr Chi-Wen LIAO, EGNRET Chair, provided an update on the 61st EGNRET meeting,

which was held virtually and attended by representatives from twelve economies. The meeting's theme was "New and Renewable Energy Development in the APEC Region," and members shared the latest developments in renewable energy. He also highlighted key updates from "APEC Policy Guidance to Develop and Implement Clean and Low-Carbon Hydrogen Policy Frameworks in the Asia-Pacific", including EGEDA's mention of the potential role of e-methane, EGCFE's emphasis on the importance of APEC's Policy Guidance, and APERC's plan to collaborate with both EGCFE and EGNRET, as well as to propose a new project for follow-up actions. APSEC suggested organizing more workshops and encouraging targeted APEC project submissions. Regarding EGNRET project updates, five (5) Concept Notes were submitted for Project Session 1, 2025; there are currently eighteen (18) ongoing projects, and several APEC workshops will be hosted by Chile, Chinese Taipei, the United States, and Viet Nam this year; three (3) projects have been completed, including two (2) implemented by Japan and one (1) by Chinese Taipei. Finally, Dr. LIAO announced that the next EGNRET meeting will be held in Seoul, Republic of Korea, in September or November 2025. EGNRET 64 will take place in late April or early May in Khon Kaen, Thailand, in 2026.

2.4.7 APERC Update

Dr. Kazutomo IRIE, President of APERC, presented an overview of APERC's activities. He highlighted the strong alignment of APERC's work with the four APEC energy expert groups and detailed their key research initiatives, including the APEC Energy Demand and Supply Outlook, Energy Overview, and topical studies such as the 2024 APERC Coal, Hydrogen, Oil, and Gas Reports. Dr. Irie also reported on APERC's training efforts, noting the 31st Seminar on Energy Modelling held in March 2025 and plans for the 32nd seminar in 2026, along with short-term energy statistics courses scheduled annually in Tokyo. Policy cooperation activities were emphasized, including Peer Review on Energy Efficiency (PREE) and Low Carbon Energy Policies (PRLCE). To succeed PREE activities, the capacity-building workshops for Energy Efficiency and Conservation Policy will be held in conjunction with the EGEEC biannual meetings from late 2025 onward. To succeed PRLCE activities, the capacity-building workshops for New and Renewable Energy Policy will be held in

conjunction with the EGNRET meetings from early 2026 onward. He shared updates on the Oil and Gas Security Initiative (OGSI), including the 8th OGSN Forum held in Hong Kong, ongoing newsletter publications, and recent studies on oil and gas supply security. APERC's continued support for Japan's energy resiliency projects, initiatives on energy transition, APEC Workshop on Cleaner and More Efficient Operation of the Fossil Energy Industry, and the upcoming project for Clean and Low-Carbon Hydrogen Policy Frameworks were also discussed.

2.4.8 APSEC Update

Prof. ZHU Li, President of APSEC, delivered an update on APSEC's projects and future plans. She highlighted ongoing and completed projects, including research on energy storage (EWG 03 2024S), carbon-neutral disaster-resilient cities (EWG 04 2022A), and energy access in the APEC region (EWG 05 2022S), with the latter marked by a successful workshop on APSEC's 10th anniversary. Three thematic Urban Energy Reports (2023–2025) were presented, with the 2023 report already published, the 2024 edition in progress, and the 2025 report set to launch soon. Updates were also provided on APSEC's Terms of Reference, including revised objectives emphasizing carbon neutrality and sustainable energy, strengthened activities in research and cooperation, and a shift in administrative responsibilities to Tianjin University. Prof. Zhu also outlined APSEC's proposed work plan, including completion of the Urban Energy Report series, development of a five-year plan (2025–2030), and efforts toward renewable-based urban heating and cooling. APSEC reaffirmed its commitment to new APEC energy goals, green hydrogen research, policy dialogues with Korean counterparts, and strategies to attract international scholars.

2.5 Invited Presentations

Three (3) invited presentations were conducted as follows:

2.5.1 IEA Presentation

Ms Agnieszka KOSCIELNIAK, Statistics Manager, IEA introduced IEA's foundational mission and evolution, and IEA's work. IEA conducted a comprehensive annual global assessment of energy-sector trends, and produced a global innovation review,

synthesizing over 150 highlights from the past year to inform the worldwide energy innovation agenda, and as one of five lead custodian agencies for Sustainable Development Goal 7 (SDG 7). The IEA tracks key indicators related to renewable energy, energy efficiency, and energy access. IEA is devoted in tracking progress toward goals established at COP28. COP28's final text called for doubling the global improvement rate in energy efficiency by 2030. To support this objective, the IEA provides an efficiency progress tracker that covers eight regions and over 140 countries. Policymakers can access detailed data on historical energy intensity improvements, primary energy demand, final energy consumption, and electrification rates. Additionally, the IEA compiles trends in energy efficiency investments and hosts a repository of financing solutions.

2.5.2 IRENA Presentation

Mr Julian PRIME, Head of Statistics, IRENA introduced IRENA's goal and membership, and reporter centers on monitoring and analyzing progress toward the “tripling” of renewable energy capacity by 2030, as agreed at COP28. In 2023, the world added 484 GW of new renewable installations—86 percent of all new power capacity—driven primarily by solar photovoltaic (PV) systems. The momentum accelerated in 2024, with 585 GW of renewables brought online, representing 93 percent of total capacity additions; solar PV alone accounted for roughly 75 percent of that increase.

China, the European Union, and the United States collectively dominated these additions, contributing 82 percent of new renewable capacity in 2023 and 84 percent in 2024. As a result, total global renewable capacity reached approximately 4.45 TW by the end of 2024, marking a 15.1 percent year-on-year increase. Despite this historic surge, the report highlights that the pace and geographic distribution of deployment remain uneven. Many developing regions and smaller economies lag far behind the leaders, underscoring a critical gap in delivering equitable energy access and achieving global sustainability goals.

The analysis further examines performance within APEC economies, noting that while some members have made significant strides in expanding renewables, others face policy, investment, and infrastructure barriers. To bridge these divides, the

report emphasizes the need to accelerate energy efficiency improvements and electrification efforts—particularly in industry, buildings, and transportation sectors. It also calls for enhanced international cooperation, streamlined permitting processes, and targeted financial mechanisms to mobilize private capital. Ultimately, the document concludes that although progress to date is encouraging, substantial policy reforms and investment scaling are required to meet the tripling objective and to secure a just, reliable, and cost-effective transition to clean energy by 2030.

