

## **Energy Working Group's Proposed Workplan for 2018**

### **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, instituting reforms to rationalize or phase out inefficient fossil fuel subsidies, 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 2018, under the overarching theme of "*Harnessing Inclusive Opportunities, Embracing the Digital Future*," these priorities are:

1. Improving Connectivity, Deepening Regional Economic Integration
2. Promoting Inclusive and Sustainable Growth
3. Strengthening Inclusive Growth through Structural Reform

EWG will examine its activities and ensure that those which are contributing to APEC action in these three 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 2018 priorities.

The themes of energy security, clean energy development and deployment, energy efficiency, 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. Energy access will become an EWG priority area to be further explored. 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 (APEREC) has been preparing APEC Energy Demand and Supply Outlook every 2-3 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 2019. The compilation process of this Outlook during 2018 will be also valuable by itself for each APEC member economy in revisiting its energy situation and policies.

### **1. Expected Outcomes/Deliverables for 2018**

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, instituting reforms to rationalize or phase 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. These activities are reflected in the EWG Strategic Plan completed in 2014 with specific planned deliverables and other recommendations by the APEC Leaders and Ministers. For a full list of all APEC itemized work plans currently under EWG as of January 2018 please see Annex A. Further projects are anticipated to be added to this list in 2018, 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 APEC Energy Statistics publication 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.

- **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. This new target supports the UN's Sustainable Energy for All (SE4ALL) Initiative which seeks to double renewables in the global energy mix. The EWG is undertaking and developing projects and activities to promote innovation, reduce costs and improve sustainability of renewable energy to support this goal for the APEC region as a whole including through the development of a roadmap by Expert Group on New and Renewable Energy (EGNRET). In 2018, the EWG through EGNRET will implement three new projects approved in 2017. Specific activities include making the case for clean energy investments with life-cycle impact

assessments; economic and life cycle analysis of solar photovoltaic systems in APEC Region; study on the cost-effective renewable energy-supply solutions based on innovative solar technologies to promote green buildings; research on energy storage technologies to build sustainable energy systems; off grid electrification option for remote regions; promoting innovative green financing mechanisms for sustainable urbanization and quality infrastructure development; guidelines toward high biodiesel blend diesel (eg b20) specification; heating applications of bio-pellet made from Ecological-hazard Plant in Small and Medium Enterprises; APEC Low Carbon Model Town solar photovoltaic agricultural development mode study; developing Solar-Powered Emergency Shelter Solutions (SPESS) as an energy-resilience tool for natural disaster relief; and filling the gap to reach the goal of doubling renewable energy. New projects developed in 2018 include empowering a distributed energy resource future through regulatory and market Reforms, and integrated energy system planning for equitable access to sustainable energy for remote communities in the northern regions of North Sulawesi. 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.

- **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. In 2018, the EWG will undertake projects in such areas as enhancing regional conformity assessment to ensure successful ISO 50001 standard outcomes; gap assessment on APEC energy efficiency and conservation work toward energy intensity reduction goal; reducing losses in power distribution through improved efficiency of distribution transformers; Peer Reviews on Energy Efficiency (PREE) executed by APERC; developing APEC nearly (net) zero energy building roadmap study responding to COP21; incubator for enhancing commercial buildings energy performance; an workshop of developing qualified product lists for high-quality and high-efficiency commercial, industrial, and outdoor lighting products and control systems in the APEC Region; an workshop on promoting the development of an evaluation community; refrigerator/freezer energy efficiency improvement in APEC region and a workshop on infrastructure and workforce development related to electric vehicles. 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. Members will continue to work with the Collaborative Labelling and

Appliance Standards Program (CLASP) to update the APEC Energy Standards Information System (ESIS).

- **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. New activities include peer reviews of coal-fired power plants and best practices for clean coal technologies. EGCFE will also deal with security issues including OGS.

Since 2009, APEC Leaders have annually committed to rationalize and phase out inefficient fossil-fuel subsidies that encourage wasteful consumption while providing essential energy services. In 2013, APEC economies approved the guidelines for voluntary peer reviews on inefficient fossil fuel subsidy reform (IFFSR), and the first peer review took place in 2014 in Peru. Correspondingly, New Zealand and the Philippines undertook reviews in 2015. Chinese Taipei undertook reviews in 2016. Viet Nam undertook review in 2017. Also, a Workshop on Effective Pricing Mechanisms and Mitigation Strategies was held to expedite capacity building. These peer reviews and workshops facilitate constructive dialogues within and among APEC economies on inefficient fossil fuel subsidy reform and provide a means for economies to learn from one another and share best practices. The EWG will continue to conduct capacity building and sharing the results of forthcoming peer reviews in 2018.

- **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 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 as the project executant held the 1st

APEC LCMT Symposium in Jakarta, Indonesia in September 2017. The 2nd Symposium will be held in Da Nang, Viet Nam in 2018.

