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Agenda Item: -

Energy Working Group Work Plan for 2021

Purpose: Information

Submitted by: EWG Lead Shepherd



**Second SOM Steering Committee on
Economic and Technical Cooperation
Meeting
28 May 2021**

Energy Working Group's Proposed Work Plan for 2021

Introduction

The Energy Working Group's (EWG) Work Plan incorporates guidance from APEC Economic Leaders, Ministers and Energy Ministers to form a solid foundation for the EWG work program. The EWG's work plan responds to specific priorities from Leaders and Ministers on areas such as enhancing energy security and energy resilience using the widest variety of fuels and technologies to support sustainable economic growth and promote transition to cleaner energy; advancing clean and renewable energy; rationalizing or phasing out inefficient fossil fuel subsidies that encourage wasteful consumption while recognizing the importance of providing those in need with essential energy services; advancing energy access; investing in skills, workforce development and inclusivity for a net-zero future; enhancing energy efficiency; and advocating low-carbon development for sustainable economic growth.

The EWG's priorities are also consistent with and guided by the annual APEC priorities agreed by Senior Officials. In 2021, under the overarching theme of "*Join, Work, Grow. Together.*," these priorities are:

- Economic and Trade Policies that Strengthen Recovery
- Increasing Inclusion and Sustainability for Recovery
- Pursuing Innovation and a Digitally-Enabled Recovery

Given the far-reaching impacts of the COVID-19 pandemic on the energy sector in the APEC region, as well as on the ability of the EWG to carry out projects and activities in 2020 and 2021, the EWG will endeavour to explore creative solutions to support innovative and sustainable recovery in the energy sector. Furthermore, the EWG will examine its activities and ensure that those which are contributing to APEC actions in these three priority areas will engage other relevant APEC fora as appropriate, in line with APEC cross-fora collaboration direction from Senior Officials, and are properly incorporated into APEC deliverables on the above 2021 priorities.

In the first half of 2021, the EWG will have its policy dialogue centered on the topic of Incentives and Tools for Accelerating Development of Low Emissions Energy, the priority issue proposed by New Zealand as the APEC host economy. In the second half of 2021, the EWG will continue the policy dialogue on the priority issue to be proposed by Thailand, the APEC host economy of 2022.

The themes of energy security, clean energy development and deployment, energy efficiency, energy resiliency, energy access and sustainable growth continue to be prominent in the EWG's activities. The EWG will continue to increase its focus on responding to natural and man-made resiliency challenges for energy infrastructure and networks. Capacity building activities to improve the analytical, technical, operational and policy capacity of the APEC economies will continue through workshops, information exchanges, training, best practice guides, peer reviews and other activities. Additional emphasis will be placed on exercises and training for oil and gas emergencies as well as further efforts on clean and efficient use of fossil energy to address continued energy demand growth in the Asia-Pacific region.

In 2019, the EWG developed an APEC Energy Vision-Post 2020 (the Vision) to strategically set a clear vision for achieving progress towards an energy secured and low emissions region that is responsive to rapidly evolving energy market challenges. The Vision highlights the EWG's shared vision to implement modern regulatory frameworks, to develop effective energy governance, to accelerate developments in energy efficiency and reduction in energy intensity, to accelerate investment into low carbon energy systems, to co-operate on energy innovation and low-carbon technology, and to support open, competitive and transparent energy markets. The EWG will continue to strengthen its works towards the shared vision.

As the basis of energy policy discussion among Energy Ministers as well as within the EWG, the Asia Pacific Energy Research Centre (APEREC) has been preparing the APEC Energy Demand and Supply Outlook every three years. The latest version is the 7th edition published in May 2019. APEREC will continue to carry out the annual publication of the APEC Energy Statistics and the APEC Energy Handbook as well as the APEC Energy Overview under the guidance of the Expert Group on Energy Data and Analysis (EGEDA). These data are used to track the EWG energy intensity reduction and renewable share doubling goals.

1. Fora Governance in 2021

- 1.1. *Renew EWG Terms of Reference (2022-2025) to be endorsed prior to SCE3 2021*
The EWG Terms of Reference will be revised and sent for endorsement prior to SCE3 2021.
- 1.2. *Draft annual EWG report for endorsement by EWG and SCE September 2021*
The EWG fora report will be completed and sent for endorsement by September 2021.
- 1.3. *Begin Lead Shepherd selection process before EWG 61 Meeting (Dates to be confirmed)*
According to the EWG Lead Shepherd Selection Process, the selection for next EWG Lead Shepherd (2021-2022) will be conducted at the EWG 61 Meeting.
- 1.4. *Conduct Deputy Lead Shepherd selection process at the EWG 62 Meeting (Dates to be confirmed)*
According to Revised Guidelines for Lead Shepherd/Chair and Deputy Lead Shepherd/Chair of APEC Working Groups and SOM Task Forces, the selection for next EWG Deputy Lead Shepherd (2022-2023) will be conducted at the EWG 62 Meeting.
- 1.5. *Review and amend the eligibility criteria of EELCM sub-fund*
EELCM sub-fund donor, Japan, requested at the EWG 59 meeting in 2020 that the criteria of EELCM Sub Fund should be revised to include projects related to energy resiliency. The EWG members will review the revised criteria and seek consensus in 2021.

2. Expected Outcomes/Deliverables for 2021

The EWG's work plan is responsive to specific priorities from Leaders and Ministers on areas such as enhancing energy security and energy resilience using the widest variety of fuels and technologies to support sustainable economic growth and promote the transition to cleaner energy, developing clean and renewable energy, ensuring cleaner use of fossil fuels, rationalizing or phasing out inefficient fossil fuel subsidies, enhancing energy efficiency, improving energy resiliency, expanding energy access, and promoting low-carbon development for sustainable growth. For a full list of all APEC itemized work plans currently under the EWG as of January 2021 please see "2. Itemized Work Plans for 2021". Further projects are anticipated to be added to this list in 2021, both from APEC-funded and self-funded sources.

- **Energy Security**

With increasing energy security risks facing the APEC region, the EWG has agreed to revise the Energy Security Initiative (ESI) with an updated scope that reflects the changing calculus of energy security in the region, as the principal mechanism to address energy security challenges in a sustainable manner. The reinvestigation of the Energy Security Initiative (ESI) began from the EWG59 meeting in the first half of 2020. The EWG will seek to reach consensus on the revised ESI by the EWG 62 Meeting in the second half of 2021. This could include a consideration of the emergence of new energy security considerations brought forward by the pandemic and the energy transition, such as electricity grid resilience and the security of critical supply chains. In addition, efforts will continue on capacity building in oil and gas emergency response and relevant data collection and activities to address energy supply disruptions. With the assistance of the Asia Pacific Energy Research Centre (APERC), the EWG will undertake activities under the Oil and Gas Security Initiative (OGSI) which has three components: Emergency Exercises, a Network Forum and Newsletter and Security Studies. Members will also continue creating favorable conditions for trade and investment to support a diversified, flexible and integrated natural gas market in the APEC region. APEC economies endeavor to achieve a more secure and safe energy infrastructure and reaffirm the vital importance of achieving and maintaining high levels of nuclear safety, security, and non-proliferation, worldwide. APEC economies should also ensure energy security investments align with the goals of the Paris Agreement.

