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Energy Working Group Proposed Workplan for 2017

Purpose: Consideration
Submitted by: EWG Lead Shepherd



**SOM Steering Committee on Economic and
Technical Cooperation - Committee of the Whole
Meeting
Nha Trang, Viet Nam
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Energy Working Group's Proposed Workplan for 2017

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, advancing clean and renewable energy, and instituting reforms to 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 2017, under the overarching theme of "*Creating New Dynamism, Fostering a Shared Future*," these priorities are:

1. Promoting sustainable, innovative and inclusive growth
2. Fostering far-reaching regional integration and connectivity
3. Supporting small business competitiveness, innovation and participation in trade
4. Enhancing food security and sustainable agriculture in the face of climate change

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 2017 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, including those related to climate change. 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.

1. Expected Outcomes/Deliverables for 2017

The EWG's work plan is responsive to specific priorities from Leaders and Ministers on areas such as promoting energy security, developing clean and renewable energy, instituting reforms to 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 2017 please see Annex A. Further projects are anticipated to be added to this list in 2017, 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 (APEREC), 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 required to be reported and discussed in 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; addressing energy-water nexus issues to understand potential vulnerabilities; assessing cyber-energy nexus issues to build reliable, inter-operable and secure electric grids; and enhancing energy networks in the region. 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.

- **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 2017, the EWG through the Experts' Group on New and Renewable Energy (EGNRET) will implement six new projects approved in 2016. Specific activities include 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 heating applications of bio-pellet made from ecological-hazard plant in small and medium enterprises to enhance utilization of renewable energy; guidelines toward high biodiesel blend diesel (eg b20) specification; and filling the gap to reach the goal of doubling renewable energy. New projects developed in 2017 include topics such as energy storage technologies needed for sustainable energy systems and enhance utilization of renewable energy in the APEC region. 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 2017, the EWG will undertake projects approved in 2016 in such areas as developing APEC nearly (net) zero energy building roadmap study responding to COP21; supporting the development and implementation of low-emission development strategies (LEDS) in transport sector; capacity building for equipment installers, policymakers and entrepreneurs; efforts to harmonize energy efficiency standards and labels; incubator for enhancing commercial buildings energy performance; reducing losses in power distribution through improved efficiency of distribution transformers; 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; Peer Reviews on Energy Efficiency (PREE); an Energy Efficiency Policy Workshop; implementing best energy efficient practices through policy and program evaluation; and a gap assessment of APEC's energy efficiency work to target areas important to achieving Leaders' 45 percent energy intensity reduction goal. The EWG is also supporting the Clean Energy Ministerial Global Lighting Challenge that is a public-private partnership to deploy 10 billion high-efficiency, high-quality

affordable light bulbs worldwide. The EWG is working with the International Copper Association as well as the International Energy Agency on energy efficiency projects. 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 and efficient use of fossil fuel through the development of highly efficient generation and production, and Carbon Capture Utilization and Storage (CCUS) remain a high priority for many APEC economies. In this context, EGCFE will consider new and renewed activities focused on the adoption of cleaner fossil fuels such as natural gas and clean coal technologies, and barriers to that adoption. EGCFE will also consider fossil fuels security issues including OGSi.

Since 2009, APEC Leaders have annually committed to rationalize and phase out inefficient fossil-fuel subsidies that encourage wasteful consumption. 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, while Vietnam and Brunei are in line for 2017. These peer reviews 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 2017.

- **Low-Carbon Cities**

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’s seventh phase will be completed in 2017 and deliver a low-carbon development plan in Krasnoyarsk, the Russian Federation, for this inland region with high heating and cooling system demands. This follows successful earlier phases in Yujiapu Central Business District (in 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; and Bitung (Indonesia) focussing on industrial city issues; and Mandaue City (The Philippines) which included cooperation with neighboring cities to boost sustainability. As a step forward, the LCMT project will launch a new phase of the dissemination of the “Low Carbon Town”, based on the concept and lessons learned from the 6 phases mentioned above.