- **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 has 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 has been 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 2018, APSEC will host an APEC workshop on Sustainable Cities, highlighting low-carbon finance and green finance, and publish annual report on CNSC and CCT. APSEC will also work with Energy Smart Community Initiative Knowledge Sharing Platform (ESCI-KSP) to hold training courses on ESCI Best Practices Awards and provide consultation service.

- **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. The corresponding Implementation Plan provides priority work streams for carrying out the ERTF objective and these are the work streams on Grid Resilience, Strengthening Infrastructure and Energy-Water Nexus. The Task Force, co-chaired by the United States and the Philippines, had its inaugural meeting in December 2015 at the margins of EWG 50 in Honolulu, Hawaii. In 2017, the Task Force decided four workstreams would be pursued: Grid Resilience; Strengthening Infrastructure; Energy Water-Nexus; Energy Access. In 2018, the EWG will pursue activities under the various work streams in collaboration with other relevant working groups such as the Emergency Preparedness Working Group. Planned activities under ERTF in 2018 include: a Workshop on Promoting Resilience in the Energy Sector to focus on integrated resource and resilience planning and Integrated Energy System Planning for Equitable Access to Sustainable Energy for Remote Communities in the Northern Regions of North Sulawesi. Proposed activities for 2018 (if approved) include a Workshop on Integrated Energy-Water Planning and Policy Formulation and a Cybersecurity Capability Maturity Model (C2M2) Webinar.

- **Energy Access**

During EMM12, energy ministers acknowledged that a priority goal in developing a resilient APEC community will be to provide energy access to our people, including in remote communities. Clean energy technologies and traditional energy sources, including cleaner fossil fuels are important in addressing energy access challenges. The EWG has taken the first discussion on energy access in EWG54 in 2017 from policy and technological point of view, and will formulate a policy paper on energy access in 2018.

### **Anticipated Activities with outside organisations**

Under the APEC Energy Ministers' directions, EWG members will continue to pursue projects, studies and initiatives with relevant multilateral fora and international organizations to learn from and share expertise and best practices.

#### **Business Sector**

The EWG will continue to collaborate with the business sector on energy security and sustainable energy development in all appropriate meetings and projects. Many private sector participants already engage with, and are key interlocutors for, EWG projects.

ICA has 3 year guest status in EWG. ICA participates actively in APEC energy efficiency and renewable energy discussions, and has co-financed several EWG projects with APEC-SHINE Facility. WEC similarly has 3 year guest status and provides valuable perspectives, including from its private sector members, in EWG meetings.

The EWG will continue to work for the facilitation of a more direct dialogue with the industry on identifying barriers to energy-related trade and investment, improvement of economies' capacity to remove such barriers, promotion of best practices on clean energy development and investment, and an assurance of open and transparent markets to facilitate trade and investment for the promotion of energy security and sustainable growth in the region.

ABAC will as usual be invited to participate in EWG's plenary meetings, and projects, and the EWG Lead Shepherd will explore possibilities for enhancing EWG-ABAC collaboration with the Chair of ABAC.

#### **Other Organisations, including other International Organisations**

The EWG members are cooperating with international organizations in a number of areas to share knowledge and best practices. Such activity includes the recent engagement to expand formal collaboration with IEA to address energy security challenges, energy efficiency, and a number of additional related areas. Other efforts include projects on clean and efficient energy development and deployment through expanded cooperation with the Association for South East Asian Nations (ASEAN), the G20, the East Asia Summit (EAS), IRENA, WEC, the International Standards

Organization (ISO), the Clean Energy Ministerial (CEM), , Collaborative Labelling and Appliance Standards Program (CLASP) and IPEEC.

### **Cross cutting issues and coordination**

APEC Energy Ministers instructed the EWG to continue strong engagement and cross-fora collaboration with other relevant APEC fora to facilitate energy trade and investment and enhance efforts in other energy-related issues (Beijing 2014, Cebu 2015). To this end, the EWG will continue collaboration with the CTI, SCSC, the Automotive Dialogue, the Transportation Working Group (TPTWG) on such activities as electric vehicle interoperability, coordination on standards and conformance, and identifying barriers to energy-related trade and investment. Also, EWG has started communication with Policy Partnership on Food Security (PPFS) and Policy Partnership on Science, Technology and Innovation on climate and innovation (PPSTI) in 2017 and will keep exploring potential cooperation opportunities with them in 2018.

In 2018, the EWG will expand its collaboration to include the Senior Officials' Urbanisation Friends of the Chair group related to low carbon cities, Emergency Preparedness Working Group on energy resilience, Small and Medium Enterprise Working Group on green energy finance; the Counter-Terrorism Working Group on cybersecurity, the Policy Partnership on Science, Technology and Innovation on new energy technology, and the Policy Partnership on Women and the Economy to integrate gender in the energy fora.

There are many APEC-funded projects underway which have been funded through the ASF Energy Efficiency and Low Carbon Measures Sub-fund. Apart from those led by EWG members (which form the majority), many such energy projects have been led by other APEC fora, including HRDWG, SMEWG, SCSC, TPTWG and PPSTI. Through strengthened cross-fora collaboration from the project design stage onwards, the contribution of such projects to the achievement of APEC Leaders' agreed energy objectives could be enhanced. The EWG Lead Shepherd will work to strengthen such collaboration during 2018, including through participation in the SCE-COW.

