

Energy Working Group's Proposed Work Plan for 2019

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 strengthening energy security, improving energy access, 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, enhancing energy efficiency, promoting energy resiliency; and advocating low-carbon development for sustainable growth.

EWG's priorities are also consistent with and guided by the annual APEC priorities agreed by Senior Officials. In 2019, under the overarching theme of "*Connecting People, Building the Future*," these priorities are:

- Digital Society
- Integration 4.0
- Women, SMEs and Inclusive Growth
- Sustainable Growth, including a focus on sustainable energy and smart cities

Given the relevance of sustainable energy within the 2019 APEC priorities, the EWG will seek to collaborate, as appropriate, in related initiatives. Furthermore, the EWG will examine its activities and ensure that those which are contributing to APEC action in these four priority areas engages 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 2019 priorities.

In the first half of 2019, EWG will have its policy dialogue centered on the topic of Energy Modernization, the priority issue proposed by Chile as APEC host economy. In the second half of 2019, EWG will continue the policy dialogue on the priority issue proposed by Malaysia, the APEC host economy of 2020. Besides, EWG is also working on developing Energy Vision Post 2020 which will be finalized by the end of 2019.

The themes of energy security, clean energy development and deployment, energy efficiency, sustainable transport, energy resiliency and sustainable growth continue to be prominent in the Energy Working Group'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 APEC economies will continue through workshops, information exchanges, training, best practice guides, peer reviews and other activities. Additional emphasis will be placed on exercise training for oil and gas emergencies and further efforts on clean and efficient use of fossil energy to address continued energy demand growth in the Asia-Pacific region.

As the basis of energy policy discussion among Energy Ministers as well as within EWG, the Asia Pacific Energy Research Centre (APERC) has been preparing the APEC Energy Demand and Supply Outlook every 3 years. The latest version is the 6th edition published in May 2016 and the next 7th edition is in progress towards its scheduled publication in May 2019. APERC will continue to carry out the annual publication of the APEC Energy Statistics and the APEC Energy Handbook 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. Expected Outcomes/Deliverables for 2019

The EWG's work plan is responsive to specific priorities from Leaders and Ministers on areas such as promoting energy security and energy access, developing clean and renewable energy, cleaner use of fossil fuels, rationalizing or phasing out inefficient fossil fuel subsidies, enhancing energy efficiency, and low-carbon development for sustainable growth. In addition, at the direction of EMM 12, the EWG established a new Task Force on Energy Resiliency that will take the lead in developing projects and interacting with other APEC fora, such as the Emergency Preparedness Working Group, on related issues. For a full list of all APEC itemized work plans currently under EWG as of January 2019 please see "2. Itemized Work Plans for 2019". Further projects are anticipated to be added to this list in 2019, both from APEC-funded and self-funded sources.

- **Energy Security**

The EWG will continue working on the Energy Security Initiative (ESI) as the principal mechanism to address energy security challenges in a sustainable manner. 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. The OGSI activities are now under the Expert Group on Clean Fossil Energy (EGCFE) meetings under its revised TOR. The ESI also includes: collecting complete, accurate and timely oil and gas data through the APERC Energy Statistics and Training Office (ESTO) and the Joint Organisations Data Initiative (JODI); short- and medium-term capacity building for energy data collection by the EWG's Expert Group on Energy Data and Analysis (EGEDA); enhancing diversity of supply. 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.

Expected outcomes and deliverables for 2019 include:

- The 4th OGSE will be held in March 2019 in Santiago, Chile.
- The 5th OGSN Forum will be held 10-12 April 2019 in Sendai City, Japan in conjunction with EGCFE Oil & Gas Meeting.

-Two studies titled “Emerging energy security risks in changing global energy landscape” and “Small-scale LNG in the Asia-Pacific region” are now underway and will be completed in the first half of 2019.

-An APEC Workshop on Energy and Economic Prosperity (EWG 6 2018A) in Da Nang, Viet Nam in March 2019. This workshop will present available analysis on the changing energy landscape and energy prices on the competitiveness of both consuming and producing economies.