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 (CNCS) in APEC economies, and developed solar-powered emergency shelter solutions (SPESS) as an energy-resilience tool for natural disaster relief. In 2017, APSEC will conduct the APSEC visiting researchers program that was proposed in EWG52, and deepen the CNCS works, as well as hold the second workshop on APEC Sustainable Cities to share best practices, train city executives and integrate industry-finance knowledge resources for the sustainable development of cities. APSEC will also work with the EWG’s Low Carbon Model Towns (LCMT) Task Force

as well as the new EWG Task Force on Energy Resiliency. Projects under development in 2017 include work on technical analysis to support the deployment of renewable energies in APEC region.

- **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, to wit: 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 EWG will pursue activities under the various work streams in collaboration with other relevant working groups such as the Emergency Preparedness Working Group.

Singapore will be organising an inaugural Energy Workforce Resilience Workshop as part of the 53rd APEC EWG and Associated Meetings in April 2017 to facilitate discussions on the key human resources challenges in the energy sector. The newly established APEC Initiative for Enhancing the Quality of Electric Power Infrastructure as well as the OGSi will also contribute to promoting energy resiliency initiatives in the region. The ERTF meetings will be held on the margins of the EWG meetings.

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.

The International Copper Association (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. World Energy Council (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. The possible establishment of an annual APEC Energy Public-Private Dialogue will be explored.

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's Sustainable Development Working Group.

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 the

International Energy Agency (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), the International Renewable Energy Agency (IRENA), the World Energy Council (WEC), the International Standards Organization (ISO), the Clean Energy Ministerial (CEM), and Collaborative Labelling and Appliance Standards Program (CLASP).

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. In 2017, the EWG will expand its collaboration in 2016 to include the Senior Officials' Urbanisation Friends of the Chair group related to low carbon cities, Emergency Preparedness Working Group on energy resilience, the Mainstreaming Ocean-Related Issues Steering Council on marine energy, the Counter-Terrorism Working Group on cybersecurity, the Policy Partnership on Science, Technology and Innovation on climate and innovation, 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 2017, including through participation in the SCE-COW.

Cross-fora collaboration will be particularly important for ensuring that discussions and action on APEC's 4 priority issues for 2017, fully benefit from the potential relevant contributions of EWG. EWG project activities (both completed and underway) may be particularly relevant for priorities 1 and 4 above ie 'Promoting sustainable, innovative and inclusive growth' and 'Enhancing food security and sustainable agriculture in the face of climate change'. Towards this end, special focus will be placed in enhancing EWG's cross-fora collaboration in 2017 with the leaders of projects and initiatives under those two priorities – including the Policy Partnership on Food Security (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 2017

The EWG's mission includes building the capacity of APEC members 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 2017

The EWG maintains one of the most extensive portfolios of projects in APEC.

In 2017, 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 Financing
- 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 complete peer reviews of inefficient fossil fuel subsidies for Brunei Darussalam by the end of 2017. The EWG will share results and best practices from fossil fuel subsidy reform efforts in 2017.

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 expand content on the ESCI Knowledge-Sharing Platform and by the EWG's LCMT Task Force which will conduct a case study on Krasnoyarsk in Russia.

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 begin implementing a work plan for the Energy Resiliency Task Force created in response to Energy Ministers' decision at the 12th Ministerial in Cebu, the Philippines in October 2015. The EWG will update activities under the OGSI to better support APEC's energy resiliency.

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.

In 2017, all the sub-fora of EWG will review their terms of reference (TOR) and update the content to meet their objectives and functions properly, and further support the development of EWG. The EGCFE will reinvigorate its work program with more studies and workshops on priority topics, and expand from its coal-focused work to include activities on oil and gas security in the APEC region to fulfil Energy Ministers' instruction.