Cross-fora collaboration will be particularly important for ensuring that discussions and action on APEC's 3 priority issues for 2018, fully benefit from the potential relevant contributions of EWG. EWG project activities (both completed and underway) may be particularly relevant for priorities 2 and 3 above ie 'Promoting Inclusive and Sustainable Growth' and 'Strengthening Inclusive Growth through Structural Reform'. Towards this end, special focus will be placed in enhancing EWG's cross-fora collaboration in 2018 with the leaders of projects and initiatives under those two priorities – including PPFS, Tourism Working Group (TWG), Small and Medium Enterprises Working Group (SMEWG) and others as appropriate. Again the SCE-COW provides a useful and unique annual opportunity for discussions between APEC Fora Chairs to support such collaboration.

### **Capacity building activities planned for 2018**

The EWG's mission includes building the capacity of APEC economies to strengthen domestic and regional energy security and lower the carbon intensity of energy supply and use across the region, facilitated by information and data exchanges, joint research and development, and open trade and investment. Through workshops, seminars, exchanging views, developing best practice guides and manuals, demonstrations, peer reviews, research, data collection and analysis, and dissemination of information, the EWG works to develop the human resource base and energy consumers within APEC Member Economies to improve their analytical, technical, operational, and policy capacity in the area of renewable energy, energy efficiency and overall energy literacy, including full engagement of women in green development, as well as capacity building to train economies to assess their future energy outlook with the use of proper models to serve their policy makers.

Specific activities will include capacity building in the area of energy efficiency such as capacity building for equipment installers, policymakers and entrepreneurs; efforts to harmonize energy efficiency standards; implementation of best energy efficient practices; and an improved energy efficiency standards compliance regime. Capacity building activities for renewable energy development includes capacity building for equipment installers and auditors, helping policymakers identify and set targets as well as renewable energy support policies to reach their goals, improving data gathering such as resource mapping and other areas to share lessons learned and develop best practices. The EWG will also continue activities to improve the capacity of APEC economies to respond to emergencies such as disruptions in oil and gas supply; improve collection of energy data; development of low carbon policies and practices through peer reviews and sharing of best practices; capacity building for fossil fuel subsidy reform; capacity building for green energy finance; and working with the business sector to help build economies' capacity to identify and remove barriers to energy-related trade and investment.

### **Expected Outcomes/Deliverables for 2018**

The EWG maintains one of the most extensive portfolios of projects in APEC. In 2018, EWG members will complete work on a wide variety of projects involving but not limited to:

- a. Energy Resiliency
- b. Oil and Gas Security Initiative (OGSI)
- c. Peer Reviews of Inefficient Fossil Fuel Subsidies
- d. Energy Smart Communities Initiative (ESCI) and Knowledge Sharing Platform (KSP)
- e. Clean Coal Technologies
- f. Green Energy Finance
- g. Peer Review on Low Carbon Energy Policies (PRLCE)
- h. Grid Integration of Renewable Energy
- i. Improved Efficiency and Quality of Electric Grids
- j. Low Carbon Model Towns (LCMT)
- k. Peer Reviews on Energy Efficiency (PREE)



The EWG will continue to share results and best practices from fossil fuel subsidy reform efforts in 2018.

EWG members will continue implementing the Energy Smart Communities Initiative (ESCI) by implementing projects on smart transport, smart buildings, smart grids and smart jobs and education, and industry as well as conduct the PREE in volunteer economies to help support the aspirational goal of reducing energy intensity by 45 percent by 2035. This work includes efforts continue to conduct dissemination phase of Low-Carbon Model Town by the EWG's LCMT Task Force and to accelerate knowledge sharing under the ESCI Knowledge-Sharing Platform.

The EWG will continue to undertake a series of projects on renewable energy and related infrastructure to support progress toward the Leaders' aspirational goal to double the share of renewables in the APEC energy mix, including in power generation, by 2030. The EWG's EGNRET, with support from APERC, IRENA and other relevant organizations, will continue work on the development and implementation of a roadmap to outline policy best practices and actions needed for APEC to achieve its renewable goal.

The EWG will conduct workstream on multiple front for the Energy Resiliency Task Force created in response to Energy Ministers' decision at the 12<sup>th</sup> Ministerial in Cebu, the Philippines in October 2015.

The EWG will continue to collect energy data and policies from all the APEC Member Economies, publishing the information through EGEDA and APERC. The EWG through EGEDA will continue to submit relevant data on oil and gas to the international JODI database and provide capacity training on energy statistics.

EWG oil and gas activities will come under the purview of the EGCFE with revitalized efforts to address both the clean coal and oil and gas work streams of that group.