Expected outcomes and deliverables for 2021 include:

- Under the Oil and Gas Security Initiative: 2020 (EWG 01 2020S), the 5th Oil & Gas Security Exercise was postponed and Thailand will discuss with APERC what date would be best to reorganize it. The 6th Oil & Gas Security Network Forum will be held in Osaka, Japan, though the schedule is not decided yet. The OGS newsletter is released bi-monthly. The OGS Study on “Impact of COVID-19 on energy security ” is scheduled to be published in October 2021.

- **Renewable Energy**

For years, the EWG has been working to develop and deploy renewable energy technologies and fuels. APERC will continue to undertake Peer Reviews on Low Carbon Energy Policies (PRLCE) as a major tool to accomplish this objective. The EWG is accelerating efforts on renewable energy to help meet the aspirational goal endorsed by the Leaders’ in 2014, i.e. to double the share of renewable energy within APEC’s energy mix, including power generation, by 2030 over a 2010 baseline. The EWG is undertaking and developing projects and activities to promote innovation and technology development, reduce costs and improve sustainability of renewable energy to support this goal for the APEC region as a whole including the development of a roadmap by Expert Group on New and Renewable Energy (EGNRET). The EWG is in conversations with the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA) on possible joint activities.

Expected outcomes and deliverables for 2021 include:

- The APEC Workshop on University Collaboration to Support Data Gathering and Analysis in Energy Efficiency and Renewable Energy (EWG 06 2019A) is scheduled to be held around June/July 2021, to provide an excellent networking opportunity to begin the development of a consortium of Universities in APEC

economies to work in collaboration with the EWG and APERC on the EWG goals.

- The Workshop on Filling the Gap to Reach the Goal of Doubling Renewable Energy in the APEC Region - Phase 2 (EWG 02 2019A) is scheduled to be held in September 2021, to discuss the draft plan of renewable energy roadmap and share information, tools and best practices for developing renewable energy projects and roadmap.
- A two-day Dialogue under APEC Multi-Stakeholder Dialogue on Promoting Renewable and Clean Energy (RCE) Policies (EWG 03 2019A) will be held in May 2021 in Viet Nam to identify renewable energy/fossil energy linkages and suggest draft clean energy legislation models which support the linkages.
- Two Workshops under Exploring Co-Benefit Opportunities for Renewable Energy and Energy Efficiency Projects in the APEC Region (EWG 04 2019A) will be held respectively in March 2021, Hawaii and in June 2021, Thailand to sharing best practices for the RE&EE projects.
- A Workshop on Sustainable Mobility-City Solutions with Cross-sectoral Coordination under Sustainable Mobility: Routes for Integrating the Energy and Transport Sectors for Urban Cities (EWG 05 2019A) will be held in March-April 2021.
- Workshop on Korea's new and renewable energy policies and best practices, and applying them to the APEC region (EWG 13 2020A) will be conducted in 2021.
- APEC Workshop on Promoting Renewable Energy for Rural and Remote Area Development (EWG 08 2020A) will be held in October 2021 in Viet Nam.

- **Energy Efficiency**

The EWG will continue its efforts to enhance energy efficient appliances, equipment, transport, industry, buildings and power grids, and promote more energy efficient communities through the Energy Smart Communities Initiative (ESCI) and related Low-Carbon Model Town (LCMT) Projects. The EWG will also continue to build the ESCI Knowledge-Sharing Platform to share best practices and enhance capacity building on low-carbon and efficient energy development. These efforts, along with a broader set of energy efficiency projects, will further progress toward the aspirational goal of reducing APEC's aggregate energy intensity by 45 percent from 2005 levels by 2035 as directed by the APEC Leaders in their meeting in Honolulu in 2011. In this context, the role of the Expert Group on Energy Efficiency and Conservation (EGEE&C) is vital in coordinating with APEC economies to drive the energy efficiency and conservation policy implementation. The EGEE&C is working with the International Energy Agency (IEA) and International Copper Association (ICA) on energy efficiency trends and developments, and liaising with the International Energy Efficiency Hub, which replaced the former International Partnership for Energy Efficiency Cooperation, IPEEC at the end of 2019, with a view to exploring enhanced collaboration.

Expected outcomes and deliverables for 2021 include:

- The 6th EEP WS will be proposed in 2021, which will provide a capacity building opportunity for APEC members, particularly developing economies, to strengthen their ability to develop robust energy efficiency policy.
- The 6th Follow-up PREE (EWG 07 2019A) is expected to be conducted in Indonesia tentatively in October 2021. The Follow-up PREE is designed to assist a former PREE host economy in implementing the recommendations of the PREE review team.
- An APEC Workshop on District Cooling and/or Heating Systems (DCHS) (EWG 08 2019S) was held on 17 November, 2020, alongside the 31st EGEDA and 55th EGEE&C meetings in Hong Kong, China. The workshop provided a platform for promoting and highlighting the growing importance of DCHS from the perspective of energy efficiency and conservation. APEC economies and international organisations shared their experiences of implementing ECHS in the APEC region and how renewables were integrated into ECHS, as well as insights for further developing data collection standards.
- An APEC Workshop on Energy Intensity Reduction in the APEC Region's Urbanised Cities (EWG 08 2019A) will be held online in March 2021 in Hong Kong, China to share best EE&C policies and practices, EE&C technology development challenges as well as emerging new technologies of selected urbanised cities in the APEC region. Besides, key drivers for accelerating aggregated energy intensity reduction for new and existing buildings will be shared among the APEC economies.
- Evaluation of Energy Technologies, Programs and Policies (EWG 12 2019A) will support a two-day workshop in 2021 which will bring together policy makers and evaluation practitioners to highlight evaluation methods and analysis, as well as the evaluation of energy technologies, programs and policies.
- The event under APEC Youngsters Forum: Raising Awareness on Energy Conservation and Energy Efficiency among High School Teachers and Students in the Asia-Pacific Region (EWG 12 2020A) will be held in October 2021 to share energy efficiency and conservation (EEC) awareness raising policy and implementation, competition on EEC ideas for students, and workshop on creating Action Plan Document on EEC awareness raising in APEC economies.
- Two workshops on APEC Best Practice Guidelines for Establishing and Enhancing Energy Efficiency Incentive (EEI) Schemes (EWG 09 2018A) will be held in April 2021. The workshops will provide APEC energy efficiency policy practitioners with practical information on how to design, establish and operate new energy efficiency incentive schemes as well as to enhance the existing EEI schemes, relevant for government priorities and policy objectives.