- **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 in 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 signed an agreement in October 2015 with the International Energy Agency (IEA) to collaborate on clean and renewable energy and other energy issues of mutual interest. The EWG is also in conversations with the International Renewable Energy Agency (IRENA) and the World Energy Council (WEC) on possible joint activities.

Expected outcomes and deliverables for 2019 include:

-The “APEC Workshop on Public Private Partnership for Solar Energy Development” (EWG 12 2018A) in Viet Nam in June 2019. The workshop aims to enhance understanding on the use of PPP to develop solar energy, and provide the opportunities for solar energy experts from APEC member economies, solar energy producers and investors to share information and good practices on using PPP to remove the obstacles and facilitate the development of solar energy.

-The “Distributed Energy Resources Regulation and Rate Design” project seminar (EWG 16 2018A) in September or October 2019 in Chile. The seminar will explore and discuss the regulatory development and experience of the APEC economies, as well as relevant international analysis and experience.

-The “APEC/NARUC Workshop on Supporting Renewable Energy Integration and Energy Efficiency through Effective Regulation” (EWG15 2018S) on 19 March, 2019 in Hong Kong, China. This workshop will engage the EGNRET and EGEE&C to highlight the critical role of energy regulation in driving progress toward meeting renewable energy and energy efficiency goals in APEC member economies and throughout the region as a whole.

-The “Technological Challenges and Opportunities to Supply Flexibility to Electric Systems” project seminar (EWG 15 2018A) in the second semester of 2019 in Chile. Expert speakers and participants will review analysis and the experience of APEC economies regarding the deployment of the latest technological trends aimed to improve the electric system flexibility.

-The “Lessons Learned from Promotion Mechanisms Focused on Boosting Energy Solutions in Remote Areas” project workshop (EWG 17 2018A) in Chile in June 2019.

- **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) Project. 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 to reduce 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 coordination and reporting. The EWG is working with the International Copper Association (ICA) as well as the International Energy Agency on energy efficiency projects, and is developing coordination with International Partnership for Energy Efficiency Cooperation (IPEEC) on potential cooperative activities.

Expected outcomes and deliverables for 2019 include:

- The 4th EEP Workshop (EWG 2 2018A) will be held alongside the EGEE&C 53 meeting in the first half of 2019. The EEP Workshop provides a capacity building opportunity for APEC members, particularly developing economies, to strengthen their ability to develop robust energy efficiency policy.

- A workshop (EWG 5 2018A) in September 2019 to share information and ideas on areas for harmonizing efficiency testing methods and use of common data sources as a means for aligning energy efficiency regulations with the objective of promoting trade, and longer-term energy efficiency gains.

- The 5th Follow-up PREE (EWG 8 2018A) is expected to be conducted in March 2019 in Peru. The Follow-up PREE is designed to assist a former PREE host economy in implementing the recommendations of the PREE review team.

- Two Energy Efficiency Incentive (EEI) related workshops (EWG 9 2018A). One workshop will be held in conjunction with an APEC Expert Group on Energy Efficiency and Conservation meeting in June to August 2019. The 2nd workshop and trade event in partnership with Australia's Energy Efficiency Council's Energy Efficiency Trade Expo will be held in October 2019.

- An in-person workshop (EWG 10 2018A) for technical training of the "champion" economies, with peer advisors and regional and international experts in June to August 2019. The project will select three APEC island communities and initiate the development of written roadmap in collaboration with the select three APEC economies.

- The APEC Energy Smart Communities Initiative (ESCI) Best Practices Awards Ceremony (EWG 08 2018S) in Chile in October, 2019, associated with EWG 58th meeting. The winners will be invited to the ceremony to present their projects.

- **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 highly efficient electricity generation and industrial use and Carbon Capture Utilization and Storage (CCUS) remain high priorities for many APEC economies as fossil energy will continue to be a large part of the region's energy mix into the foreseeable future. In this context, EGCFE conducts activities focused on the adoption of cleaner fossil fuels, such as natural gas and clean coal technologies, and reducing barriers to their adoption. EGCFE will also deal with security issues including OGS.