The EWG Lead Shepherd will work with the APEC Secretariat (particularly the Communications and Public Affairs Unit), EWG members and Project Overseers to ensure appropriate public profile of EWG's activities through the year, utilising the APEC Secretariat's external communications capabilities. Possible EWG related media activities around the dates of EWG55 (Hong Kong China, May) and EWG56 (Peru, TBD) will be explored to highlight the achievements and deliverables from EWG projects and other activities (including the ESCI awards).

For a full list of all APEC itemized work plans currently underway in the EWG as of January 2018, please see Item 2. below (Itemized Work Plans for 2018).

## 2. Itemized Work Plans for 2018

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)
Enhancing Regional Conformity Assessment to Ensure Successful ISO 50001 Standard Outcomes <b>(EWG 04 2015A)</b>	The primary objectives of the project are to build regional capacity, improve conformity assessment and promote successful implementation of the ISO 50001 energy management standard. The methodology envisions: completion of three workshops, multiple webinars and publication of the workshop materials, including regional input to ISO/TC301, and a final report. The workshop materials, regional input and summaries of the outcomes and conclusions of both workshops and webinars will be documented in the final report, as originally envisioned, and circulated to the EWG for review/approval and published online.	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. <b>(2015 EMM Declaration)</b> 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. <b>(2016 Leaders' Statement)</b>	Sustainable Growth, Human Security	The project was undertaken in partnership with the APEC CTI SCSC and a Clean Energy Ministerial project team. ICA stated support for the proposal and offered to be a partner in the project delivery. The outputs from the workshops and webinars will lead to the development of regional input to the March 2018 Working Group 1 meeting of ISO/TC 301, and additional input on implementation and auditing issues will also be provided as WG1 begins the next revisions of ISO 50004 and ISO50003.
APEC Low-Carbon Model Town (LCMT) Project, Phase 7 <b>(EWG 02 2016A)</b>	A feasible study in Krasnoyarsk City, Russia has been conducted and the progress was reported at the LCMT Task Force Meeting held in conjunction with the EWG 53 Meeting in Singapore in April 2017. The policy review in Krasnoyarsk City was conducted on 5-7 December 2017. The final policy review report is expected to be finalized the in May 2018.	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. <b>(2015 Leaders' Statement)</b> 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. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	Since LCMT Phase 3 and 4, OECD experts on the Programme were invited to join in the Study Group A or B in order to share their knowledge and experience in environmentally friendly urban development. In addition, as for the LCT-I System, active discussion was carried out with experts of ISO on possible contribution by the LCT-I System to international standardisation of city indicators.

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Study on the Cost-Effective Renewable Energy-Supply Solutions based on Innovative Solar Technologies to Promote Green Buildings in APEC Region <b>(EWG 03 2016A)</b>	The literature survey , research report, technical solution package, promotion plan, website and final project report on renewable energy supply solutions for green buildings in APEC Region will be finished by July 2018.	We commend the initiative of creating a Task Force on Energy Resiliency. <b>(2015 Leaders' Statement)</b> We recognize that sustainable development, energy access, energy resilience, and energy security are critical to the shared prosperity and future of the region. <b>(2016 AMM Statement)</b> 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. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	This project could engage world-leading solar research groups (e.g. NREL of US, ITRI of Chinese Taipei, ANU of Australia etc.) This project will keep in contact with the chairpersons of relevant APEC fora, such as EGNRET & EGEEC The project will consult with international organizations such as IEA. The cross fora collaboration is definitely expected, e.g. between EGNRET and EGEEC, LCMT TF, ESCI & Energy Resilience TF.
Reducing Losses in Power Distribution through Improved Efficiency of Distribution Transformers <b>(EWG 05 2016A)</b>	The final consultation workshop and the international conference were merged and organized on 18-19 December 2017 in Bangkok, Thailand. The project report is expected to be finalized in March 2018.	We encourage Member Economies to consider the use and applicability of distributed generation and micro grids including greater integration of renewables and expanded energy efficiency, supported by portable and/or mobile power systems as well as energy storage as an adaptive mitigating response to disasters to share information on energy infrastructure technology advancements, technological innovations and best practices. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	The consultant, with the help of ICA, is contacting recipients directly.