- **Clean Fossil Fuels**

In 2015, the Energy Ministers in Cebu, the Philippines, noted that clean energy technologies and traditional energy sources, including cleaner use of fossil fuels are important in addressing energy access challenges. The EWG will continue to pursue efforts to use fossil fuels cleanly and sustainably. The clean use of fossil fuels through the use of carbon capture utilization and storage (CCUS) remain a high priority for many APEC economies as fossil energy will continue to be a large part of the region's energy mix in the foreseeable future and CCUS is critically needed to

address emissions in many hard-to-abate industries, including steel, cement, and chemicals, and fertilizers. In this context, Expert Group on Clean Fossil Energy (EGCFE) conducts activities focusing on the adoption of cleaner fossil fuels, such as natural gas, cleaner and more efficient coal technologies and CCUS technologies, and reducing barriers to their adoption. EGCFE will also deal with security issues including OGS.

Expected outcomes and deliverables for 2021 include:

- The first PREP-Peer Review on Efficient Power (EWG 12 2017A) project will be completed in 2021 to review and provide advice on current coal power generation practices in Viet Nam as the prototype for follow-on peer reviews in other APEC developing economies.
- The PREP – Peer Review on Efficient Power, Phase II project (EWG 06 2020A) will be conducted in 2021 with two volunteer economies.
- The US-self funded Best Coal Power and Cogeneration Plant Case Studies project (EWG 02 2019S) will be completed in 2021, and will highlight more than a dozen coal plants with world-class designs and performance, including efficiency, emissions, and water consumption.
- The US-self funded project APEC Regional Workshop on Coal Plant Efficiency (EWG 01 2019S) was planned in 2021, likely in an Asian member economy, but a virtual workshop is now being considered if the COVID pandemic continues. Also, to be more forward looking, the scope of this proposed workshop will be broadened to include coal power plant flexibility which is a critical issue that can curtail variable renewable power generation.
- The 2nd EGCFE Coal Meeting was rescheduled to be held virtually in the 1st quarter of 2021, or possibly in conjunction with the APEC Regional Workshop on Coal Plant Efficiency.
- The 3rd EGCFE Oil & Gas Meeting was rescheduled to be held in 2021.

- **Low-Carbon Towns**

Responding to the instructions first given by APEC Energy Ministers Meeting (at EMM9 in 2010) “to encourage creation of low-carbon communities in urban development plans, and share best practices for making such communities a reality”, the EWG members have undertaken joint actions through the Low Carbon Model Town workstream. The project has delivered feasibility studies in 7 cities/towns through different phases: Yujiapu Financial District (Tianjin, China), which was a green field development from scratch; Samui Island (Thailand), which focused on rural tourism resort area development issues; Da Nang (Viet Nam) which included redevelopment dealing with existing urban districts; San Borja (in Lima, Peru), focusing on residential area issues; Bitung (Indonesia) focusing on industrial city issues; Mandaue City (The Philippines) which included cooperation with neighboring cities to boost sustainability, and Krasnoyarsk (Russia) which focused on an inland region with high heating and cooling system demands. As a step forward, the LCMT project is proceeding into a new phase of the dissemination of the “Low Carbon Town”, based on the concept and lessons learned from the 7 phases mentioned above, by utilising the Low-Carbon Town Indicator (LCT-I) System for self-evaluation on low-carbon town development. In-depth feasibility studies have been carried out in Banda Aceh City, Indonesia, Hang Tuah Jaya and Shah Alam City, Malaysia,

Davao City, the Philippines, and Da Lat City, Viet Nam. APERC has been the executant of this project. The LCMT dissemination Phase 3 project was extended until December 2021 due to the pandemic.

Expected outcomes and deliverables for 2021 include:

- The Wrap-up LCMT Symposium under APEC Low-Carbon Model Town (LCMT) Project Dissemination Phase 3 (EWG 01 2019A) will be held in 2021 to conclude the lessons learnt from the LCMT projects.
- The 3rd in-depth feasibility studies will be carried out in the volunteer towns which are Khon Kaen Municipality, Thailand, La Molina District, Lima, Peru and Phu Quoc, Viet Nam.

- **Sustainable Energy Technology**

Leaders endorsed in Beijing the establishment of the APEC Sustainable Energy Center (APSEC) in 2014 to facilitate cooperation on sustainable energy development across the APEC region through information exchange, policy dialogue, technology research, development and demonstration, and capacity building on sustainable energy. In 2015, APSEC began operations with initial activities to share best practices on clean coal technologies and to undertake the APEC Cooperation Initiative for Jointly Establishing an Asia-Pacific Urbanization Partnership endorsed by Leaders in 2014. In 2016, encouraged by Ministers, APSEC worked on a roadmap for the implementation of this initiative, organized a workshop on APEC Sustainable Cities, established a cooperative network of sustainable cities (CNSC) in APEC economies, and developed solar-powered emergency shelter solutions (SPESS) as an energy-resilience tool for natural disaster relief. APSEC's five-year plan was endorsed by the EWG in 2017, with APEC Sustainable City Development Program (CNSC) & Asia-Pacific Clean Coal (Energy) Technology Transfer (CCT) serving as two pillar programs. In 2019, the EWG endorsed Asia-Pacific Energy Transition Solutions (ETS) as a pillar program in APSEC's next 5-year Work Plan, and generally supported APSEC to develop the implementation plan of the next 5-year Work Plan.

By continuously working on the CNSC, CCT and ETS pillar programs, APSEC will strive to develop local communities that are energy sustainable and economically vibrant, and where energy production and consumption is environmentally sustainable and efficient, to implement CCT training and to promote transfer of technologies, to promote clean energy technologies and sustainable city development within APEC region, provide energy transition solution for a safe, clean, efficient and sustainable energy system through tasks of high level research to produce APEC publications, flagship events and training activities for capacity building and knowledge sharing, and cooperative networks building for resources integration and intelligent enrichment.

Expected outcomes and deliverables for 2021 include:

- One workshop "Sustainable Mobility-City Solutions with Cross-sectoral Coordination" will be held in March-April 2021.
- A case study on Sustainable Mobility-Cross-sectoral Planning and Strategies will be delivered as an APEC publication in March 2021.

- The Sixth APEC Workshop on Sustainable Cities will be held on the margin of the EWG 61 meeting.
- The Seventh Asia-Pacific Energy Sustainable Development Forum will be held in September 2021.
- The report of Research on APEC Sustainable Urban Planning for Addressing Climate Change and Disasters (EWG 09 2019S) is expected to be endorsed by February 2021.

- **Energy Resiliency**

During EMM 12, the EWG was instructed to create the Task Force on Energy Resiliency. According to its Terms of Reference (TOR), the objective of the ERTF is to implement the Energy Ministers' instructions to promote energy resiliency in the APEC region anchored on the four strategic priority sub-themes identified in the Cebu Declaration: 1) Disaster-proofing energy infrastructures; 2) Advancing cutting-edge energy efficiency technologies; 3) Promoting community-based clean energy use in energy poverty stricken areas; and 4) Improving energy trade and investment in APEC. In 2019, the Task Force decided four workstreams would be pursued: Grid Resilience; Strengthening Infrastructure; Energy Water-Nexus; Energy Access. In 2019, the Energy Access workstream launched a survey, and received feedback from most member economies which provided valuable insights for the future promotion of energy access within the APEC region. An Energy Access Paper was endorsed by the EWG in 2020. A new workstream, Energy Resilience Principles was proposed in 2019 within the ERTF and endorsed by the EWG in 2020. The purpose of the principles is to provide an inclusive list of elements necessary for considering and improving energy resiliency within the region.