Expected outcomes and deliverables for 2019 include:

- An APEC Regional Workshop on Coal Plant Efficiency (EWG 01 2019S) in late 2019, aiming 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.
- Best Coal Power and Cogeneration Plant Case Studies (EWG 02 2019S) on existing, under-construction, and planned high-efficiency, low-emission (HELE) coal-fired power generating units worldwide to highlight recent global advances towards the overall efficiency goals of 50% for electricity generation.
- A training program on Clean Coal Technology and Clean Energy Policy (EWG14 2018S), the details of which is disclosed under the category of Sustainable Energy Technology.
- The 2nd EGCFE Oil & Gas Meeting during 10 to 12 April 2019 in Sendai City, Japan in conjunction with the 5th OGSN Forum.

- **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", 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 Central Business District (Tianjin, China), which was a green field development from scratch; Samui Island (Thailand), which focussed on rural tourism resort area development issues; Da Nang (Vietnam) which included redevelopment dealing with existing urban districts; San Borja (in Lima, Peru), focussing on residential area issues; Bitung (Indonesia) focussing 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. APERC has been the executant of this project.

Expected outcomes and deliverables for 2019 include:

- The 3rd LCMT Symposium (EWG 1 2018A) in San Borja, Peru, September 2019. San Borja was the case town for the Feasibility Study and Policy Review in the LCMT Project Phase 4. It is expected that the participants will visit the previous case town and see the progress in their LCT development after the LCMT project implementation.

-Two “Research on Forms of Low-Carbon Energy System and Best Practices for APEC Sustainable Cities” project seminars (EWG 12 2018S) in March to May, and June to September, 2019. The seminars will focus on the research results and expert opinions.

- **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 EWG in 2017, with APEC Sustainable City Development Program (CNSC) & Asia-Pacific Clean Coal (Energy) Technology Transfer (CCT) serving as two pillar programs.

In response to the theme of 2019 and related priorities, APSEC has been and will keep working on cities’ sustainable development. As people’s living space and application platform for digital and green energy technologies, sustainable cities will ensure better people’s connection and living future. By continuously working on the CNSC and CCT 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, 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 2019 include:

- APEC publication “APEC Sustainable Urban Development Report – From Models to Results” as the outcome of the self-funded project (EWG 11 2018S); research report on integrated multi-energy system status and experience sharing in APEC region as the outcome of the self-funded project (EWG 10 2018S); and research on low-carbon energy system forms and best practices for APEC sustainable cities will be carried out and a research report will be the main deliverable for the project (EWG 12 2018S).

- Two flagship events according to the endorsed five year work plan. One is the 4th Workshop on Sustainable Cities, to be held in the margin of EWG57 with the help of host economy, and the other one is the 5th Anniversary Event on Sept.19-21 in Tianjin China;

- Organize training activities to promote ESCI award in China

- Keep inviting new Advisory Board members, and new CNSC Networks members;

- Develop and maintain the information platform including the new website;

-A one-week high-level exchange and training program on Clean Coal Technology and Clean Energy Policy (EWG14 2018S) will be carried out in May 2019, in Ningbo, Zhejiang, China. The main topics will include the development and application of the advanced CCT, China's experience on policy planning, implementation as well as its effects, and information exchange among APEC economies.

- **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.

Expected outcomes and deliverables for 2019 include:

- The "APEC Workshop on Integrated Energy-Water Planning and Policy Formulation" (EWG 13 2018A) in July 2019. The workshop will help participants identify risks posed by the energy-water nexus across sectors as well as formulate adaptive measures to address emerging risks and enhance resiliency.
- The "APEC Energy Resilience Smart Grid Workshop" (EWG 09 2018S) in May-June, 2019. The workshop will highlight smart grid technologies, and share tools, techniques, and best practices from U.S. and other APEC member economy's grid modernization efforts.
- The "APEC Workshop on Quality Electric Power Infrastructure Focusing on Waste to Energy" (EWG13 2018S) in January, 2019. The purpose of this workshop is focus on Waste to Energy in the context of "APEC Guideline for Quality Electric Power infrastructure". The workshop intends to enhance the capacity of the APEC members to understand Quality Waste to Energy power plant and improve 3E+S (Energy Security, Economic Efficiency, Environment + Safety) of Waste to Energy in the APEC region.