2.5.3 IEF Presentation

Ms Amira REMADNA, Senior Market and Data Analyst, IEF introduced IEF background, as one of the world's largest neutral platforms for energy dialogue, uniting both producer and consumer countries. The IEF's core mission is to foster transparent communication on energy security, market stability, and climate change mitigation.

In the “Energy Dialogues” section, the report highlights a range of high-level and multilateral engagements. Annual events such as the Energy Outlook Seminar and Market Dynamics Forum bring stakeholders together to compare data, reconcile modelling assumptions, and improve the policy relevance of long-term projections. Additionally, the IEF co-hosts joint initiatives with the IEA and OPEC to align short-term oil market forecasts. Regional gatherings—including the Asia Energy Ministers' Roundtable, the Gas Forum, and the G20 Energy Ministers' meetings—reinforce cooperation between developed and developing economies as they navigate diverse decarbonization pathways.

In its “Research & Analysis” section, the report reviews several 2024 – 2025 publications. These include comparative short-term outlooks from the IEA, EIA, and OPEC, which illuminate differing assumptions on demand and supply trends. Other flagship studies address the Middle East's carbon capture and storage (CCS) potential and the evolving role of carbon markets in energy transitions. By offering granular market insights and technology assessments, these reports equip policymakers with evidence to inform investment and regulatory decisions.

Regarding “Data Transparency,” the IEF's leadership in the Joint Organisations

Data Initiative (JODI) is underscored. Since 2005, JODI has pooled resources from APEC, Eurostat, GECF, IEA, OLADE, OPEC, and the UN Statistics Division to publish a comprehensive global database on oil and natural gas. This initiative aims to reduce information asymmetries and enhance market predictability. Finally, the report introduces the Joint Organisations Sustainable Development Initiative (JOSI), an open data platform conceived to aggregate and expand existing sustainable development datasets. By filling reporting gaps and enabling more robust trend analyses, JOSI supports evidence-based policy and investment decisions essential for a just, secure, and sustainable energy future.

2.5.4 Korea, APEC2025 Host Presentation

Ms. Yun Kyong PARK, Director, International Corporation Division, Korea Energy Agency shared Korea's key priorities as the host economy of the 2025 Asia-Pacific Economic Cooperation (APEC), with a particular focus on the APEC Energy Ministers' Meeting (EMM). The meeting will be held under the theme "Building a Sustainable Tomorrow," structured around three core pillars: Prosperity, Innovation, and Connectivity.

The agenda emphasizes expanding clean electricity through carbon-neutral energy technologies, enhancing grid security to ensure stable and reliable energy supply, and leveraging artificial intelligence (AI) to drive energy innovation. The presentation also provides detailed information on the dates and locations of the Energy Ministers' Meeting and related Energy Working Group sessions. These efforts aim to advance energy transition and promote sustainable growth across the APEC region.

The energy agenda for the 2025 APEC Summit in Korea clearly reflects Korea's strong commitment to advancing sustainable development across the Asia-Pacific region. By emphasizing the diversification of carbon-free energy sources, strengthening grid resilience and smart infrastructure, and leveraging artificial intelligence to optimize energy management, Korea aims to present a comprehensive blueprint for regional energy transition. These interconnected focus areas form the core pathway toward realizing the vision of "Building a Sustainable Tomorrow" and signal a future of deeper regional cooperation centered on technological innovation, infrastructure modernization, and multilateral collaboration.

2.6 Member Economy Presentation

The theme of the joint meeting is " Utilizing Carbon-Free Energy Technologies to Expand Clean Electricity in APEC ". Seventeen (17) member economies presented and were summarized below:

2.6.1 Australia

Australia provided a comprehensive overview of the development of renewable energy in Australia. It outlined the significant transition in Australia's electricity mix toward renewable sources, highlighting the critical roles of solar and wind power. The document notes that renewable energy now accounts for more than one-third of total electricity generation. It further emphasizes Australia's global leadership in small-scale solar installations and discusses the regional differences in energy mixes across states and territories. Additionally, it underscores the strong growth in new renewable energy capacity and investment, the supportive government policies facilitating the energy transition, and the essential role of energy storage in the future energy system.

Australia has made remarkable progress in its renewable energy transition, particularly in the fields of solar and wind power, and is steadily reducing its reliance on fossil fuels. Although there are variations in renewable energy penetration across states and territories, strong government policy support and a growing focus on energy storage technologies signal Australia's potential to achieve its ambitious 2030 renewable energy targets. These efforts also reinforce its position as a global leader in the energy transition. Energy storage—especially large-scale and community battery projects—is regarded as a critical component in ensuring grid stability and the effective integration of renewable energy sources.

2.6.2 Brunei Darussalam

Brunei Darussalam outlined Brunei Darussalam's energy transition journey, highlighting the nation's commitment and strategic approach to achieving sustainable development. It provides a detailed overview of the Brunei National Climate Change

Policy (BNCCP), which aims to reduce greenhouse gas emissions by 20% by 2030 and achieve net-zero emissions by 2050. To meet these targets, Brunei is actively increasing the deployment of renewable energy, with goals to reach 200 MW of installed capacity by 2025 and ensure that renewables account for at least 30% of the power generation mix by 2035. It also emphasizes Brunei's efforts in improving energy efficiency and conservation. Additionally, it notes the country's participation in various international collaborations through memorandums of understanding and cooperation statements to support its energy transition and the development of a green economy.

Brunei Darussalam is actively advancing its energy transition to achieve the ambitious goal of net-zero emissions by 2050. This effort extends beyond greenhouse gas reduction and renewable energy deployment to include improving energy efficiency, developing low-carbon technologies such as hydrogen and electric vehicles, and ensuring energy accessibility and security. Through a comprehensive national policy framework, international collaboration, and targeted investments and projects, Brunei Darussalam is working to shift its energy structure from a reliance on fossil fuels toward a cleaner and more sustainable future. Its initiatives in solar and hydrogen energy, along with energy cooperation with various countries, demonstrate Brunei Darussalam's firm commitment and pragmatic approach to supporting its long-term economic and social development vision through energy transformation.

2.6.3 Chile

Chile shared its current renewable energy landscape, highlighting that as of January 2025, renewable energy accounts for 67% of total installed capacity, with non-conventional renewables representing 47%, equivalent to 16.5 GW. Within non-conventional renewables, 64% is solar and 28% wind, with solar power contributing up to 95% of electricity supply during certain periods.