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Experience Sharing Workshop on the Five Years Construction of the First Low-Carbon Model Town-Yujiapu CBD <b>(EWG 06 2016A)</b>	The Yujiapu Low Carbon Development Report will be finished in January 2018, and the Yujiapu Experience Sharing dissemination Roadmap Report will be finished in February 2018. The project will host a 2-day workshop in March-May 2018. The project report is expected to be finalized in June 2018.	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. <b>(2015 Leaders' Statement)</b> We reaffirm the importance of low carbon development to achieve our individual and regional economic aspirations and goals. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	Efforts also will be made during the project implementation to communicate with other LCMT projects either in the operation aspect or cooperation in research as well as several other group such as EGNRET, SMEs, LCMT-TF and APSEC.
Off Grid Electrification Option for Remote Regions in APEC Economies <b>(EWG 07 2016A)</b>	The project will summarize report before 31 January on the common benefits of adopting off-grid DC solar technology in these remote regions in APEC economies, and provide recommendations on the technology and economical advantages of adopting DC solar technology. Initial market analysis, technology availability, financial support recommendation will also be provided so to promote the adoption DC solar technology to off grid remote regions in APEC economies. A 1-day workshop will be held in May 2018 to promote this high efficient clean energy technology in remote regions of APEC economies. The project report will be finalized and circulated to EWG members by June 2018.	We reaffirm our readiness to further energy cooperation, including areas such as renewable energy sectors and energy efficiency to create necessary conditions for trade, investment and economic growth, ensuring that all the economies of the region have access to energy. <b>(2016 Leaders' Statement)</b> A priority goal in developing a resilient APEC community will be to provide energy access to our people, including in remote communities. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	The project has closely engaged APEC representatives, technology experts and university professor and students, as well as local government and residents.
Promoting innovative green financing mechanisms for sustainable urbanization and quality infrastructure development in APEC region <b>(EWG 09 2016A)</b>	One international workshop was held in Tianjin, China, on 3-4 November, 2016. 14 organizations and firms was interviewed, and 4 innovated financing mechanisms or products was surveyed. The second workshop will be held on March 2018. The project report will be finalized in April 2018.	We also instruct the EWG to strengthen dialogues and cooperation with related international organizations and multilateral financial institutions on capacity building in financing green energy. 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	Sustainable Growth, Human Security	Female participation as speakers or trainers to the workshops and trainings will be encouraged while outreaching to the related firms and organizations. At least 30% of the speakers will be women. In the meanwhile female industry leaders will be prioritized to be invited as speakers to the workshops and trainings. Among other criteria such as expertise, experiences, contributions

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		Member Economies. <b>(2015 EMM Declaration)</b>		to the industry, female leaders will be prioritized to join and be funded to attend the workshops. At least 30% of the industrial leaders will be women.
Supporting the Development and Implementation of Low-Emission Development Strategies (LEDs) in Transport Sector <b>(EWG 13 2016A)</b>	The project will build capacity and facilitate dialogue between stakeholders on integrating energy efficiency/low-carbon policies and strategies for the transport sector. The project will produce at least one roadmap design instrument for implementation by June 2018. Two workshops were held in Vietnam and Peru in 2017. One workshop will be held in early 2018. At least one training package will be completed for dissemination.	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. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	The project supports the broad environmental objectives of APEC's Transport Working Group (TPTWG). In crossing both the EWG and TPTWG, the project links these Working Groups together and will be coordinated with both groups.
APEC Nearly (Net) Zero Energy Building Roadmap Study responding to COP21 <b>(EWG 15 2016A)</b>	A 3-day workshop of APEC Nearly /Net Zero Energy Building Roadmap responding to COP21 was very well implemented, with 37 experts from 11 economies and also together with 4 NGOs, which are Asia Pacific Energy Research Centre, Paulson Institute, World Green Building Council and Energy Foundation, on 4-6 September 2017. The project report will be finalized by November 2018.	We encourage Member Economies to explore strategies to drive the shift towards green buildings including zero energy buildings. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	The workshop was very well implemented, with 37 experts from 11 economies and also together with 4 NGOs, which are Asia Pacific Energy Research Centre, Paulson Institute, World Green Building Council and Energy Foundation.
Workshop on Energy Statistical and Geographical System <b>(EWG 16 2016A)</b>	A workshop will be held in Mexico City on 9-10 April 2018. It will be divided into ten technical sessions. The agenda also will include a presentation of the Mexican Energy Model, using a strategic solution known as "Decision Theater", this strategic solution engages researchers and leaders in energy to visualize solutions to complex problems in a collaborative, computing and display technologies for data visualization, modeling, and simulation. At the end of the technical sessions, will be a round table in order to define a work plan for the project development. The project will disseminate findings to APEC economies via an outcomes report and analysis of findings and recommendations, as well as develop a roadmap with specific actions that Mexico must perform in order to creating a more robust, reliable and timely Energy Information System in May 2018.	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. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	The workshop will invite experts from international organizations and multilateral development banks that provide technical and analytical support for Energy Information Systems (e.g., IEA, IMF, World Bank, IRENA)
Best Practice Guidance of Effective Coalbed Methane Recovery	A project research report will be completed in January 2018. And a peer review will be conducted in February 2018. A international workshop will be held in May 2018.	In transitioning to a low-carbon economy we will explore the contribution of clean energy	Sustainable Growth, Human Security	International organizations such as International Energy Agency (IEA) and Global