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 EWG53 (Singapore, April) and EWG54 (Wellington, November) 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 2017, please see Item 2. below (Itemized Work Plans for 2017).

2. Itemized Work Plans for 2017

Title	Project	Mandate (Leaders/Ministers/SO M/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)
<p>Work towards the APEC aspirational target of reducing aggregate energy intensity by 45 percent from 2005 levels by 2035 through collaboration on analysis of available energy efficient technologies, energy efficiency standard harmonization and peer review on energy efficiency.</p>	<ul style="list-style-type: none"> ● Establishing Lighting Best Practices and Educational Programs to Achieve Deep Energy Saving, An APEC Regional Collaboration with University Lighting Centers and Research Institutions ● APEC Nearly (Net) Zero Energy Building Best Practices and Energy Reduction Results Comparative Study ● Workshop to Develop Qualified Product Lists for High-Quality and High-Efficiency Commercial, Industrial, and Outdoor Lighting Products and Control Systems in the APEC Region ● Gaps Assessment on APEC Energy Efficiency and Conservation Work Toward Fulfilling the Leaders' Energy Intensity Reduction Goal ● Reducing Losses in Power Distribution through Improved Efficiency of Distribution Transformers ● APEC Peer Review on Energy Efficiency (PREE), Phase 6 ● APEC Nearly (Net) Zero Energy Building Roadmap Study Responding to COP21 	<p>APEC Leaders committed in 2011 to this goal; Energy Ministers also committed in EMM10-EMM12.</p>	<p>Fostering Sustainable, Innovative and Inclusive Growth</p>	<p>CTI/SCSC; CLASP; International Copper Association; Clean Energy Ministerial</p>

<p>Develop a roadmap to double renewable energy in the regional energy mix by 2030</p>	<ul style="list-style-type: none"> ● Workshop on Experiences and Plans to Double Renewable Energy Utilisation by 2030 in the APEC Region ● APEC Workshop on Best Practice of New and Renewable Energy Development in APEC Region ● Strategy for Large-Scale Implementation of Biogas Capture from Palm Oil Mill Effluent and Reuse for Renewable Electricity Generation ● Filling the Gap to Reach the Goal of Doubling Renewable Energy in the APEC Region ● Strategy for Large-Scale Implementation of Biogas Capture from Palm Oil Mill Effluent and Reuse for Renewable Electricity Generation ● Long-Term Reliability Study of Photovoltaic (PV) Systems for Installation on Islands ● Small and Medium PV System Database in the APEC Region ● Study on the Cost-Effective Renewable Energy-Supply Solutions based on Innovative Solar Technologies to Promote Green Buildings in APEC Region ● Heating Applications of Bio-Pellet made from Ecological-Hazard Plant in Small and Medium Enterprises to Enhance Utilization of Renewable Energy in the APEC Region ● Guidelines toward High Biodiesel Blend Diesel (eg B20) Specification in the APEC Region ● Best Practice Guidance of Effective Coalbed Methane Recovery Technologies for APEC Developing Economies 	<p>APEC Leaders committed in 2015; Energy Ministers committed in 2015 and 2016.</p>	<p>Fostering Sustainable, Innovative and Inclusive Growth</p>	<p>REN21; IRENA; IEA</p>
<p>Make further progress toward rationalizing and phasing out inefficient fossil fuel subsidies, whilst providing energy access to those in need</p>	<ul style="list-style-type: none"> ● APEC Fossil Fuel Subsidy Reform: Workshop on Effective Pricing Mechanisms and Mitigation Strategies 	<p>APEC Leaders annually since 2009 committed to phase out inefficient fossil fuel subsidies; Energy Ministers also committed in EMM9-EMM12 Declarations.</p>	<p>Fostering Sustainable, Innovative and Inclusive Growth</p>	<p>Finance Ministers' Process; International Energy Agency; Friends of Fossil Fuel Subsidy Reform</p>