Chile's long-term goal is carbon neutrality by 2050. The country is currently in the second phase of its energy transition agenda, which focuses on stimulating market development across a broader range of sustainable energy technologies beyond

wind and solar—including storage, hydrogen, and marine energy. Key development areas include:

- **Energy Storage:** Current capacity stands at 2.1 GW / 8.5 GWh, mainly battery-based, with exploration into medium- and long-duration storage technologies.
- **Hydrogen and Derivatives:** Chile is advancing 88 green hydrogen projects, 5 of which are under environmental review. Projected annual production is 527,000 tonnes of hydrogen, with electrolyzer capacity reaching 5.8 GW.
- **Sustainable Fuels:** The country promotes sustainable fuels and Sustainable Aviation Fuel (SAF), aiming for at least 50% domestic SAF use by 2050.
- **Green Shipping Corridors:** National and international corridors are being developed to decarbonize the maritime sector.
- **Marine Energy:** A national marine energy roadmap is under development as part of the broader plan to decarbonize all modes of transport.

International Cooperation: Chile actively engages in knowledge-sharing on energy efficiency, grid enhancement, smart grids, distributed generation, and green energy certification with APEC economies.

Resilience Measures: In December 2024, Chile launched its Climate Change Mitigation and Adaptation Plan for the Energy Sector, aiming to strengthen energy infrastructure resilience.

APEC Projects: Chile has completed two APEC projects on distributed system operators and coal plant conversions. In 2025, it will implement three more—on floating offshore wind farms, resilient energy policy, and hydrogen certification. In 2026, a new project on local hydrogen and derivative demand is planned.

2.6.4 China

China provides a detailed overview of China's policies and practices in transforming its energy and power systems to achieve carbon peaking and carbon neutrality goals. A key milestone is the enactment of China's first Energy Law in 2025, which offers a strong policy foundation for building a clean and efficient energy supply system. The document highlights the continuous improvements in energy efficiency and

emissions reduction of coal-fired power units. It also emphasizes the large-scale and distributed development of wind and solar energy to expand the share of clean electricity. Additionally, China emphasizes on the role of ultra-high voltage (UHV) transmission lines in enabling the long-distance delivery of clean energy. It also outlines efforts to enhance the system integration and local consumption of renewable energy through advanced technologies such as energy storage and hydrogen production.

China has demonstrated strong commitment and systematic planning in its energy transition, aiming to achieve carbon peaking and carbon neutrality through legal frameworks, technological innovation, and large-scale project implementation. Its strategy encompasses both the cleaner transformation of traditional coal-fired power and the rapid expansion of renewable energy sources such as wind and solar, supported by smart grid integration. At the same time, China is actively exploring advanced technologies like hydrogen energy and carbon capture, utilization, and storage (CCUS), all contributing to the development of a secure, clean, and efficient energy system.

2.6.5 Indonesia

Indonesia outlined Indonesia's energy efficiency and conservation initiatives, presented by the Directorate General of New, Renewable Energy and Energy Conservation (EBTKE) of the Ministry of Energy and Mineral Resources, along with the Indonesian Energy Conservation and Efficiency Society, at the 64th APEC Expert Group on Energy Efficiency and Conservation (EGEEC) meeting. The primary objective is to develop skilled energy management professionals, enhance national energy management capabilities, and support industries and enterprises through structured training and certification processes.

Indonesia also provided a detailed overview of Indonesia's regulatory framework on energy management, which includes energy consumption thresholds for various sectors and industries. Furthermore, it highlights the implementation of energy efficiency labeling and Minimum Energy Performance Standards (MEPS) programs. These measures aim to protect consumers, reduce greenhouse gas emissions, and

strengthen national energy security.

2.6.6 Japan

Japan introduced its energy policies and initiatives related to the theme of "Utilizing Clean and Low-Carbon Energy Technologies in APEC," specifically the 7th Strategic Energy Plan, which was approved by the Cabinet on February 18, 2023. This plan aims to outline the specific direction of energy policy toward 2040.

Japan is also focused on contributing to the achievement of global carbon neutrality. To advance effective global carbon neutrality initiatives, Japan emphasizes three principles. The first is "Triple Breakthrough." Japan aims to simultaneously achieve ① emissions reduction, ② economic growth, and ③ energy security. The second is "One Goal, Various Pathways." Toward our common goal of achieving net zero, we will pursue practical energy transitions through various pathways tailored to the actual situation in each country. The third is "Solutions for the World." Japan contributes to the world through the formation of clean markets, innovation cooperation, and other initiatives.

Japan also stated that, regarding how to contribute to the "APEC Hydrogen Policy Guidance," it should begin by sharing successful examples of relevant policies and initiatives within the APEC region. As specific examples, Japan introduced its initiatives related to hydrogen, ammonia, and e-methane.

2.6.7 Republic of Korea

Republic of Korea presented key challenges in its energy sector, including the rapid growth in energy demand driven by advanced industries, data centers, and electrification, alongside growing supply volatility due to climate-related factors such as temperature and solar radiation fluctuations. Korea also highlighted the increasing risk of damage to energy infrastructure from extreme weather events. To address these issues, Korea introduced the application of AI-based digital twin technology for power grid operations, which utilizes spectrum technology to replicate power generation and grid conditions in real time. The system enables AI to learn from

operational data and support functions such as power generation control, economic dispatch, and demand load forecasting, thereby improving stability and supporting the expansion of clean electricity. Korea also shared its plan to establish an integrated year-end infrastructure management system, which will collect data from energy assets and link with disaster response agencies to support monitoring, prediction, and response. These technologies aim to minimize power losses, enhance energy system resilience, and ensure a stable supply of electricity during emergencies.

2.6.8 Malaysia

Malaysia provided an overview of its Power Development Plan and sustainable energy initiatives. The economy targets a 45% reduction in economy-wide carbon intensity by 2030 (from 2005 levels) and net-zero emissions by 2050. To support this, the National Energy Transition Roadmap (NETR) was launched, with a goal of reaching 70% renewable energy capacity by 2050. In 2024, coal and natural gas accounted for 45% and 39% of the power mix respectively, while electricity demand is projected to rise to 33 GW by 2030 and 63 GW by 2050. Malaysia aims to phase out coal-fired power by 2045 and is piloting 15% biomass co-firing projects. To improve energy efficiency, the Energy Efficiency and Conservation Act (EECA) came into force in January 2025. It mandates audits and energy management for large users, establishes green building codes, strengthens performance standards for appliances, and sets qualification requirements for energy professionals. As of December 2024, Malaysia's installed renewable energy capacity reached 11.9 GW, supported by multiple national programs and policy mechanisms. Malaysia highlighted ongoing challenges such as capacity gaps, regulatory inconsistency, and financial barriers. It called for greater regional cooperation on standard harmonization, grid interconnectivity, technical exchange, and capacity building to advance renewable energy and energy efficiency deployment.