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Technologies for APEC Developing Economies <b>(EWG 17 2016A)</b>	The final report of the Project will be submitted to the EWG for reviewing by March 31, 2018, and modification of the Report will be made according to the reviewing of the EWG before further dissemination.	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. <b>(2015 EMM Declaration)</b>		Methane Initiative (GMI) will be invited to provide expert consulting services. They are also welcome to send representatives to attend the international workshop.
Guidelines toward High Biodiesel Blend Diesel (eg B20) Specification in the APEC Region <b>(EWG 20 2016A)</b>	In this project, there are 2 workshops and 1 final seminar to be organized and a Final Report to be published. The 1st workshop was held in Bangkok, Thailand on 13-14 December 2017. The 2nd workshop is planned to be held in selected APEC economies during February - March 2018. The final seminar will be held, after the publication has been finalized and all APEC economies have approved the publication, in April 2018 in Bangkok, Thailand to disseminate project finding for public interest. The Project report which will present findings and guideline for high biodiesel blend diesel. The draft report will be submitted to EWG by mid-January for technical content approval, and to the APEC Secretariat by early to mid-February for Publication Guidelines approval and will be published by March 2018.	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. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	The project results, such as the report finding with guidelines for high biodiesel blend standard, will be mainly disseminated in digital form by sharing on APEC/PO/consultant websites, as well as social media like Facebook, with only highlights printed on the leaflets for easy circulation in energy-related meeting such as EGNRET, SOME (Senior Officials Meeting on Energy), and AMEM (ASEAN Ministers on Energy Meeting).
Oil and Gas Security Initiative: 2017 <b>(EWG 05 2016S)</b>	The OGS newsletter was released bi-monthly. The 3 <sup>rd</sup> OGS Network forum was held in Irkutsk City, Russia in June, 2017. The OGS Studies on Natural Gas Security in APEC, Impact of Low Oil Price on Energy Security, Superiority of LPG: A Disaster-Resistant Energy Source and Oil and Gas Security Indexation were endorsed and published in March-June 2017. The 3 <sup>rd</sup> OGS Exercise in Peru is planned in November 2017. The project report is expected to be finalized and published in April 2018.	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 <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	IEA, ASEAN Centre for Energy, ASEAN Council on Petroleum, ASEAN Power Utilities /Authorities, Economic Research Institute for ASEAN and East Asia
APEC Low-Carbon Model Town (LCMT) Project Dissemination, Phase 1 <b>(EWG 03 2017A)</b>	In the LCMT Project Dissemination Phase I, Feasibility Studies for a specific area for three LCT-I volunteer towns will be conducted after the 1st LCMT Symposium. A consultant for conducting Feasibility Studies were selected by an international open tender in August 2017. The expected period for the Feasibility Studies is approximately one year from October 2017 to October 2018.	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	Sustainable Growth, Human Security	Since the LCMT Project Phase 3, OECD experts on the Programme have been invited to join in the project activity to share their knowledge and experience in environmentally friendly

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	<p>The Second LCMT Symposium is planned to be held in Samui Island, Thailand, which was the case town for the Feasibility Study and Policy Review in the LCMT Project Phase 2 (TBC), in September 2018. The nomination for three LCT-I volunteer towns and six review experts will start in the first half of 2018.</p>	<p>Energy Smart Communities Initiative. <b>(2015 Leaders' Statement)</b> 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. <b>(2015 EMM Declaration)</b></p>		<p>urban development. In addition, as for the LCT-I System, active discussion has been carried out with experts of ISO on possible contribution by the LCT-I System to international standardisation of city indicators since 2015. The PO will also consider inviting other sustainable urbanization work inside APEC (eg Urbanisation FotC, Cooperative Network of Sustainable Cities, EGEEC Net Zero Energy / Green Buildings) in the LCMT TF meetings and examine the possible synergies with other global sustainable urbanization initiatives (eg UNEP, COP21) outside APEC with the guidance of the APEC Secretariat.</p>
<p>An APEC Energy Vision Post-2020: Our Energy Future to 2050 <b>(EWG 05 2017A)</b></p>	<p>The project plan to hold a workshop in 2018. At the conclusion of the Workshop members would be asked to complete a survey on their impressions, views and learnings from the workshop. The Workshop organisers would report their outcomes to EWG meeting. The project proponents would prepare a report highlighting the key findings, outcomes, issues and pressures that the APEC region may experience out to 2050 in seeking to advance regional energy security and economic growth. On approval of the report, the report would be distributed to EWG members, senior officials, the APEC Secretariat, APEC Energy Ministers, APSEC, ABAC, and APEC Leaders. The report would also be published on the APEC EWG website. The purpose of the report is to seek to improve the conceptual understanding of senior energy officials, ministers and leaders on the nature, quality and potential impact of the range of emerging issues that may adversely, or positively impact the region's energy security and economic growth goals.</p>	<p>We recognize that sustainable development, energy access, energy resilience, and energy security are critical to the shared prosperity and future of the region. <b>(2016 Leaders' Statement)</b></p>	<p>Sustainable Growth, Human Security</p>	<p>The presentations made at the workshop, along with the outcomes report, will be broadly distributed among APEC officials, Senior Officials, APEC Energy Ministers, ABAC and APEC Leaders for their consideration during their 2020 meeting. The materials will be posted electronically on the EWG and APEC website4s and shared with Expert Groups and other relevant APEC fora such as the Transportation Working Group (co-sponsor).</p>