- **Cross-cutting Issues**

In 2019, the EWG will expand its collaboration to include the Emergency Preparedness Working Group on energy resilience, the Policy Partnership on Science, Technology and Innovation, Automobile Dialogue, and Transportation Working Group on new energy technology, and the Policy Partnership on Women and the Economy to integrate gender in the energy fora.

Expected outcomes and deliverables for 2019 include:

- The "Enhancing Women's Empowerment in Energy Field: Mapping Energy Policies with Gender Perspective" project workshop (EWG 18 2018A) in Taipei, Chinese Taipei in August 2019. Topics may cover existing energy issues with gender perspective, such as the impact of electricity market liberalization on women, or women's role in energy market.

2. Itemized Work Plans for 2019

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)
Empowering a Distributed Energy Resource Future through Regulatory and Market Reforms (EWG 11 2017A)	The project requested 12-month extension with new completion date of September 2019. The project plan to host two workshops sequentially over a one-week period, and will summarize outcomes of two workshops. The project final report is expected to be finished in September 2019. The report will summarize results from the gap analysis and key outcomes from project workshops, and also identify action plans and next steps for each select economy through a “regulatory road mapping” exercise.	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’ Statement) 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. (2016 AMM Statement)	Sustainable Growth, Human Security	
Peer Review on Efficient Power (PREP) (EWG 12 2017A)	The project requested 12-month extension with new completion date of December 2019. The project is now In process of awarding contract to WorleyParsons (USA), and seeking two volunteer developing APEC economies to be visited by PPEP Review Team.	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. 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). (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. Increase understanding of the relevant clean fossil energy technologies including carbon capture, use, and storage (CCUS), promoting their	Sustainable Growth, Human Security	

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		efficient use, and facilitating access to these technologies by encouraging information exchange. (2015 EMM Statement)		
APEC Low-Carbon Model Town (LCMT) Project Dissemination Phase 2 (EWG 1 2018A)	In the LCMT Project Dissemination Phase 2, Feasibility Studies for specific assessment items for the selected LCT-I volunteer towns will be conducted after the 2nd LCMT Symposium. A consultant for conducting Feasibility Studies will be selected by an international open tender in October-November 2018. The expected period for the Feasibility Studies is approximately one year from December 2018 to December 2019. One report for the results of Feasibility Studies for the selected LCT-I volunteer towns will be published as the output. The 3rd LCMT Symposium is planned to be held in San Borja, Peru, which was the case town for the Feasibility Study and Policy Review in the LCMT Project Phase 4, in September 2019 (TBC). The nomination for three LCT-I volunteer towns and review experts will start in the first half of 2019.	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' Statement) 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	ISO, UNEP, COP21, IDB, WB
APEC Peer Review on Energy Efficiency (PREE) Phase 8 (EWG 2 2018A)	The 12 th PREE is planned to be conducted in Russia in 2019. The 4 th EEP Workshop will be held alongside the EGEE&C 53 meeting in the first half of 2019. The topics of the EEP Workshop will be selected in consultation with EGEE&C delegates during September and October of 2018. The EEP Workshop summary report is expected to be finished in July 2019.	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	TPTWG, HRDWG, IEA, Asian Development Bank (ADB), and World Bank (WB)
Aligning Conformity Assessment Efforts for Energy Efficiency Regulations of Motors in the APEC and ASEAN Regions (EWG 5 2018A)	The project is divided into 3 phases: Update the 2008 list of standards and conformity assessment policies for motors in APEC and ASEAN (Phase 1); Develop a roadmap for harmonization within APEC and ASEAN based on outcomes and lessons learned via the ASEAN SHINE (Phase 2); and Promote recommendations of harmonization of standards and conformity assessment policies for motors among the economies (Phase 3). One workshop will be executed in September 2019 to share information and ideas on areas for harmonizing efficiency testing methods and use of common data sources as a means for	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	Sustainable Growth, Human Security	SCSC, ASEAN