2.6.9 Peru

Peru expressed its support for Korea's key topics on the 2025 energy agenda and

firmly believes that clean energy sources must become the primary component of the energy supply. It emphasized the role of cutting-edge renewable energy technologies in driving innovation and reducing the cost of wind and photovoltaic generation. Renewable energy accounts for a significant and growing share of Peru's energy mix, with national policies prioritizing both its deployment and the promotion of technologies that enhance flexibility and efficiency. Peru is also committed to strengthening grid security. For the 2025–2026 period, the Ministry of Energy and Mines plans electricity generation projects exceeding US\$975 million, transmission projects worth over US\$134 million, and regulatory measures to improve electricity services. Special emphasis is placed on meeting electricity demand in Iquitos and other remote communities through photovoltaic infrastructure. Peru recognizes the potential of artificial intelligence to optimize energy processes, accelerate renewable integration, and improve efficiency, while stressing responsible adoption. It also emphasized the link between clean and low-carbon hydrogen and the expansion of clean electricity, particularly in sectors that are difficult to electrify. Peru strongly supports the work to advance hydrogen technologies guided by the “APEC Policy Guidance to Develop and Implement Clean and Low-Carbon Hydrogen Policy Frameworks in the Asia-Pacific,” which was endorsed during its 2024 host year, and noted that the implementation work plan will be presented at the joint meeting of EGNRET and EGCFE.

2.6.10 The Philippines

The Philippines reported that in 2023, renewable energy accounted for around 32% of its total primary energy supply, mainly from geothermal and biomass, while coal comprised 46% of dependable capacity and 63% of total generation. To support a clean and sustainable energy future, the Philippines targets a renewable share of 35% in the generation mix by 2030, 50% by 2040, and more than 50% by 2050. The Department of Energy highlighted policy mechanisms such as the Renewable Portfolio Standards, Green Energy Option Program, net metering, and renewable energy auctions, through which 1.8 GW, 3.4 GW, and 7.5 GW have been awarded since 2022. Offshore wind development is being promoted, with a potential of around 19 GW identified. The Philippines is also implementing energy efficiency programs,

advancing electric vehicle development through its national roadmap, and integrating nuclear energy into the 2023–2050 Philippine Energy Plan. On hydrogen, the Department of Energy issued the Hydrogen Energy Guidelines in 2024, setting a framework based on energy security, environmental sustainability, innovation, and investment mobilization. Additionally, the Philippines launched a bidding round for native hydrogen exploration, offering predetermined area blocks in Zambales and Pangasinan, as part of its efforts to utilize carbon-free energy technologies and expand clean electricity in APEC.

2.6.11 The Russian Federation

The Russian Federation pursues a systematic energy policy based on scientifically grounded solutions for the efficient use of all energy sources, including fossil fuels, as well as new and renewable energy sources, with an emphasis on advanced environmentally friendly technologies, energy security and environmental protection.

100% of the population has access to electricity and heating, with the electricity generation mix being about 40% from low-carbon and carbon-free sources (nuclear and hydroelectric power plants, renewable energy sources), rising to 85% when taking into account natural gas generation.

The Climate Doctrine of the Russian Federation aims for carbon neutrality by 2060, promoting carbon-free nuclear and hydropower electricity production. Natural gas is prioritized as a low-emission transition fuel, with a current gasification rate of about 74% and full completion expected by 2030.

Special emphasis is placed on the development of such promising areas as renewable and hydrogen energy. By the end of 2024, installed renewable energy capacity has reached nearly 6 GW, marking a 33% increase from the previous year. In 2020, a hydrogen energy development program was launched to enhance domestic technology for hydrogen production, storage, and transport. Additionally, the national project "New Nuclear and Energy Technologies" aims for technological self-sufficiency.

Russia's alternative energy development focuses on efficiency, with renewable

facilities introduced where cost-effective for consumers. In 2023, a program was approved, aiming to reduce energy intensity of GDP by 35% by 2035, compared to 2019 levels.

Russia consistently advocates for a balanced and realistic approach to the energy transition, with both environmental goals and the interests of energy producers and consumers taken into account. The decarbonization policy of Russia proceeds from the principle of technological neutrality - recognition of equal opportunities for the application of all technologies for the production and use of energy resources.

A just energy transition relies on open, competitive international energy markets that ensure non-discriminatory access to trade, finance, investments and technology. Any artificial restrictions hinder this transition. Russia emphasizes each country's sovereign right to choose its energy transition methods, considering its unique energy balance and national circumstances. Strong international cooperation based on equality and mutual respect is essential for this process.

2.6.12 Papua New Guinea

Papua New Guinea, as presented by the National Energy Authority, highlighted a predominantly rural context where only 13% of the population reside in urban areas and 97% of land is under customary ownership. The current energy landscape features an installed electricity capacity of approximately 580 megawatts, with a near balance between renewable sources (47%, primarily hydro and geothermal) and fossil fuels (53%, oil and natural gas). PNG Power Limited manages over 400 megawatts across three main grids and 16 isolated mini-grids, while industrial facilities and private generators account for the remaining capacity. Committed to carbon-free energy, Papua New Guinea's Vision 2050 aims for 70% electricity access by 2030 and 100% by 2050, aligning with UN Sustainable Development Goals, and the National Energy Authority has developed five renewable energy policies. As an APEC member, Papua New Guinea sees opportunities for collaboration in technology sharing, investment, and capacity building, while acknowledging challenges in the transition due to geographical barriers, limited capital, and the complexities of engaging with communities due to customary land ownership.

Opportunities lie in public-private partnerships, localized renewable energy systems, and leveraging carbon markets. Strategic recommendations include increasing regional cooperation, mobilizing resources for remote access, promoting off-grid clean technology innovation, and strengthening institutions. Overall, Papua New Guinea demonstrates a strong interest and high potential for transitioning to renewable energy.