Expected outcomes and deliverables for 2021 include:

- The workshop and technical training under Resilience Tool based on Solar-Powered Emergency Shelter Solutions (SPESS) for Natural Disaster in APEC (EWG 13 2019A) will be held in May 2021 to engage key APEC stakeholders.
- The APEC Workshop on the Use of Pumped Storage Hydropower to Enable Greater Renewable Energy Use and Reliable Electricity Supply (EWG 09 2019A) will be a three-day workshop, which will be held on 2-5 February 2021 virtually, focusing on capacity-building and training for further deployment of pumped storage hydropower.
- Workshop on Energy Resiliency is planned to be held in 2021 to formulate Energy Resiliency Guideline.
- The US self-funded project on The Role of Integrated Distributed System Planning in Maximizing the Use of Distributed Energy Resources and Resiliency in the APEC Region (EWG 03 2020S) will be completed in September-October 2021.
- The workshop on promoting energy access is planned to be held in 2021, focusing on capacity building in providing electricity access in remote areas, and maximizing the role of renewables in realizing universal electricity access.

- **Cross-cutting Issues**

In 2021, the EWG will continue to seek collaboration with the Emergency Preparedness Working Group on energy resilience, with the Policy Partnership on Science, Technology and Innovation, Automobile Dialogue, and Transportation Working Group on new energy technology, and with the Policy Partnership on Women and the Economy on gender mainstreaming in the energy fora. In particular, the EWG will encourage the projects to seek alignment with *La Serena Roadmap for Women and Inclusive Growth Implementation Plan* to enhance women's participation in the energy field.

3. Itemized Work Plans for 2021

Title	Summary of Specific Plans	Mandate (Leaders/Ministers/SOM/SCE Priorities and Decisions, Strategic Plans and to ABAC recommendations)	ECOTECH Priorities and/or Host Year Priorities	Cross-fora collaboration (within APEC and beyond APEC)
PREP - Peer Review on Efficient Power (EWG 12 2017A)	<p>A PREP – Peer Review on Efficient Power initiative for coal power generation is proposed wherein experts will review current coal power generation practices in APEC developing economies.</p> <p>Currently target of coal plants are in Viet Nam and PREP Peer Review Teams from developed member economies will collect information from government ministries and regulators, power utilities, industry associations, and other relevant stakeholders.</p> <p>A report on findings, including summaries of current coal power plant management practices to assure optimum reliable performance will be prepared for each volunteer economy and recommendations made to improve plant performance.</p> <p>The project requested another 12-month extension with new completion date of December 2021.</p> <p>Much of the needed information has been collected and is being reviewed by the contractor who is seeking clarification and some additional details from the two plants.</p>	<p>We encourage member economies, where there are difficulties to quickly deploying alternatives to coal, to enhance cooperation in developing and applying clean coal technologies such as highly efficient coal-fired power plants.</p> <p>We instruct the EWG through the EGCFE to promote clean coal technologies, such as Ultra-Supercritical (USC) coal-fired power generation, Integrated Gasification Combined Cycle (IGCC) and Carbon Capture, Utilization, and Storage (CCUS).</p> <p>(2014 EMM Statement) Facilitate joint research and development on clean fossil energy technologies that are adapted to the needs of APEC economies, as well as demonstrate and disseminate appropriate clean fossil energy technologies.</p> <p>Increase understanding of the relevant clean fossil energy technologies including carbon capture, use, and storage (CCUS), promoting their efficient use, and facilitating access to these technologies by encouraging information exchange.</p> <p>(2015 EMM Statement)</p>	Sustainable Growth, Human Security	
APEC Best Practice Guidelines for Establishing and Enhancing Energy Efficiency Incentive (EEI) Schemes (EWG 09 2018A)	<p>This capacity building project will provide APEC energy efficiency policy practitioners with practical information on how to design, establish and operate new energy efficiency Incentive (EEI) schemes as well as enhance existing EEI schemes, relevant for government priorities and policy objectives.</p> <p>The project has three major deliverables: 1) a "how to" handbook on how to establish EEI schemes based on learnings gained from existing successful EEI schemes. 2) 1st workshop for energy efficiency policy practitioners in Asia and 2nd workshop in</p>	<p>We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030.</p> <p>(2016 Leaders' Declaration)</p>	Sustainable Growth, Human Security	IEA

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	conjunction with the Australian EEI scheme cross-jurisdictional meetings or COAG NEPP meetings; 3) Project outputs and other relevant resources relevant to establishing and running EEO schemes collated for inclusion on an appropriate APEC EWG project webpage.			
APEC Low-Carbon Model Town (LCMT) Project Dissemination Phase 3 (hereinafter referred to as Dissemination Phase 3) (EWG 01 2019A)	<p>The wrap-up symposium is planned to be held in September 2021 in Japan.</p> <p>The publication of the summary report of the symposium is expected to be finished in December 2021.</p> <p>The 3rd in-depth feasibility study will be carried out in the volunteer towns which are Khon Kaen Municipality, Thailand, La Molina District, Lima, Peru and Phu Quoc, Viet Nam in 2021.</p>	<p>We encourage ongoing efforts in this direction toward energy efficient and low-carbon development in urban settings, including the implementation of the APEC Low-Carbon Model Town Project, use of green codes and standards for buildings, and the Energy Smart Communities Initiative.</p> <p>(2015 Leaders' Declaration) We instruct the LCMT-TF to move the current LCMT Project into the next stage in order to disseminate Low-Carbon Towns in the Asia-Pacific region.</p> <p>(2015 EMM Declaration)</p>	Sustainable Growth, Human Security	OECD, ADB, ICLEI, IDB
Filling the Gap to Reach the Goal of Doubling Renewable Energy in the APEC Region - Phase 2 (EWG 02 2019A)	<p>One workshop is planned to be held in September 2021. The goal of workshop will engage renewable energy experts, policy makers and private sectors to discuss the draft plan of renewable energy roadmap and share information, tools and best practices for developing for renewable energy projects and roadmap.</p> <p>The final report highlighting the recommendations with suggested roadmap to develop renewable energy and reach the doubling goal is expected to be submitted in December 2021.</p>	<p>The future economic growth of the APEC region will be supported by an appropriate mix of energy resources and power generation technologies that includes both conventional and renewable energy with increasing priority for clean energy sources and enhanced energy efficiency. In this regard, we will build on synergies among the Member Economies aimed at maximizing strengths from each economy thus minimizing costs of policy implementation.</p> <p>(2015 EMM Declaration) We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030.</p> <p>(2016 Leaders' Declaration)</p>	Sustainable Growth, Human Security	IRENA, IEA
APEC Multi-Stakeholder Dialogue on Promoting Renewable and Clean Energy (RCE) Policies (EWG 03 2019A)	A 2-day Dialogue will be held in Viet Nam in May 2021. Discussion topics may include overview on renewable and clean energy (RCE) policies, RCE policies and markets – how to create the right market conditions for optimal results, identify renewable energy/fossil energy linkages and suggest draft clean energy	The future economic growth of the APEC region will be supported by an appropriate mix of energy resources and power generation technologies that includes both conventional and	Sustainable Growth, Human Security	IEA, ASEAN