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	<p>aligning energy efficiency regulations with the objective of promoting trade, and longer-term energy efficiency gains.</p> <p>The final project report will be compiled in November 2019.</p>	<p>economy thus minimizing costs of policy implementation. (2015 EMM Declaration)</p>		
<p>APEC Workshop on Energy and Economic Prosperity (EWG 6 2018A)</p>	<p>A 2-day Workshop is planned to be held in Da Nang, Viet Nam in March 2019.</p> <p>A summary report with outcomes and recommendations from the Workshop will be presented to EWG.</p>	<p>We view environmental sustainability as equally important with economic prosperity, and recognize the important role of the market in providing efficient, cost-effective energy technology solutions and energy resources. 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. (2015 EMM Declaration)</p>	<p>Sustainable Growth, Human Security</p>	<p>UNEP, World Bank, ADB, ADBI, OECD</p>
<p>Orphan oil and gas wells and facilities in Mexico, a chance to identify, innovate and resolve (EWG 7 2018A)</p>	<p>The project will conduct two targeted methane and aeromagnetic aerial surveys to correlate the well database with casings detected.</p> <p>One final report will be finished in 2019 summarizing best practices and results from satellite imaging analysis, the aerial methane imaging survey, from the aeromagnetic study and the drone survey.</p> <p>One webinar will be organized to present results to the APEC economies in 2019.</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. (2015 EMM Declaration)</p>	<p>Sustainable Growth, Human Security</p>	
<p>APEC Peer Review on Energy Efficiency (PREE) Phase 9 (Follow-Up PREE) (EWG 8 2018A)</p>	<p>The 5th Follow-up PREE in Peru is expected to be conducted in March 2019.</p> <p>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 July 2019.</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</p>	<p>Sustainable Growth, Human Security</p>	

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APEC Best Practice Guidelines for Establishing and Enhancing Energy Efficiency Incentive (EEI) Schemes (EWG 9 2018A)	<p>A "how to" handbook on how to establish EEI schemes based on learnings gained from existing successful EEI schemes will be finished in September to October 2019.</p> <p>There will be two workshops held as part of this project. One workshop will be held in conjunction with an APEC Expert Group on Energy Efficiency and Conservation meeting in June to August 2019. The 2nd workshop and trade event in partnership with Australia's Energy Efficiency Council's Energy Efficiency Trade Expo will be held in October 2019.</p> <p>Project outputs and other relevant resources relevant to establishing and running EEO schemes collated for inclusion on an appropriate APEC EWG project webpage will be done by November 2019.</p>	<p>policy implementation. (2015 EMM Declaration)</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. (2015 EMM Declaration)</p>	Sustainable Growth, Human Security	IEA
Low Emissions Development Strategies: Supporting the Transition to Energy Efficient, Electric Transport Systems (EWG 10 2018A)	<p>In January to March 2019, the project will select at least 3 APEC economies to conduct bilateral on-line meeting/conversations to start developing the member profiles and gathering data.</p> <p>In-person workshop for technical training of the "champion" economies, with peer advisors and regional and international experts will be held in June to August 2019.</p> <p>A written roadmap in collaboration with the select 3 APEC economies will be developed in September to December 2019.</p> <p>An on-line launch event to disseminate the roadmap will be held in December 2019.</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. (2015 EMM Declaration)</p>	Sustainable Growth, Human Security	Clean Air Asia, IADB, UNEP, USAID, GIZ and Automotive Dialogue
APEC Study on Small-Scale Shallow Draft Liquefied Natural Gas (LNG) Carriers and Floating Storage Regasification Units (EWG 11 2018A)	<p>A long-term strategic analysis with an understanding of APEC economies' natural gas market fundamentals will be conducted in March to July 2019.</p> <p>A full LNG value chain analysis with the primary focus being the optimal use of small-scale shallow draft LNG carriers and FSRUs in the APEC region will be conducted in March to July 2019.</p> <p>The draft report will be completed in August 2019.</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. (2015 EMM Declaration)</p>	Sustainable Growth, Human Security	
APEC Workshop on Public-Private Partnership	An "APEC Workshop on Public Private Partnership for Solar Energy Development" is planned to be held in Viet Nam in July	We encourage Member Economies to adopt Public-Private Partnership to	Sustainable Growth, Human Security	UNEP, World Bank, ADBI, OECD