2.6.13 Singapore

Singapore presented Singapore's journey in adopting low carbon and carbon free technologies to expand use of clean electricity. About 40% of Singapore's carbon emissions are attributed from the power sector. As the nation's energy regulator, the Energy Market Authority (EMA) drives Singapore's power sector towards net zero through four switches. (1) The first switch focuses on enhancing power sector efficiency and use of cleaner energy through providing grants and incentives for companies and industries to deploy more energy-efficient generation plants compatible with natural gas and hydrogen. (2) The second switch focuses on harnessing solar energy by actively working with other government agencies and industry to maximise solar deployments in Singapore (e.g., on rooftops, reservoirs, vacant land, and buildings), aimed to achieve 2 GWp by 2030. (3) The third switch focuses on importing about 6 GW of low-carbon electricity through regional power grids by 2035. Currently, Singapore is importing 100 MW of hydropower from Laos, with an additional 100 MW of electricity imports from Malaysia through multidirectional power trade. Additionally, we are also in discussions with Australia, Cambodia, Indonesia and Vietnam to import more renewable energy. (4) The fourth switch focuses on exploring the feasibility to harness emerging low-carbon energy technologies in Singapore. One key area is hydrogen, where we aim to supply 50% of Singapore's demand by 2050 through low-carbon hydrogen and are working on developing low-carbon technologies in the power sector. Two other key areas include advanced geothermal systems and Carbon Capture, Utilisation, and Storage (CCUS), where feasibility studies are conducted to ensure the technical and economic viability of these technologies in Singapore.

2.6.14 Chinese Taipei

Chinese Taipei presented their commitment to achieving net-zero emissions, highlighting several years of foundational work followed by the launch of a comprehensive action plan in 2024. This plan focuses on six key sectors, with particular emphasis on the energy sector. Chinese Taipei aims to reduce its carbon emissions by approximately 23% from the 2005 baseline of around 35 megatons of CO₂, targeting a reduction to approximately 27 megatons by 2030. The strategy employs mature technologies to phase out inefficient thermal power and improve energy efficiency, alongside new flagship projects involving significant investment in green power and Carbon Capture, Utilization, and Storage (CCUS). The targeted energy structure by 2030 involves increasing renewable energy to 30% (from 10%), natural gas to 50% (from 40%), and decreasing coal to 20%, projecting a 34.9% reduction in the electricity emission factor. These initiatives are expected to attract around five trillion TWD in private investment and generate more jobs. This builds on the progress of a fourfold increase in renewable energy capacity over the past decade. The focus on renewable energy prioritizes mature sources like solar PV (aiming for 20 GW by next year, potentially 40-80 GW) and offshore wind (current capacity around 5.5 GW, with a target of up to 50 GW, ranking seventh globally in 2023). Exploration of geothermal and small hydropower, the development of energy storage, and investment in hydrogen power are also significant. Undergoing a second energy transition driven by the diversification of green energy, Chinese Taipei is accelerating the deployment of geothermal, biomass, and ocean energy alongside solar and offshore wind, moving toward the expansion of clean electricity for Net Zero.

2.6.15 Thailand

Thailand presented its active pursuit of carbon neutrality goals through renewable energy promotion, guided by the Alternative Energy Development Plan 2018 (AEDP 2018) and the draft AEDP 2024. AEDP 2018 aims to achieve a 30% renewable energy share in final energy consumption, with Thailand currently at 14.6%. The plan targets various renewable technologies in the electricity sector, aiming for 29 GW of renewable capacity (current achievement: 12 GW). Thailand is committed to reducing greenhouse gas emissions by 30-40% in the near term, with targets for carbon

neutrality by 2050 and net-zero greenhouse gas emissions by 2065. Recognizing that the energy sector accounts for 70% of its emissions, Thailand is revising its renewable energy plan. The draft AEDP 2024 sets a more ambitious 37% renewable energy target by 2037 with the electric city target increasing to approximately 73 GW, integrating hydrogen across electricity, heat, and transport. Hydrogen is considered crucial for emissions reduction and aligns with national and global climate goals. Thailand is undertaking hydrogen pilot projects and developing a strategic framework with three main strategies: market development, research promotion, and infrastructure development, including regulatory revisions. Near-term plans include supporting pilot projects and preparing technical data for blending hydrogen (around 5% by volume) into natural gas for electricity production by 2030, with broader short-term, mid-term, and long-term hydrogen integration goals.

2.6.16 Viet Nam

Viet Nam highlighted their strong commitment to a just energy transition and achieving net-zero emissions, as presented by the Electricity Authority of Vietnam, which involves increasing renewable energy, particularly wind and solar. To promote this, Viet Nam has issued Decree Number 135 (2024) to encourage self-produced and self-consumed solar PV through nine key policies. These include exemptions from electricity operation licenses and capacity limits for specific self-produced and self-consumed systems; guidelines for organizations/individuals with systems of 1,000 kW or more selling surplus electricity; tax incentives; streamlined administrative procedures; and the designation of rooftop solar for households, offices, and public property as technological equipment. Households and individual houses (under 100 kW) can sell surplus electricity to the grid (not exceeding 20% of installed capacity), and are exempt from adjusting business licenses. The government also encourages electricity storage systems. Decree Number 58, intended to address Decree Number 135, was mentioned, but details were not provided. The Law on Electricity (2024) regulates electricity prices (retail and wholesale), with the government and Prime Minister responsible for setting price adjustment mechanisms and structures. Decree Number 06 (2025) will provide further details on the Law on Electricity. Through these legal documents, Viet Nam

aims to create a transparent environment for investors and demonstrates a strong commitment to achieving its energy transition and net-zero emissions targets.

3 Individual Expert Group Meeting (10 April 2025, 09:00 – 12:00)

Each expert group conducted its individual meeting in the morning of 10 April 2025. A joint meeting between EGNRET and EGCFE was held in the same morning.

(The content from these individual meetings will be shared with the participants of the respective meetings only.)

4 Joint Meeting of Four Expert Groups (10 April 2025 14:00 – 16:00)

The session was chaired by Mr Glen SWEETNAM, EGEDA Chair, and Mr KONG Mau-Shing, Marsden, Assistant Director/Electricity and Energy Efficiency, EMSD, HKC.

4.1 Discussion on Potential New APEC goals and Areas of Collaboration

Mr. Glen SWEETNAM, EGEDA Chair, started the discussion on new APEC goals with a presentation. He mentioned that APEC is making significant progress in reducing energy intensity and increasing renewable energy generation, with energy intensity declining approximately 2% per year and renewable energy share growing steadily. However, CO₂ emissions have remained relatively constant since 2012 due to the continued growth of carbon-emitting generation. The increasing electricity demand outpaces the growth of carbon-free generation, highlighting the need for reliable, dispatchable energy sources to ensure grid stability. Continued collaboration and innovation are essential to address these challenges and meet APEC's energy goals.

In the ensuing discussion, the members of the expert groups in the participating economies did not respond about the EGEDA Chair's question on their ideas about new APEC energy goals but responded about areas of possible collaboration.