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	<p>legislation models which support the linkages etc.</p> <p>A summary report (ranging from 10 to 15 pages) with outcomes and recommendations from the Dialogue is expected to be finished in June 2021, and will be presented to the EWG.</p>	<p>renewable energy with increasing priority for clean energy sources and enhanced energy efficiency. In this regard, we will build on synergies among the Member Economies aimed at maximizing strengths from each economy thus minimizing costs of policy implementation.</p> <p>(2015 EMM Declaration) We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030.</p> <p>(2016 Leaders' Declaration)</p>		
<p>Exploring Co-Benefit Opportunities for Renewable Energy and Energy Efficiency Projects in the APEC Region (EWG 04 2019A)</p>	<p>The 1st workshop is planned to be held in March 2021 in Hawaii, USA. The 1st Workshop (now planned to be virtual) will focus on sharing best practices for the RE&EE project from the perspective of the developed APEC Economies to participants from the developing APEC Economies.</p> <p>The 2nd workshop is planned to be held in June 2021 in Thailand. This workshop will focus on sharing selected successful project in transportation sector and build capacity in project design and planning.</p> <p>The final report is expected to be finished in July-September 2021.</p>	<p>We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030.</p> <p>(2016 Leaders' Declaration) We reaffirm our commitment towards Leaders' aspirational goals to reduce aggregate energy intensity by 45 percent by 2035, to double the share of renewable energy in the APEC energy mix by 2030, and to achieve sustainable and resilient energy development within the Asia-Pacific.</p> <p>(2014 AMM Statement)</p>	<p>Sustainable Growth, Human Security</p>	<p>TPTWG, PPSTI</p>
<p>Sustainable Mobility: Routes for Integrating the Energy and Transport Sectors for Urban Cities (EWG 05 2019A)</p>	<p>One workshop-"Sustainable Mobility-City Solutions with Cross-sectoral Coordination will be held in March-April 2021.</p> <p>A case study on Sustainable Mobility-Cross-sectoral Planning and Strategies will be delivered as an APEC publication in March 2021.</p>	<p>In transitioning to a low-carbon economy we will explore the contribution of clean energy technologies and energy efficient initiatives in the transport and power sectors. These may include biofuels, civil nuclear power for interested Member Economies, advanced coal technologies, liquefied natural gas (LNG), solar, wind, and marine energy technologies.</p> <p>(2015 EMM Declaration)</p>	<p>Sustainable Growth, Human Security</p>	<p>GIZ', Emissions Development Strategic Partnership, LAC/Asia Regional Platforms</p>
<p>APEC Workshop on University Collaboration to Support Data Gathering</p>	<p>A 3-day workshop will be held in June or July 2021.</p> <p>The project completion report is expected to be submitted on</p>	<p>The future economic growth of the APEC region will be supported by an appropriate mix of energy resources</p>	<p>Sustainable Growth, Human Security</p>	<p>HRDWG</p>

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and Analysis in Energy Efficiency and Renewable Energy (EWG 06 2019A)	September 2021.	and power generation technologies that includes both conventional and renewable energy with increasing priority for clean energy sources and enhanced energy efficiency. In this regard, we will build on synergies among the Member Economies aimed at maximizing strengths from each economy thus minimizing costs of policy implementation. (2015 EMM Declaration) We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration) Improve human capital development and our goals to improve people-to-people connectivity and continue the promotion of cross-border cooperation in education engagement. (2015 Leaders' Declaration)		
APEC Peer Review on Energy Efficiency (PREE) Phase 10 (Follow-Up PREE) (EWG 07 2019A)	The 6 th Follow-up PREE will be conducted in Indonesia tentatively in October 2021. PREE deliverables will include a Peer Review Report on Energy Efficiency for the host economy, which will include identification of barriers to the effective implementation of the action plans and the recommendations for overcoming those barriers. The Peer Review Report is expected to be finished in March 2022. The 5 th EEP Workshop was held on 18 November 2020. Its summary report was endorsed by EWG members in February 2021.	The future economic growth of the APEC region will be supported by an appropriate mix of energy resources and power generation technologies that includes both conventional and renewable energy with increasing priority for clean energy sources and enhanced energy efficiency. In this regard, we will build on synergies among the Member Economies aimed at maximizing strengths from each economy thus minimizing costs of policy implementation. (2015 EMM Declaration)	Sustainable Growth, Human Security	
Energy Intensity Reduction in the APEC Region's Urbanised Cities (EWG 08 2019A)	The one-day online workshop is scheduled to be held on 23 March 2021 in Hong Kong, China. The summary record will be shared at the 56 th EGEEC and the 61 st EWG meetings.. The draft study report is expected to be submitted in March 2021 and reported at the 56 th EGEE&C meeting.	We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)	Sustainable Growth, Human Security	

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APEC Workshop on the Use of Pumped Storage Hydropower to Enable Greater Renewable Energy Use and Reliable Electricity Supply (EWG 09 2019A)	This project supports a three-day workshop focusing on capacity-building and training for further deployment of pumped storage hydropower as an 'off the shelf' technology for large scale electricity storage. The virtual workshop is scheduled to be held on 2-5 February 2021.	We recognize that water is at the core of sustainable development and highlight its link to economic growth, poverty reduction, food security, a better sanitary state of the environment and ecosystems protection. (2012 Environmental Ministers Meeting)	Sustainable Growth, Human Security	
APEC Workshop on Strategies and Successful Case Studies on Solar Energy (EWG 10 2020A)	This project proposes to organize a 2-day APEC Workshop on Strategies and Successful Case Studies on Solar Energy in Viet Nam, which will bring officials, representatives from the private and academic sectors and other stakeholders solar energy to share respective case studies and strategies in solar energy. Two (2) day Workshop is scheduled to be held in Viet Nam in November 2021.	We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)	Sustainable Growth, Human Security	UNEP, IEA, OECD
Accommodating Disruptive Technology into RE&EE Policy for Energy Security (EWG 11 2020A)	This project aims to review the impact of disruptive technologies and share best practices on RE&EE policies to accommodate the disruptive technologies through documentation studies, interviews, questionnaires and a workshop tentatively in Thailand in May 2021. Final report consisting of reviewed disruptive technologies, recommendation for accommodating RE&EE policies and best practices shared from developed to developing APEC economies (total no more than 50 pages) will be submitted to the EWG in October 2021.	We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)	Sustainable Growth, Human Security	
Evaluation of Energy Technologies, Programs and Policies (EWG 12 2019A)	Evaluation of energy technologies, programs and policies is essential to developing effective and useful technologies, programs and policies and to understanding the impacts of policy and program implementation. Two-day workshop is scheduled to be held will bring together policy makers and the evaluation practitioners to highlight evaluation methods and analysis, and the evaluation of energy technologies, programs and policies. This workshop was rescheduled in 2021 and will provide insights on the value of having robust evaluation practices through the presentation of best practices, case studies and workshop sessions.	We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)	Sustainable Growth, Human Security	IEA, EEAP
Demonstration and Promotion of Energy	This project aims to solve the key problems faced by disaster victims in the Asia-Pacific region, such as the energy supply and	APEC has proposed the goal of "Building Sustainable and Resilient	Sustainable Growth, Human Security	EPWG