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for Solar Energy Development (EWG 12 2018A)	2019. The workshop summary report is expected to be finished by September 2019.	strengthen energy infrastructure development and connectivity, such as oil and natural gas pipelines, grid transmission and interconnection highways, LNG facilities, smart grids and distributed energy systems to boost trade and investment among Member Economies. (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' Statement)		
APEC Workshop on Integrated Energy- Water Planning and Policy Formulation (EWG 13 2018A)	A 3-day workshop is planned to be held in July 2019. Upon conclusion of the Workshop, a draft report will be developed by September 2019 to the EWG, and ERTF, and identify other appropriate outlets for further dissemination.	Cognizant that the energy-water nexus is an important aspect of our collective energy resiliency. 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. (2015 EMM Declaration)	Sustainable Growth, Human Security	
Coordinating Standards for Cool Roof Testing and Performance (EWG 14 2018A)	The project will undertake desk research by September 2019 to identify which APEC economies have standards currently and develop a survey to acquire those existing cool surface test standards, policies and practices. The final report and summary matrix will be developed by October 2019.	We encourage Member Economies to develop minimum energy performance standards in building codes and energy appliances, industrial equipment and smart metering devices. (2015 EMM Declaration)	Sustainable Growth, Human Security	
Technological Challenges and Opportunities to Supply Flexibility to Electric Systems (EWG 15 2018A)	A 2-day seminar will be held in the second semester of 2019. A summary report will be compiled with presentations, best practices and related recommendations identified and key findings for further dissemination in the fourth quarter of 2019.	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' Statement) We reaffirm our commitment towards Leaders' aspirational goals to reduce aggregate energy intensity by 45 percent by 2035, to double the share	Sustainable Growth, Human Security	

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		of renewable energy in the APEC energy mix by 2030, and to achieve sustainable and resilient energy development within the Asia-Pacific. (2016 AMM Statement)		
Distributed Energy Resources Regulation and Rate Design (EWG 16 2018A)	A 3-day activity will be held in September or October 2019. After the Seminar, a compilation of the main conclusion will be executed. The Summary Document with technical materials and highlights of the central discussions and results will be finished by December 2019.	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' Statement) 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. (2016 AMM Statement)	Sustainable Growth, Human Security	
Lessons Learned from Promotion Mechanisms Focused on Boosting Energy Solutions in Remote Areas (EWG 17 2018A)	One workshop will be held in Chile in June 2019. First draft of the summary report will be prepared, circulated for comments, finalized and submitted in July to August 2019. The final version of summary report will be finished by September 2019.	We recognize that sustainable development, energy access, energy resilience, and energy security are critical to the shared prosperity and future of the region. (2016 AMM Statement) We affirm the importance of energy resiliency in promoting energy security and sustainable development and providing access to the people. We instruct the EWG to create a Task Force on Energy Resiliency to follow up and implement the Ministers' Instructions. (2015 EMM Declaration)	Sustainable Growth, Human Security	
Enhancing Women's Empowerment in Energy Field: Mapping Energy Policies with Gender Perspective (EWG 18 2018A)	A 2-day workshop is planned to be held in August 2019(TBD). Experts from APEC and relevant international organizations will be invited to share diverse expertise on interconnection between energy and gender issue from global and regional level, in terms of policy making and market development. The project will conduct a study on how to enhance women's empowerment from energy policy planning by literature review of international organizations on gender related issue, and the result	In keeping with APEC's goal of inclusive growth, the development of community-based clean energy strategies paves the way towards income generating activities that benefit the marginalized and indigenous communities as well as expand participation of women. We envisage the APEC region to be the	Sustainable Growth, Human Security (ECOTECH Priorities) Women, SMEs and Inclusive Growth (Host Year Priorities)	PPWE, ABAC, SMEWG International Energy Agency(IEA), International Renewable Energy Agency (IRENA), Global Women's Network for the Energy Transition (GWNENET), Global Gender and Climate Alliance (GGCA).