Indonesia expressed interest in dispatchable renewable energy and emphasized joint efforts in energy storage development, smart grids, and hydrogen utilization. Canada proposed prioritizing indigenous communities in the energy transition, drawing parallels between their challenges and those faced by dispersed communities in Papua New Guinea. Australia echoed the emphasis on emerging technologies, highlighting work on long-duration energy

storage, consumer energy resources, community batteries, and hydrogen as a long-term solution. EGNRET stressed the importance of advancing new energy storage technologies, citing China's exploration of molten salt storage.

Chile underscored the growing need to ensure grid stability amidst rising renewable adoption, advocating for technologies that address emergencies and decentralized energy challenges. The Philippines shared their intention to explore new technologies like co-firing and hydrogen, with a particular interest in indigenous hydrogen sources. Brunei highlighted the challenge of solar intermittency, expressing a need to pair it with other technologies while balancing affordable electricity access and energy reliability. China noted the general achievement of current APEC goals and suggested future reporting by economies to share methodologies. Thailand suggested expediting the use of RE sources, with a particular emphasis on the importance of bioenergy, as well as introduced the idea of incorporating Sustainable Aviation Fuel into future plans.

The EGEDA Chair expressed gratitude to conclude the session and proposed that participants could submit further ideas, building on what has been discussed.

4.2 Individual Expert Group Meeting Outcome

4.2.1 EGCFE Meeting Outcome

Mr. Takehiko SAEKI, Acting EGCFE Chair, emphasized that each economy should achieve our common goal through various pathways tailored to their respective circumstances.

He reported that a new Vice Chair position has been established in the EGCFE, and the appointment of Mr. Qing Li from the Chinese economy has been confirmed. Mr. Qing Li introduced himself via a video message and expressed his commitment to contributing to EGCFE activities.

In Session 1 on APERC Fossil Fuel Reports, Mr. Nabih Matussin, a Senior Researcher at APERC, presented key issues and preliminary findings from the draft of the three Fossil Fuel Reports for 2024, which cover coal, oil, and gas. According to the reports, demand, production, and trade for these fossil fuels continued to grow in 2023.

In Session 2, Mr. Juniko Parhusip, Senior Researcher at APERC, presented the 6th OGSE held in Indonesia from February 4 to 6, 2025. This exercise had 42 participants, including representatives from oil and gas regulators, utilities, and supporting businesses like transportation and port management. The OGSE highlighted the urgent need to accelerate the development of LNG terminals, gas pipelines, and other government-planned infrastructure. Ongoing emergency exercises and simulations are crucial for crisis preparedness with quantifiable analyses.

Next, Mr. Nabih Matussin shared key issues and preliminary findings from OGSS 21 on the energy security implications of declining LNG investment. The potential topic for OGSS 22, "The Energy Security Implications of Upstream Oil Underinvestment," was presented and agreed upon.

Third, Mr. Yoshiaki Imaizumi, Deputy General Manager at APERC, discussed the development and potential topics for the Oil and Gas Security Newsletter. He covered the background, milestones, topics, and the way forward. He encouraged participants to contribute by writing articles and recommending interviewees.

In Session 3, Mr. Imaizumi reported on the status of ongoing fossil energy projects, specifically the APEC Workshop on Cleaner and More Efficient Operation of the Fossil Energy Industry. The workshop aims to provide fundamental technical knowledge to policymakers and relevant officials in APEC economies. It will identify feasible solutions and advice. The workshop is scheduled for late 2025 in Japan.

During the free discussion following the scheduled agenda, there were revision comments on ToR from Russia. Moving forward, we will seek endorsement again via email for the revision comments on the ToR from each economy.

After the individual meeting, a joint meeting of EGNRET and EGCCE was held to discuss the implementation of the Hydrogen Policy Guideline agreed upon in Peru.

The speakers included:

- Dr. Manuel Heredia, Senior Researcher at APERC, on the Draft Hydrogen Report 2024.
- Ms. Adelaida Baeriswyl Concha from the Ministry of Energy (Chile), discussing the certification of hydrogen and its derivatives in APEC economies and its role in driving

the market.

- Hong Kong, China, on hydrogen for land transport: development pathways and challenges.
- Mr. Deger Saygin from OECD and Dr. Byung Goo Kang, SCSC Chair, speak on APEC Policy Guidance.
- Mr. Jorge Garcia from the Ministry of Foreign Affairs (Peru) introduced Peru's Work Plan. Regarding the work plan, we continued discussions based on the feedback received from each economy.
- Tarcy Sih-ting JHOU, Senior Researcher at APERC, made a proposal regarding the next steps for the Hydrogen Policy Guidance.

After the presentations, we discussed the next steps and received positive and insightful comments from participants, leading to an active discussion.

Based on this discussion, EGCFE will support the plans presented by Peru and APERC, as well as the projects presented by Chile and Hong Kong, China. We will proceed with implementation in collaboration with Peru, EGNRET, APERC, and supporting economies, including Chinese Taipei, Hong Kong, China, Korea, and Japan.

4.2.2 EGEDA Meeting Outcome

Mr. Edito BARCELONA, EGEDA Secretariat, reported on their data collection of annual energy supply and consumption, energy prices, GHG emissions, and energy efficiency indicators. They proposed a project to prepare survey instruments for end-use energy consumption data collection through a three-phased approach: workshops, pilot surveys, and dissemination of results. Additionally, they emphasized the need for timely and accurate data submission and suggested a cut-off date for revisions to annual data to improve publication preparation.

Ms. CHAI Yanxin from China Southern Grid presented on risk mitigation and collaborative governance of cross-border energy data flows. She highlighted the APEC Cross-Border Privacy Rules (CBPR) system and the importance of cooperation on data flows, focusing on privacy, security, and support for developing economies. Ms. CHAI proposed a governance framework to balance security and

development, aiming to improve the management and sharing of energy data across borders.

Presentations by resource persons from IRENA, IEF, and IEA underscored the need for accurate and timely energy data reporting. IRENA highlighted discrepancies in capacity and generation data, particularly for solar PV, combustible fuels, and hydro production, and stressed the importance of reporting energy storage data. IEF focused on APEC economies' participation in the Joint Organizations Data Initiative (JODI) and introduced the Joint Organizations Sustainability Initiative (JOSI). IEA presented the "IEA Energy Statistics Roadmap," emphasizing robust National Energy Information Systems (NEIS) to support policy design and planning, and published a guidebook titled "Designing an energy statistics roadmap" that would be useful for APEC member economies.