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Resilience Tool based on Solar-Powered Emergency Shelter Solutions (SPSS) for Natural Disaster in APEC (EWG 13 2019A)	<p>the basic living guarantee.</p> <p>This project will organize workshop in May 2021 and technical training to engage key APEC stakeholders, and provide an opportunity to explore potential cooperation among APEC economies about establish technical guideline for solar emergency shelter in post disaster recovery.</p> <p>The project report will be submitted to the EWG in November 2021.</p>	<p>Communities" in 2015.</p> <p>(2015 Leaders' Declaration) It encourages further cooperation of member economies in disaster preparedness, risk reduction, response and post-disaster recovery, as well as the application of science and technologies.</p> <p>(2014 Leaders' Declaration)</p>		
APEC Workshop on Grid Resiliency through Energy Storage (EWG 01 2020A)	<p>This project supports a three-day workshop focusing on Energy Storage technologies applied for energy resiliency and economics. The workshop will be held in 3rd quarter of 2021 in Kona, Hawaii.</p> <p>Following the workshop, the draft APEC technical report provided to the APEC participants will be updated, appended and prepared by Sandia National Laboratories and contractors to synthesize key lessons from the project for participants and APEC economies.</p>	<p>APEC Leaders recognized the challenge presented by resource scarcity, by including a statement of their intention to "address the nexus of water, energy and food security through the promotion of integrated policies and collaborative approaches".</p> <p>(2013 Leaders' Declaration)</p>	Sustainable Growth, Human Security	
APEC Workshop on Achieving Business Sustainability for Clean Energy Start-Ups (EWG 02 2020A)	<p>This workshop will be held in Bali, Indonesia, in March 2021, to facilitate the basis for new and important perspectives on existing practices between Asia Pacific's clean energy entrepreneurs, governments, and experts. This workshop will help the start-ups on promoting and achieving their business sustainability.</p>	<p>To focus on how innovative practices contribute towards sustainable development and energy management.</p> <p>(APEC 2020 Priority area 3) To concentrate on the conducive business environment for SME's, Start-ups, and Social Enterprises (APEC 2020 Priority area 2)</p>	Sustainable Growth, Human Security	PPSTI, SMEWG
Integrating Electrical Vehicles and Solar Rooftop PV in Electricity Distribution Systems with Continued Performance of Distribution Transformers (EWG 03 2020A)	<p>The project will formulate recommendations to preserve the electricity distribution systems' performance and reliability when integrating solar rooftop PV and EVs.</p> <p>This project also will organise workshop aiming at presenting the draft technical and policy recommendations, as well as allowing sharing of experience among the participants. The 2-days workshop will be held in an APEC developing economy in Southeast Asia in September 2021.</p>	<p>The goals for sustainable growth, include, "Enhance energy security and promote energy-efficiency and low-carbon policies" and "promoting private investment in green industries and production processes".</p> <p>(2010 Leaders' Declaration APEC Growth Strategy) We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035.</p> <p>(2016 Leaders' Declaration) By facilitating successful solar rooftop PV deployment, the project will further contribute to achieving the goal of "doubling the share of renewables by</p>	Sustainable Growth, Human Security	ICA

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		2030" (2014 Leaders' Declaration).		
A Community-based Waste Management to Renewable Energy Workshop (EWG 04 2020A)	<p>This project plans to hold workshop aiming to encourage application of waste management to renewable energy project through community involvement and engagement, as one of sustainable solutions for the waste crisis.</p> <p>This workshop will be held on May 2021 for two days in Bali. The activities will include seminar, discussion, sharing of best practices and also production of Project Report.</p>	<p>We emphasize the importance of proper planning and adequate infrastructure for sustainable city development. We therefore welcome the work of our officials to discuss the challenges of rapid urbanization in APEC, including innovative ways of addressing waste management and water-related challenges. (2016 Leaders' Declaration) We recognize the lack of effective solid waste management infrastructure imposes great socio-economic and environmental costs, and we encourage further work on this topic. (2017 Leaders' Declaration)</p>	Sustainable Growth, Human Security	PPSTI, PPWE
Water-Energy Nexus Decision Tool for Electric Power Generation and Cogeneration (EWG 05 2020A)	<p>This project covers development of a tool for fossil fuel- and biomass-based thermal power generation and cogeneration, which could be extended in subsequent projects to cover water issues for other water-intensive power and industrial facilities.</p> <p>This project also provides web-based remote/virtual training on the new tool to at least approximately 50 people from various organizations in the region.</p> <p>Showcase this tool, including lessons learned from web-based remote/virtual training, at a major conference to alert various stakeholders of the availability of a scientific support tool for planning, policy, and investment decisions for thermal power generation and cogeneration.</p> <p>A final report will be prepared describing the tool, the results of the web-based remote/virtual training, and the showcase.</p>	<p>• Our energy facilities require a reliable and abundant source of water, which is already in short supply around the world. As we define the appropriate fuel and power generation technology mix that would support the twin goals of economic prosperity and environmental sustainability, we will endeavor ways to understand the complex relationship between energy and water, address challenges, and utilize both resources more efficiently. •As global concern on the linkages among energy, water and security increases, we hereby instruct the EWG to initiate in-depth studies on challenges stemming from the energy-water nexus and ways to mitigate the vulnerabilities by reducing water-stressed activities and striking a delicate balance for sustaining economic growth with the optimal use of energy and water resources. (2015 EMM Declaration)</p>	Sustainable Growth, Human Security	PPSTI
PREP – Peer Review on Efficient Power, Phase II (EWG 06 2020A)	Developed member economy experts will tailor the peer review to 1-2 volunteer economies' interests and collect information from government ministries and regulators, power utilities, industry	•A priority goal in developing a resilient APEC community will be to provide energy access to our people, including	Sustainable Growth, Human Security	