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	<p>will be reflected in the workshop agenda design and policy recommendation paper.</p> <p>The policy recommendation paper will be finalized in October 2019.</p> <p>The project report will be finished in December 2019 and request for PPWE and EWG's review and feedback.</p>	<p>home of well-integrated power systems as well as a global model for satellite community-based micro independent grids that promote sustainable and inclusive growth as well as offer equal and gender-fair employment opportunities.</p> <p>(2015 EMM Declaration) We recognize women's vital contribution to economic and social development and we commit to strengthen our efforts to support the mainstreaming of gender equality and women's empowerment across APEC's work, to ensure that women enjoy equal access to quality education and economic resources. We welcome efforts to support women's entrepreneurship, grow women-led SMEs, enhance women's digital literacy, promote women's career development, strengthen women and girls' access to science, technology, engineering and mathematics (STEM) education and careers and address health-related barriers to women's economic participation. We believe that the development of ICT plays a vitally important role in human development and we reaffirm our willingness to achieve next-generation broadband by 2020.</p> <p>(2016 Leaders' Statement)</p>		<p>This project will benefit women by fully exploring their roles and potentials of development in the fast-growing energy sector.</p>
<p>APEC Regional Study on Renewable Energy Financing and Investment for Grid-Connected Wind and Solar (EWG 04 2018S)</p>	<p>This project will conduct a regional study on renewable energy financing and investment, focusing on the investment climate for renewable energy projects and best practices for attracting investment and addressing current challenges.</p> <p>The study approach will include an inception report to guide the outline of the study, an initial gap analysis, two publication-based assessments based on the gap analysis, and a survey and consultations with key experts and stakeholders in the region.</p> <p>The project report will be finished by November 2019.</p>	<p>In order to meet the needs of increasing investment in green economy, we instruct the EWG to implement APEC Green Energy Finance Initiative in support of the financial sustainability of renewable energy and energy efficiency development in the region. We also instruct the EWG to strengthen dialogues and cooperation with related</p>	<p>Sustainable Growth, Human Security</p>	

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		international organizations and multilateral financial institutions on capacity building in financing green energy. (2015 EMM Declaration)		
APEC Energy Smart Communities Initiative (ESCI) Best Practices Awards Program (EWG 08 2018S)	Following the success of 2013, 2015 and 2017 ESCI Best Practices Awards Program, the ESCI-KS P management team, with the support from APEC member economies, will host the 2019 ESCI Best Practices Awards Program. The project is in the progress of calling for cases and jury members. The result will be announced on July 2019. And the award ceremony and case presentation is expected to be held in October 2019 on EWG58 meeting.	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' Statement) We also encourage Member Economies to continuously share best practices of energy-smart related projects under the APEC Energy Smart Community Initiative Knowledge Sharing Platform (ESCI-KSP). (2015 EMM Declaration)	Sustainable Growth, Human Security	TPTWG
APEC Energy Resilience Smart Grid Workshop (EWG 09 2018S)	The workshop will highlight smart grid technologies, and share tools, techniques, and best practices from U.S. and other APEC member economy's grid modernization efforts. The workshop is scheduled to be held in May-June, 2019. The summary of the workshop will be presented at the Energy Resiliency Task Force (ERTF) meeting.	We recognize that sustainable development, energy access, energy resilience, and energy security are critical to the shared prosperity and future of the region. (2016 Leaders' Statement)	Sustainable Growth, Human Security	
Research on Integrated Multi-Energy System to Improve Energy Efficiency and Enhance Technological Progress of Renewable Energy in APEC Region (EWG10 2018S)	The project will work on a report to explore the opportunities and challenges for promoting the application of integrated multi- energy system in APEC region, status of related technologies and excellent cases will be summarized and analyzed. The data investigation and analysis and draft research report will be conducted by February 2019. The final research report will be finished in April to June 2019.	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) We reaffirm our aspirational goals to reduce aggregate energy intensity by	Sustainable Growth, Human Security	IEA, IRENA