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	Following the dissemination of the report, and as instructed by APEC Leaders, an agenda item will be suggested to be included on each EWG meeting 'Energy in APEC a new vision post 2020', up to 2020.			The project proponents will ensure the evaluation forms to be distributed at the end of the workshop will include information on gender for disaggregating of data for project assessment and will help in the evaluation of specific responses to women and men.
Economic and Life Cycle Analysis of Solar Photovoltaic Systems in APEC Region toward Low-Carbon Society <b>(EWG 06 2017A)</b>	The project will conduct on-site investigated at least three case studies such as grid connected solar PV system for residential home, off-grid connected solar PV system at remote area and solar PV farm for power generation. Two rounds of workshops will be conducted in 2018 for in-depth discussion, sharing ideas, gathering information and developing the report and guideline of economic and LCA of solar PV system in these regions. A guideline including the action plans for improving the solar PV industries toward low carbon society in APEC region will be published by the end of 2018.	We commend the initiative of creating a Task Force on Energy Resiliency. <b>(2015 Leaders' Statement)</b> We recognize that sustainable development, energy access, energy resilience, and energy security are critical to the shared prosperity and future of the region. <b>(2016 AMM Statement)</b> 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. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	The project aims to recognize the competence women in the solar PV industries, financial institutions and government entities including the researchers. It is also the aim of the project to integrate women in solar PV related expertise during the workshop as appropriate. It will target significant women participation in the project activities.
Refrigerator/Freezer Energy Efficiency Improvement in APEC Region: Review of Experience and Best Practices <b>(EWG 07 2017A)</b>	During December 2017-April 2018, the project will investigate for the result of the case studies of refrigerators/freezers design and implementation under energy efficiency regulation, and conduct one investigation report for the result of the case studies of refrigerators/freezers design and implementation under energy efficiency regulation, and one workshop on the result of the case studies of refrigerators/freezers design and implementation under energy efficiency regulation. During May-October 2018, the project will finish the final report "Refrigerator/Freezer Energy Efficiency Improvement in APEC Region: Review of Experience and Best Practices" targeted electric appliance stakeholders among the APEC economies, and hold the second workshop.	We encourage Member Economies to develop minimum energy performance standards in building codes and energy appliances, industrial equipment and smart metering devices. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	Due to the existing limitation of the environment of the engineering society, the project could guarantee female participation of the workshop speakers and attendants to be more than one fifth of total participating number of them. With regard to the female participation rate of the personnel executing this project will be above 45% of total personnel.



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<p>APEC Peer Review on Energy Efficiency (PREE) Phase 7 (Follow-up PREE) <b>(EWG 08 2017A)</b></p>	<p>Under the PREE Phase 7, one follow-up PREE will be conducted in Malaysia in March or April 2018. A Peer Review Report on Energy Efficiency for the host economy, which will identify and make recommendations for overcoming barriers to the effective implementation of the action plan, will be produced. The report will also cover a variety of issues such as institutional framework, goals and strategy, data collection and monitoring, policy measures and education. Once the report is finished, it will be circulated to EWG members for their endorsement. The EEP Workshop will be held alongside the EGEE&amp;C 51 meeting in the first half of 2018 and topics were selected in consultation with EGEE&amp;C delegates during September and October of 2017. The EEP Workshop will be held as a one day event led by APERC with the support of an expert consultant to ensure a high quality end product. APEC and international experts in the selected topic will be invited to present at the workshop.</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. <b>(2015 EMM Declaration)</b></p>	<p>Sustainable Growth, Human Security</p>	<p>Besides EWG, this report can serve as one of the inputs for Transportation Working Group (TPTWG) and Human Resources Development Working Group (HRDWG), which both are under APEC fora. APERC will also consult with international organisations such as the IEA, Asian Development Bank (ADB), and World Bank (WB) where necessary and take full advantage of the interaction with energy experts at EWG meetings and the APERC annual conferences. In the PREE and the EEP Workshop in Phase 6, around 20% of participants were female. This project will continue to seek the involvement of women as a major stakeholder group. For example, ask APEC EWG members to prioritize female experts in nominating candidates of review experts, and also ask the host economy (Malaysia) to prioritize female participants in the peer review process. These female participants may include local female expert speakers.</p>
<p>APEC Workshop on Promoting Resilience in the Energy Sector <b>(EWG 09 2017A)</b></p>	<p>The project will hold a 3-day workshop in June or July, 2018. The workshop will produce a framework for climate-resilient decision making, specifically on integrated resource and resilience planning, that will be applicable to all APEC member economies, taking into account best practices shared from across the region</p>	<p>We commend the initiative of creating a Task Force on Energy Resiliency. <b>(2015 Leaders' Statement)</b> We recognize that sustainable development, energy access, energy</p>	<p>Sustainable Growth, Human Security</p>	<p>This project will incorporate lessons learned past ERTF projects such as the EWG 09 2015A, Workshop on Improving Energy Resiliency</p>