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	<p>associations, and other relevant stakeholders via site visits and virtual interviews.</p> <p>A final APEC project report will be prepared covering for the each peer reviews for the volunteer economy/ies, including summaries of current plant management practices, identified deviations from design performance, and recommendations to improve plant performance and flexibility to operate with more renewable energy on the grid, as appropriate to the completed peer review.</p>	<p>in remote communities. We note that clean energy technologies and traditional energy sources, including cleaner use of fossil fuels, are important in addressing energy access challenges.</p> <p>•We instruct the EWG to conduct capacity building activities to facilitate fossil fuel subsidy reform for interested economies, including the conduct of additional peer reviews and the exchange of best practices, to eliminate wasteful consumption and redirect investment toward cleaner energy alternatives and other measures for sustainable growth across the region.</p> <p>(2015 EMM Declaration)</p>		
Workshop on Energy Resilience Principle (EWG 07 2020A)	This project supports holding workshops in 3 or 4 APEC economies, which highlight to promote dissemination of the Principle for the capacity building of people in public and private organizations related to energy sector from developing economies, and to discuss, exchange and share attendees' experience and views on the detail and concrete measures of its guideline in line with the situation in each economy.	<p>We encourage members to improve the robustness of their energy infrastructure and policy, through capacity building, sharing of information, and promoting best-practices as appropriate.</p> <p>(2015 EMM Declaration)</p> <p>We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030.</p> <p>(2016 Leaders' Declaration)</p>	Sustainable Growth, Human Security	ABAC
APEC Workshop on Promoting Renewable Energy for Rural and Remote Area Development (EWG 08 2020A)	This project aims at organizing a Workshop on Promoting Renewable Energy for Rural and Remote Area Development. The Workshop will be held in October 2021 in Viet Nam.	<p>We welcomed the efforts toward reducing aggregate energy intensity, accelerating clean, efficient, and renewable energy deployment, pursuing sustainable and resilient energy development, and developing diversified, flexible and integrated natural gas market in the Asia-Pacific, which in particular may contribute to reducing greenhouse gas emissions. To this end, we urge economies to strengthen coordination and cooperation through sharing best practices, and</p>	Sustainable Growth, Human Security	IEA, ASEAN

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		<p>deploying advanced technologies, including waste recycling. (2017 AMM statement) We reaffirm our aspirational goals to double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)</p>		
<p>APEC Capacity Building Workshop on Retro-commissioning (RCx) (EWG 09 2020A)</p>	<p>This project will organise a capacity building workshop cum training to share retro-commissioning (RCx) guidelines and developments.</p> <p>This project aims at promoting RCx in APEC region, by providing a platform for fostering the growing importance of RCx from the perspective of improving energy efficiency in driving progress toward meeting the energy intensity reduction goal of APEC and increasing employment opportunities and economic activities post COVID-19.</p>	<p>We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035. (2016 Leaders' Declaration)</p>	<p>Sustainable Growth, Human Security</p>	<p>IEA</p>
<p>Utilizing renewable energy certification to facilitate APEC regional renewable energy growth (EWG 10 2020A)</p>	<p>This project intends to promote Renewable Energy Certification (REC), which could provide economic incentives for producing renewables.</p> <p>A survey of REC systems by APEC member economies will be conducted to find their linkages to renewable energy policies, and role in international supply chain and expectations from stakeholders.</p> <p>A workshop will be held to present findings of the survey, to explore different perspectives of REC systems, and to identify key elements of a successful REC system.</p>	<p>We reaffirm our aspirational goals to double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration) Promote energy-efficiency and low-carbon policies. (2010 Leaders' Declaration APEC Growth Strategy)</p>	<p>Sustainable Growth, Human Security</p>	<p>SCSC, the Carbon Disclosure Project (CDP), the RE100</p>
<p>Implementation of Low-Carbon Model Town through Green Building Infrastructure and Management Platform (EWG 11 2020A)</p>	<p>this project aims to implement low-carbon town concept through the act of low carbon plan and the infrastructure that support green building as low-carbon development strategy.</p> <p>The outputs include the introduction of green building action plan, implementation of green building infrastructure in government buildings, and sustainable management through the Internet of Things (IoT). Banda Aceh City (Indonesia) will be the object of the implementation stage.</p>	<p>Driving innovative sustainability. In this priority, innovation in sustainability will be implemented in this project through the creation of management or a platform for sustainable community that can contribute to energy efficiency. (APEC 2020 Priority Area 3)</p>	<p>Sustainable Growth, Human Security</p>	<p>PPSTI, ATCWG</p>
<p>APEC Youngsters Forum: Raising Awareness on Energy Conservation and Energy Efficiency among High School Teachers and Students in the Asia-</p>	<p>This project's main event will be held in October 2021, which share on energy efficiency and conservation (EEC) awareness raising policy and implementation, competition on EEC ideas for students, and workshop on creating Action Plan Document on EEC awareness raising in APEC economies.</p>	<p>Driving Innovative Sustainability. APEC economies are the largest consumers of global energy (60%). (APEC 2020 Priority Area 3)</p>	<p>Sustainable Growth, Human Security</p>	<p>PPSTI</p>

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Pacific Region (EWG 12 2020A)				
Workshop on Korea's new and renewable energy policies and best practices applying them into the APEC region (EWG 13 2020A)	<p>The project is designed to build the capacity of project participants through workshop for a better support of new and renewable energy sector dissemination within APEC economies. The practices and experiences shared on the selected cases of the Republic of Korea will help participants to promote and facilitate new and renewable energy sector development in their home economies.</p> <p>The workshop will be contained 2-day web-based seminar and 2-day field trip in Jeju-island, where has aggressive goals to develop new and renewable energy to reduce greenhouse gases emissions.</p>	<p>We reaffirm our aspirational goals to double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)</p>	<p>Sustainable Growth, Human Security</p>	
The promotion of community waste-to- energy system (EWG 14 2020A)	<p>This project plans to involve APEC economies by performing inter-collaboration in household waste-to-power generation. This will be implemented through a policy dialogue for the purpose of condensing a set of recommendations that can be applied in many APEC economies and will involve a case study in local communities focusing on the scientific, economic, and social aspects of this issue.</p>	<p>Driving Innovative Sustainability for Innovative waste management through a circular economy. (APEC 2020 Priority Area 3)</p>	<p>Sustainable Growth, Human Security</p>	<p>SCE, Nine university professors from eight APEC economies including Japan, Thailand, USA, Indonesia, Malaysia, Viet Nam, Australia, Chinese Taipei and one professor from Saudi Arabia</p>
Roadmap for Facilitating Renewable Energy Investment in APEC (EWG 15 2020A)	<p>The project is to focus on the international investment of renewable energy and work with multiple APEC economies to issue a report by identifying the barriers and studying the roadmap of renewable energy investment facilitation.</p> <p>The report will include (1)the global practice in international renewable energy investment facilitation, (2)the challenges and barriers of international renewable energy investment, (3)Economy-specific studies in its investment environment and (4)Roadmap of facilitating international renewable energy investment in APEC from the perspective of national, bilateral and multilateral levels.</p>	<p>We reaffirm our aspirational goals to double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration) Energy Ministers noted the importance of energy efficiency and cleaner energy supplies as a means to address energy security, economic growth, and lower carbon emissions. (2010 EMM Declaration)</p>	<p>Sustainable Growth, Human Security</p>	<p>CTI, EC, SCE</p>
APEC Regional Workshop on Coal Plant Efficiency (EWG 01 2019S)	<p>The workshop aims to share information on technologies and best practices that increase existing power plants' efficiency and reduce their emissions, including the possibility to retrofit with CCUS.</p> <p>A workshop summary will make recommendations for follow-on work on coal plant efficiency, including technologies and best practices.</p>	<p>We encourage member economies, where there are difficulties to quickly deploying alternatives to coal, to enhance cooperation in developing and applying clean coal technologies such as highly efficient coal-fired power plants.</p> <p>We instruct the EWG through the EGCFE to promote clean coal technologies, such as Ultra-Supercritical (USC) coal-fired power</p>	<p>Sustainable Growth, Human Security</p>	