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		45 percent by 2035 and double renewable energy in the regional energy mix by 2030. (2016 Leaders' Statement)		
Research on Effective Strategies for Overcoming the APEC Sustainable Urbanization Gaps (EWG11 2018S)	A draft report has been presented at a round-table of the Fourth Asia-Pacific Energy Sustainable Development Forum organized by APSEC on 20 September 2018. The final project report will be finished in 2019.	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' Statement) 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	
Research on Forms of Low-Carbon Energy System and Best Practices for APEC Sustainable Cities (EWG12 2018S)	Low-carbon Energy System is a proactive option, which aims at energy efficiency, clean utilization and large-scale renewable energy consumption as the background. Research on its forms will help cities improve the energy efficiency of cities, reduce the cost of energy supply and solve the problem of using renewable energy. The project plan to host two seminars, one is in March to May 2019 focusing on the research on the information and cases, another one is in June to September 2019 focusing on the research results and expert opinions. The final research report on Low-carbon Energy System Forms and Best Practices will be finished in November 2019.	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. (2015 EMM Declaration)	Sustainable Growth, Human Security	
APEC Workshop on Quality Electric Power Infrastructure Focusing on Waste to Energy (EWG13 2018S)	The workshop is scheduled to be held in January, 2019. The summary of the workshop will be presented at the Expert Group on New and Renewable Energy Technologies (EGNRET) meetings.	We encourage Member Economies to adopt Public-Private Partnership to strengthen energy infrastructure development and connectivity, such as oil and natural gas pipelines, grid transmission and interconnection highways, LNG facilities, smart grids and distributed energy systems to boost trade and investment among Member Economies.	Sustainable Growth, Human Security	

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Exchange and Training on Clean Coal Technology and Clean Energy Policy (EWG14 2018S)	<p>One-week high-level exchange and training program will be carried out in May 2019, in Ningbo, Zhejiang, China, by CCT Center (Clean Coal Technology Transfer Program Joint Operation Center), APSEC. Two participants from each economy, such as senior government officials, are expected to attend, and the total number will be forty.</p> <p>The outcome will be summed up by November 2019.</p>	<p>(2015 EMM Declaration)</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)</p> <p>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/NARUC Workshop on Supporting Renewable Energy Integration and Energy Efficiency through Effective Regulation (EWG15 2018S)	<p>The one-day workshop is scheduled to be held March 19, 2019 ahead of the joint EGNRET/EGEE&C meeting in Hong Kong, China.</p> <p>NARUC will provide a workshop summary to APEC following the event, and will liaise with the U.S. EWG representative to explore other potential opportunities for collaboration.</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</p>	Sustainable Growth, Human Security	

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		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' Statement)		
Best Coal Power and Cogeneration Plant Case Studies (EWG 1 2019S)	Conduct case studies on existing, under-construction, and planned high-efficiency, low-emission (HELE) coal-fired power generating units worldwide. The case studies will investigate plant design, coal types, and emissions control technologies and identify management best practices that assure optimum and reliable performance. The draft report will be completed for review in late 2019, with final project report ready for publication by APEC by the end of 2019.	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. 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). (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. 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. (2015 EMM Statement)	Sustainable Growth, Human Security	
APEC Regional Workshop on Coal Plant Efficiency (EWG 2 2019S)	The workshop will be convened in late 2019 with final project report ready for publication by APEC by the end of 2019 or early 2020.	We encourage member economies, where there are difficulties to quickly deploying alternatives to coal, to enhance cooperation in developing	Sustainable Growth, Human Security	

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		<p>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)</p> <p>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>		
Oil and Gas Security Initiative: 2019 (EWG 06 2019S)	<p>The 4th Oil & Gas Security Exercise in Chile is planned in March 2019.</p> <p>The 5th Oil & Gas Security Network Forum is planned to be held in Sendai City, Japan in April.</p> <p>The OGS newsletter is released bi-monthly.</p> <p>The OGS Studies on “Emerging energy security risks in changing global energy landscape”, and “Small scale LNG in the Asia Pacific region” will be endorsed and published.</p>	<p>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</p> <p>(2015 EMM Declaration)</p>	Sustainable Growth, Human Security	IEA, IADB, OLADE, ERIA