The Chair asked the EGEDA members on their priorities in improving their data such as energy balance, timeliness and disaggregation of data. Member economies and organizations have various priorities regarding energy data and cooperation. Australia and the Philippines focus on disaggregation, while Brunei Darussalam and IRENA emphasize the accuracy of the energy balance table. China and IEF prioritize cooperation, and Hong Kong, China, and Thailand focus on energy balance, with Thailand needing support for cooling and heating data. Malaysia and Russia highlight timeliness and energy balance, and Singapore plans to share more granular data while protecting industry privacy. Chinese Taipei is meeting current requirements and focusing on new energy products and technologies. The IEA also focuses on disaggregation, and the EWG Lead Shepherd stresses the importance of timely data during critical times.

4.2.3 EGEEC Meeting Outcome

Dr. LIU Ren, EGEEC Secretariat reported on the work during the 64th meeting of EGEEC. This includes a summary of the EGEEC 63rd meeting and its outcomes, list the concept notes of session 1 of 2025, and briefly introduce the speeches of invited guests at this meeting.

CLASP shared its report on the importance and pathways for improving the energy efficiency of appliances, particularly room air conditioners (RACs). China has made significant progress in improving air conditioner efficiency, and countries worldwide need to strengthen policies, standards, and incentives to accelerate global appliance energy efficiency improvements and move towards a more sustainable future.

UNEP shared UNEP efforts to promote district energy systems in emerging economies, specifically district heating and cooling systems, since 2014. UNEP highlights the importance of district heating and cooling systems in addressing global energy challenges, particularly in developing regions. and shared the expertise that how to implement direct energy systems.

EE Hub shared the latest work of the five Task Groups : Digitalisation Working Group (DWG), Energy Management Action (EMAK), Super-Efficiency Equipment & Appliance Deployment Initiative (SEAD), Top Ten Energy Efficiency Best Available Technologies and Practices (TOP-TENs), and Energy Efficiency in Buildings (EEB).

APEC project 'Electric Fans Energy Efficiency Improvement in APEC Region: Review of Experience and Best Practices (EWG_206_2024A)' share the process. Its focus on Electric Fans, main objective of the project is to Assess energy efficiency management and policies, investigate strategies for increasing the market share, Examine current energy-saving technologies. 'Capacity Building Workshop for Energy Efficiency and Conservation Policy (EWG_205_2024A)' shared the capacity building workshop for energy efficiency and conservation policy, a potential to showcase the members economies implementation of MEPS in the building sector.

Regarding EGEEC governance, the selection of the Chair and Vice-Chair for the term from July 2025 to June 2027 was finalized during this meeting. Dr. Liu Meng from China has been nominated as Chair, and Ms. Jovian Cheung from Hong Kong, China, as Vice-Chair. Participating members have consensus on the selection result. The results will be circulated for official endorsement by April 17, 2025

4.2.4 EGNRET Meeting Outcome

Ms. Yi Ting CHANG, EGNRET Secretariat, reported the outcomes of the 62nd

Meeting of the APEC Expert Group on New and Renewable Energy Technologies (EGNRET), including highlights from the Joint Meeting with the Expert Group on Clean Fossil Energy (EGCFE). A total of thirteen APEC economies participated in the meetings, along with representatives from six APEC fora and two organizations, who shared their perspectives and technical insights.

In the EGNRET 62 Meeting, members provided updates on the progress of EGNRET projects. Thailand presented the cross fora project titled “Capacity Building to Accelerate Investment on Energy Resilient Infrastructure towards APEC Energy Goals”; APERC introduced the project outline of “Capacity Building Workshop on New and Renewable Energy Policy”. Chinese Taipei presented one completed project, “The Legislation Recommendation and Promotion of Multifunctional Ocean Space Usage: Combine Floating PV Installations at Offshore Wind Farms”, and shared updates on an ongoing project entitled “Benchmark of Facilitated Actions to Fulfill the Energy Efficiency Benefit of AMI in the APEC Region”.

Regarding administrative matters, the Secretariat revised the second draft of the EGNRET Terms of Reference to ensure alignment with the EWG Strategic Plan. This revised version has been submitted for review by the EWG and is currently under consideration. Looking ahead, EGNRET 63 is expected to be held jointly with EGEEC in Seoul, Korea, in September or November 2025, followed by EGNRET 64 in Khon Kaen City, Thailand, in late April or early May 2026.

A dedicated discussion session was held on potential areas of collaboration related to new APEC goals and clean and low-carbon hydrogen (CLCH). Dr. Chi-Wen Liao, the EGNRET Chair, proposed several possible approaches for future collaboration, including efforts to map international hydrogen initiatives and review annex materials, as well as to share public resources through the EGNRET website, collaborate with APERC on the CLCH Network Policy Project, and enhance knowledge exchange with PPSTI, ISO, and APMP.

Further inputs were provided by participating organizations. CETERI shared China’s latest renewable energy technology innovations and expressed willingness to strengthen cooperation with APEC. In addition, APSEC is working on a new research project “Hydrogen Energy Development and Applications in APEC Economies and

China: Practices Under Carbon Neutrality Goals”, trying to get more information on relevant technologies, policies and best practices in China and member economies.

The subsequent EGNRET and EGCFE Joint Meeting was convened to facilitate discussions on “APEC Policy Guidance to Develop and Implement Clean and Low-Carbon Hydrogen Policy Frameworks in the Asia-Pacific”. Several presentations were delivered by APEC economies and international organizations. During the discussion on next steps, APERC presented the “APEC Clean and Low-Carbon Hydrogen (CLCH) Policy Network Project”, and it was announced that the first CLCH Annual Convention will be hosted by Hong Kong, China in mid-May 2026. Dr. Chi-Wen Liao reiterated potential collaboration approaches for EGNRET and relevant APEC fora and international organizations. Chinese Taipei also proposed exploring cooperation with the APEC Research Center for Advanced Biohydrogen Technology (ACABT), a PPSTI Center, and plans to submit a related project for Project Session 2.

4.3 Closing Remarks

Mr. CHAN Pak-Cheung, Deputy Director of Regulatory Services at EMSD, HKC, expressed his gratitude for the active engagement and insightful contributions from participants. He highlighted the cross-disciplinary discussions focused on the theme "Expanding Clean Electricity through Utilizing Carbon-Free Energy Technologies." Mr. Chan also congratulated Dr. LIU Meng and Ms. Jovian CHEUNG on their continued leadership in the EGEEC.

The 64th Meeting of Expert Group on Energy Efficiency and Conservation (EGEEEC64)

Hong Kong, China

10 April 2025

Meeting Summary

1. Individual Expert Group Meeting (10 April 2025, 09:00 – 12:00)

The individual EGEEEC64 meeting was chaired by Dr LIU Meng, EGEEEC Chair, and Mr KONG Mau-Shing, Marsden, Assistant Director/Electricity and Energy Efficiency, EMSD, HKC.