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		<p>generation, Integrated Gasification Combined Cycle (IGCC) and Carbon Capture, Utilization, and Storage (CCUS).</p> <p>(2014 EMM Statement) Facilitate joint research and development on clean fossil energy technologies that are adapted to the needs of APEC economies, as well as demonstrate and disseminate appropriate clean fossil energy technologies.</p> <p>Increase understanding of the relevant clean fossil energy technologies including carbon capture, use, and storage (CCUS), promoting their efficient use, and facilitating access to these technologies by encouraging information exchange.</p> <p>(2015 EMM Statement)</p>		
<p>Best Coal Power and Cogeneration Plant Case Studies (EWG 02 2019S)</p>	<p>The case studies of high-efficiency, low-emission (HELE) coal-fired power generating units will investigate plant design, coal types, and emissions control technologies and identify management best practices that assure optimum and reliable performance.</p> <p>The state-of-the-art technologies and best practices for coal-fired power generation and cogeneration will be explained to decision makers in the AEPC region to aid them in making informed decisions for new plants.</p>	<p>We encourage member economies, where there are difficulties to quickly deploying alternatives to coal, to enhance cooperation in developing and applying clean coal technologies such as highly efficient coal-fired power plants.</p> <p>We instruct the EWG through the EGCFE to promote clean coal technologies, such as Ultra-Supercritical (USC) coal-fired power generation, Integrated Gasification Combined Cycle (IGCC) and Carbon Capture, Utilization, and Storage (CCUS).</p> <p>(2014 EMM Statement) Facilitate joint research and development on clean fossil energy technologies that are adapted to the needs of APEC economies, as well as demonstrate and disseminate appropriate clean fossil energy technologies.</p> <p>Increase understanding of the relevant clean fossil energy technologies</p>	<p>Sustainable Growth, Human Security</p>	

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		including carbon capture, use, and storage (CCUS), promoting their efficient use, and facilitating access to these technologies by encouraging information exchange. (2015 EMM Statement)		
APEC Workshop on District Cooling and/or Heating Systems (DCHS) (EWG 08 2019S)	The one-day virtual workshop was held on 17 November 2020 alongside the 31st EGEDA and 55 th EGEEC meetings hosted by Hong Kong, China. The summary record will be submitted to EWG members at the 56 th EGEEC and 61 st EWG meetings..	We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)	Sustainable Growth, Human Security	
Research on the Role of Urban Planning for Addressing Climate Change and Disasters (EWG 09 2019S)	The draft research was shared at the 6th Workshop on Sustainable Cities held in September 2020. The final report is expected to be endorsed by EWG members by February 2021.	We encourage ongoing efforts in this direction toward energy efficient and low-carbon development in urban settings, including the implementation of the APEC Low-Carbon Model Town Project, use of green codes and standards for buildings, and the Energy Smart Communities Initiative. (2015 Leaders' Declaration) We instruct the LCMT-TF to move the current LCMT Project into the next stage in order to disseminate Low-Carbon Towns in the Asia-Pacific region. (2015 EMM Declaration)	Sustainable Growth, Human Security	The report will be distributed for information to relevant international organizations and institutions: UN-ESCAP, UNDP, UNIDO, UN-Habitat, World Bank's Global Platform for Sustainable Cities GPSC, AIIB, ADB, Global Covenant of Mayors, ICLEI, C40, Cities' Alliance.
Oil and Gas Security Initiative: 2020 (EWG 01 2020S)	As for the postponed 5 th Oil & Gas Security Exercise, Thailand will discuss with APERC what date would be best to reorganize it. The 6 th Oil & Gas Security Network Forum will be held in Osaka, Japan, though the schedule is not decided yet.. The OGS newsletter is released bi-monthly. The OGS Study on "Impact of COVID-19 on energy security" is scheduled to be published in October 2021.	Improving the capacity of the APEC region to respond to emergencies such as disruptions in oil and gas supply is vital, and as such, we reaffirm the continuation of the APEC Oil and Gas Security Initiative(OGSI) which puts forward oil and gas security exercises, network and studies (2015 EMM Declaration)	Sustainable Growth, Human Security	IEA, ERIA
The 18th APEC Workshop on energy Statistics (APEC-IRENA Joint Training Workshop on Renewable Energy Statistics) (EWG 02 2020S)	This annually held workshop is expected to facilitate information exchanges and discussions among member economies, international energy organisations and the APEC Expert Group on Energy Data and Analysis (EGEDA) Secretariat. The virtual training workshop jointly with International Renewable Energy Agency (IRENA) was held on 15-17 December 2020.	We reaffirm our aspirational goals to double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)	Sustainable Growth, Human Security	IRENA, IEA

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	A summary record of the workshop will be produced and shared with EGEDA and EWG members and uploaded at the EGEDA website.			
The Role of Integrated Distribution System Planning in Maximizing the Use of Distributed Energy Resources and Resiliency in the APEC Region (EWG 03 2020S)	<p>This project will examine the role of integrated distributed system planning in maximizing the use of distributed energy resources (DER) in the APEC region.</p> <p>The project will share tools, techniques, and best practices from APEC grid modernization efforts. The project will provide an opportunity to demonstrate how cutting-edge distribution system planning techniques and new technologies can enhance reliability, resilience and DER utilization in the region.</p>	We reaffirm our aspirational goals to reduce aggregate energy intensity by 45 percent by 2035 and double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)	Sustainable Growth, Human Security	
Innovative Approaches for Scaling-up Renewable Energy Deployment in APEC Region (EWG 04 2020S)	<p>Through review, investigation and stakeholder consultation, the project will assess the RE development from performance of energy system, sustainability and energy access. Barriers and drives for RE development will be analyzed, suggestions and recommendations on innovative approaches will be put forward through analysis of policy, technologies, business environment, case study, etc.</p> <p>Research results will be synthesized in project report and shared with member economies.</p>	We encourage the facilitation of energy-related trade and investment, enhancement of access to affordable and reliable energy, and promotion of sustainable, efficient, and clean energy sources, which, in particular, would contribute to reducing global greenhouse gas emissions. (2017 Leaders' Declaration) We reaffirm our aspirational goals to double renewable energy in the regional energy mix by 2030. (2016 Leaders' Declaration)	Sustainable Growth, Human Security	IEA, IRENA