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	<p>and globally. In addition, all workshop presentation and a summary of the workshop discussion will be compiled into a report</p> <p>The project will develop and distribute the final report in September 2018.</p>	<p>resilience, and energy security are critical to the shared prosperity and future of the region.</p> <p><b>(2016 AMM Statement)</b> 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.</p> <p><b>(2015 EMM Declaration)</b></p>		<p>in Off-grid Areas in APEC Member Economies led by the Philippines and the Energy Workforce Resilience Workshop led by Singapore, the APEC/Clean Energy Solutions Center Energy Sector Resilience webinar led by the USA and the APEC Disaster Risk Reduction Framework and Action Plan developed by the Emergency Preparedness Working Group (EPWG). The project will be coordinated with the EPWG and international organizations engaged on resilience planning.</p>
<p>Electromobility: Infrastructure and Workforce Development <b>(EWG 10 2017A)</b></p>	<p>The project will hold a 2-day workshop in Chile in February 2018, possibly implemented on the margins of the Formula-E race. A summary document will be finished by the end of April 2018, with the results of the workshop and a broad vision among the representatives of the economies of APEC regarding the best practices and issues to be addressed in terms of workforce development (such as training) and infrastructure for EVs.</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.</p> <p><b>(2015 EMM Declaration)</b></p>	<p>Sustainable Growth, Human Security</p>	<p>This topic is highly relevant within the Transportation Working Group and Automotive Dialogue, and the findings related to workforce skills will be relevant to the APEC Human Resource Development Working Group.</p> <p>The findings of this project will be shared with the APEC Transportation Working Group, Human Resource Development Working Group and Automotive Dialogue. Given the ongoing development of the EV Roadmap within the Automotive Dialogue, the PO will seek close collaboration with that effort.</p>
<p>Empowering a Distributed Energy Resource Future</p>	<p>The project will hold three workshop in 2018, focusing on Distributed Energy Resource Best Practices, Institutional and</p>	<p>We reaffirm our aspirational goals to reduce aggregate energy intensity by</p>	<p>Sustainable Growth, Human Security</p>	<p>During one of the workshop sessions, gender-sensitive</p>

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through Regulatory and Market Reforms (EWG 11 2017A)	Regulatory Reforms for DER Deployment in APEC Economies, and Women's Electric Power Regulatory Leadership Forum. A project report offering lessons learned and roadmaps for at least 2 APEC developing economies will be finished in October 2018. 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.	45 percent by 2035 and double renewable energy in the regional energy mix by 2030. <b>(2016 Leaders' Statement)</b> 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. <b>(2016 AMM Statement)</b>		indicators will be discussed and the group will develop gender-sensitive indicators to the success of a DER program. In addition, consultants will be asked to identify women who have done outstanding work in advancing policy or regulatory reform in order to showcase their leadership in Women's Electric Power Regulatory Leadership Forum and serve as inspirations for future female leaders.
Peer Review on Efficient Power (PREP) (EWG 12 2017A)	The project will carry out PPEP Review Team visits to two volunteer economies during March-July 2018. The project report will be finished in October 2018.	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). <b>(2014 EMM Statement)</b> 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	The final report will be posted on the APEC, EGCFE, and EWG websites. This enables the results of the project to be shared with other international fora active in this area.

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		efficient use, and facilitating access to these technologies by encouraging information exchange. <b>(2015 EMM Statement)</b>		
Integrated Energy System Planning for Equitable Access to Sustainable Energy for Remote Communities in the APEC Regions using North Sulawesi as a Pilot Project/Test Bed <b>(EWG 13 2017A)</b>	The stakeholder project launch workshop is expected to be held in January or February 2018, to engage with relevant stakeholders to discuss project development as well as roles and responsibilities. The project will develop an open-source techno-economic model to be used and further developed by the local university and other APEC universities. A specific web page will be created in September 2018 as part of Sam Ratulangi University website, will be designed to communicate with all stakeholders and maintained by the Sam Ratulangi university The final outcome workshop is expected to be held in October 2018. Final project report will be finished in November 2018, outlining the results of the detailed modelling work of future scenarios and plans for a sustainable expansion of Bitung's energy system, including the SEZ and electrification of outer communities including islands.	We reaffirm our readiness to further energy cooperation, including areas such as renewable energy sectors and energy efficiency to create necessary conditions for trade, investment and economic growth, ensuring that all the economies of the region have access to energy. 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. <b>(2016 Leaders' Statement)</b> A priority goal in developing a resilient APEC community will be to provide energy access to our people, including in remote communities. <b>(2015 EMM Declaration)</b>	Sustainable Growth, Human Security	The project will encourage female business enterprises and women entrepreneurs, including increased female use of Information and Communications Technology (ICT) and Science, Technology, Engineering and Mathematics (STEM) assets. The project note that besides the Indonesian government departments MEMR, Ministry of Industry, and Coordinating Ministry of Economic Affairs, international agencies like the IEA, USAid, ADB, AfD, GIZ and GGGI are active stakeholders and indicated interest in collaboration.