2.1 Invited Presentations

2.1.1 CLASP Presentation

Mr. Steve Zeng, Director of China program, CLASP shared its report on the importance and pathways for improving the energy efficiency of appliances, particularly room air conditioners (RACs). Appliances play a significant role in global climate change, especially in reducing CO₂ emissions. CLASP has set energy efficiency targets for various appliances, such as doubling the efficiency of air conditioners and refrigerators by 2030 and achieving a full transition of appliances to reach net zero emissions. by CLASP experiences, that countries, specially development countries need to strengthen policies, standards, and incentives to accelerate global appliance energy efficiency improvements.

Chair encourage members to explore collaboration opportunities with CLASP to reduce emissions through knowledge sharing and APEC projects.

2.1.2 UNEP Presentation

Dr Chen Zhuolun, senior advisor of energy efficiency & green finance, UNEP shared their ongoing efforts to promote district energy systems, such as district heating and cooling, in emerging economies since 2014. These systems are crucial in addressing

global energy challenges, particularly in developing regions. UNEP highlighted their expertise in implementing these systems and emphasized the role they play in achieving sustainable development goals.

EGEEEC members are encouraged to collaborate with UNEP to explore the implementation of district energy systems.

2.1.3 EE Hub Presentation

Ms. Kristina Klimovich, programme officer, EE Hub shared the latest work of the five Task Groups : Digitalisation Working Group (DWG), Energy Management Action (EMAK), Super-Efficiency Equipment & Appliance Deployment Initiative (SEAD), Top Ten Energy Efficiency Best Available Technologies and Practices (TOP-TENs), and Energy Efficiency in Buildings (EEB).

2.1.4 EGEEEC Chair's Presentation

Dr LIU Meng, EGEEEC Chair, introduced the concept of Integrated District Energy Systems (IDES), an energy-efficient system that integrates heating, cooling and power supply by sharing and optimizing energy within a district, along with their global development. He shared insights from his work on IDES at the International Organization for Standardization (ISO), where he currently serves as the convener of two working groups focused on developing standards for IDES by 2026.

2.2 Project Updates

The status of three (3) nos. of the APEC projects was reported during the meeting and summarised below.

2.2.1 Hong Kong, China

Hong Kong, China proposed a new APEC project concept note titled “APEC Practical Training on District Cooling and Heating Systems (DCHS)” for 2025 Session 1. A one-day training aims to enhance the capabilities of APEC member economies through hands-on training in the design and operation of district cooling and heating systems. Participants will engage in practical exercises that cover site planning,

system design, infrastructure development, and innovative technologies.

2.2.2 APERC / Japan

APERC shared their project Capacity Building Workshop for Energy Efficiency and Conservation Policy (EWG_205_2024A) which aims to support APEC members in capacity building for energy efficiency and conservation policies as they work towards the energy transition. The project aims to identify common challenges on energy efficiency of the member economies; share best practices of the selected case, and propose new ideas to improve energy efficiency of the member economies. A workshop will be held in the second half of 2025 in conjunction with the EGEEEC65 meeting.

2.2.3 Chinese Taipei

Chinese Taipei shared the progress of the APEC project on "Electric Fans Energy Efficiency Improvement in the APEC Region: Review of Experience and Best Practices" (EWG_206_2024A). The project aims to build the capacity for implementing advanced technologies and policies related to high-efficiency electric fans in developing APEC economies. A survey will be conducted to review related relevant testing standard on energy efficiency and quality. A workshop will be held in the second half of 2025 in conjunction with the EGEEEC65 meeting.

2.3 EGEEEC Governance and Chair Selection

2.3.1 EGEEEC Contact List

Dr. LIU Ren, EGEEEC Secretariat reported that the EGEEEC Contact List was updated and circulated to members on 20 March 2025. EGEEEC Chair encouraged members to nominate experts from APEC economic members to join the EGEEEC and regularly review and update the EGEEEC contact list to build capacity and share knowledge in energy efficiency and conservation-related policy.

2.3.2 EGEEEC Website

EGEEEC Secretariat reported that the meeting documents of the EGEEEC 63 has been

uploaded to the EGEEC Website. He also encouraged members to send the presentation materials for EGEEC 64 to the EGEEC Secretariat for uploading on the EGEEC website.

2.3.3 Review of EGEEC Terms of Reference

The EGEEC ToR was endorsed on 26 November 2021. The EGEEC ToR has four-year term starting from 1 January 2022 to 31 December 2025. The draft EGEEC ToR for 2026-2029 is endorsed by EGEEC members as no comments were received as of 10 January 2025. The draft was submitted to the EWG members for their endorsement.

2.3.4 EGEEC Chair and Vice Chair Selection

EGEEC Chair and Vice Chair Selection for the term 2025 to 2027 were conducted. Two nominations were received during the nomination period from 10 March 2025 to 7 April 2025. Ms CHEUNG Man Chit Jovian from Hong Kong, China was nominated for the Vice-chair position and Dr LIU Meng from China was nominated for the Chair position. No objections were received before the Selection and participating members reached a consensus to endorse the two nominations for the EGEEC Chair and Vice Chair to start tenure from 1 July 2025 to 30 June 2027. The selection results would be circulated to all EGEEC members for official endorsement within one week of the EGEEC 64 meeting as some member economies were absent in the selection process.

2.3.5 Upcoming EGEEC Meetings

EGEEC Secretariat announced that the Republic of Korea would host the upcoming Joint EGEEC 65 and EGNRET 63 meetings in the second half of 2025. The exact date would be further announced. In conjunction with the meeting, Chinese Taipei and APERC will organize two workshops, the APEC Workshop on "Electric Fans Energy Efficiency Improvement in the APEC Region: Review of Experience and Best Practices" (EWG_206_2024A) and the "Capacity Building Workshop for Energy Efficiency and Conservation Policy" (EWG 205 2024A).

Additionally, EGEEC Secretariat reported that Thailand expressed their interests in hosting a joint meeting in the first half of 2026, while both China and the Philippines expressed interest in hosting a meeting in the second half of 2026.

EGEEC Chair expressed gratitude for members active contribution in hosting EGEEC meetings.

2.3.6 Upcoming Energy Working Group & Energy Ministers' Meetings

EGEEC Secretariat reported that Korea will host the 70th Energy Working Group Meeting (EWG70) and the 15th APEC Energy Ministers' Meeting (EMM15) on 24-30 August 2025 in Busan.