<p>Work towards improving resiliency of energy infrastructure to natural disasters and climate change within the region through APEC Initiative for Enhancing the Quality of Electric Power Infrastructure and conducting vulnerability assessment on energy infrastructure.</p>	<ul style="list-style-type: none"> ● Developing Solar-Powered Emergency Shelter Solutions (SPeSS) as an Energy-Resilience Tool for Natural Disaster Relief in APEC Community ● APEC Initiative for Quality of Electric Power Infrastructure Development ● Water-Energy Nexus: Coal-Based Power Generation and Conversion - Saving Water ● Off grid electrification option for remote regions in APEC economies ● Energy Workforce Resilience Workshop 	<p>APEC Leaders committed in 2015 and commend the initiative of creating a Task Force on Energy Resiliency; Energy Ministers also committed in EMM12 Declarations.</p>	<p>Fostering Sustainable, Innovative and Inclusive Growth</p>	
<p>Support community-based low carbon development in the region through APEC Low-Carbon Model Town Project, APEC Energy Smart Community Initiative Knowledge Sharing Platform, and APEC Cooperation Initiative for Jointly Establishing an Asia-Pacific Urbanization Partnership</p>	<ul style="list-style-type: none"> ● APEC Low-Carbon Model Town (LCMT) Project - Phase 6 ● 2017 Energy Smart Communities Initiative (ESCI) Best Practices Awards Program ● Experience Sharing Workshop on the Five Years Construction of the First Low Carbon Model Town (LCMT) — Yujiapu CBD ● APEC Low-Carbon Model Town (LCMT) Project, Phase 7 ● Incubator for Enhancing Commercial Buildings Energy Performance ● Supporting the Development and Implementation of Low-Emission Development Strategies (LEDS) in Transport Sector ● APEC Workshop on Promoting the Development of an Evaluation Community ● Research on energy storage technologies to build sustainable energy systems in the APEC region 	<p>The Energy Smart Communities Initiative (ESCI) was launched in November 2010 by the U.S. President and Japanese Prime Minister within the Asia-Pacific Economic Cooperation (APEC). APEC Leaders have recommitted annually since 2011 and Energy Ministers in EMM10-12.</p>	<p>Fostering Sustainable, Innovative and Inclusive Growth</p>	<p>World Energy Council; ISO</p>
<p>Implement Oil and Gas Security Initiative to address the challenges faced and to improve security exercises, as well as create favorable conditions for trade and investments to support a diversified, flexible, and integrated natural gas market in the APEC region through APEC Regional LNG Trade Facilitation Initiative</p>	<ul style="list-style-type: none"> ● Oil and Gas Security Initiative: 2016 ● Oil and Gas Security Initiative: 2017 	<p>APEC Energy Ministers put forward the Energy Security Initiative in 2000, Oil and Gas Security Exercises in 2013 and their successor, OGSi, in 2014.</p>	<p>Fostering Sustainable, Innovative and Inclusive Growth</p>	<p>International Energy Agency; the Emergency Preparedness Working Group</p>

Implement APEC Green Energy Finance Initiative to ensure financial sustainability of green energy development in the region	<ul style="list-style-type: none"> Promoting Innovative Green Financing Mechanisms for Sustainable Urbanization and Quality Infrastructure Development in APEC Region 	Energy Ministers committed in EMM12 Declarations.	Fostering Sustainable, Innovative and Inclusive Growth	
Strengthen cross-fora collaboration and public private partnership on APEC energy issues		Energy Ministers committed in EMM9-EMM12 Declarations.	Fostering Sustainable, Innovative and Inclusive Growth	International Energy Agency; Committee on Trade and Investment (CTI)
Work on an “APEC Energy Vision Post-2020” agenda to address energy challenges of the future	<ul style="list-style-type: none"> Workshop on energy statistical and geographic information systems Roadmap to promote transfer and dissemination of clean coal technologies in APEC region 		Fostering Sustainable, Innovative and Inclusive Growth	REN21; IRENA; IEA