

EGNRET 47

1. EGNRET Activities

The 47th Meeting of the APEC Expert Group on New and Renewable Energy Technologies (EGNRET 47) was held on October 10 to 11, 2016 in Jakarta, Indonesia. An APEC workshop, “2nd Workshop on Developing the Green Energy Smart Farm in APEC Region” (EWG 23 2015A), was held alongside the meeting on October 12-13, 2016 including a site visit to Indonesian PUSPIPTEK (Research Center for Science and Technology) in Banten, Indonesia.

The EGNRET 47th meeting was chaired by EGNRET Chair, Dr. Chung-Hsien Chen of the Bureau of Energy, Chinese Taipei. Representatives from Japan, Republic of Korea, the Philippines, Chinese Taipei, Thailand, USA, Indonesia, and other APEC representatives from APEC Policy Partnership on Food Security (PPFS), Asia Pacific Energy Research Centre (APERC) and Low Carbon Model Town Task Force (LCMT) participated in the meeting. In addition, delegates from Economic Research Institute for ASEAN and East Asia (ERIA) and International Copper Association (ICA) were also invited to participate in the meeting.

Five invited presentations in the meeting were “APEC Energy Demand & Supply Outlook: 6th Edition & High Renewables Scenario and Renewables Heating & Cooling project” by APERC, “The Dissemination Plan of Low-Carbon Model Town (LCMT) Project” by LCMT, “ERIA Research and Policy Overview of Renewable Energy Uptake in ASEAN+6” by ERIA, “WG1 Sustainable Development in Agriculture & Fishery Sectors” by APEC PPFS, and “APEC – ICA cooperation” by ICA. In addition, Ms. Penelope Howarth, Program Director of the APEC Secretariat also delivered a presentation on “APEC Secretariat Update” by video, and the Project Leader of the US National Renewable Energy Laboratory (NREL), Mr. Erik Ness, made a presentation on “Clean Energy Solutions Center Technical Assistance Support” via conference call.

In order to push forward the renewable energy doubling goal, the meeting theme of member economy presentation for EGNRET 47 was Bioenergy Applications in APEC Member Economies.

Moreover, at EGNRET 47, the Terms of Reference (TOR) of EGNRET was suggested to add the task of reaching the goal of doubling renewable energy in the APEC region. The EGNRET secretariat will revise the TOR, and circulate for endorsement by EGNRET Representatives soon.

All EGNRET 47th meeting presentations are available on the website at:
<http://www.egnret.ewg.apec.org/meetings/egnret47/index.html>

EGNRET thanks Indonesia for hosting EGNRET 47, and special gratitude is due to Dr. Eniya Listiani Dewi (BPPT Deputy for Agroindustrial Technology and Biotechnology) and their colleagues for their kind assistance and arrangement on EGNRET 47 meeting affairs. In addition, EGNRET would like to express the sincere condolences at the loss of Indonesian BPPT's colleague Dr. Mahyudin Abdul Rachman, the Chair of Indonesia Chapter for the APEC Research Center for Advanced Biohyerogen Technology (ACABT), who passed away during assisting EGNRET in preparing EGNRET 47 meeting.

2. Discussion during EGNRET 47 Meeting

Two major topics were discussed in the EGNRET 47th meeting including (1) Filling the Gap to Reach the Goal of Doubling Renewable Energy in the APEC Region, and (2) Future Cooperation between EGNRET and PPFS.

(1) Filling the Gap to Reach the Goal of Doubling Renewable Energy in the APEC Region

The United Nations Secretary-General launched a pioneering new initiative, Sustainable Energy for All (SE4ALL), on 1 Nov 2011, to mobilize urgent global action: Double the share of renewable energy in the global energy mix by 2030. Energy Ministers at EMM 11 (2014) also instructed the EWG through the EGNRET to develop the road map for the aspiration goal of doubling the share of renewable in the APEC energy mix, including in power generation by 2030.

In order to step toward to the goal of doubling the renewable energy share and promoting renewable energy in APEC region, EGNRET has proposed a project by Chinese Taipei to develop a roadmap toward renewable energy doubling goal by 2030, and this project would like to collaborate with APEC sub-groups and APEC economies.

Chinese Taipei Representative made a presentation "Next Steps toward Achieving Renewable Energy Doubling Goal" to introduce the background of renewable doubling goal and the recent EGNRET activities for the renewable energy doubling goal. The main objectives of this project are to evaluate the potential of renewable energy development in the APEC region, assess the gap to reach the goal, and develop a strategic roadmap toward the goal of doubling renewable energy. It might cooperate with EGEDA and APERC,

and integrate APEC's energy database and energy outlook.

Delegates have consensus that the renewable energy doubling goal would be reached by aggregate renewable energy development among the APEC economies. In addition, the roadmap is suggested to measure the cost of developing renewable energy, and underline by different sectors and technologies. Furthermore, APEC PPFS and ICA also have willingness to support and work with EGNRET to conduct the strategic plan to reach the goal in the APEC region.

(2) Future Cooperation between EGNRET and PPFS

In EGNRET 47, the possible cooperation between APEC and APEC PPFS was highlighted and discussed. The cooperation is suggested to integrate the EGNRET projects in past two years and the integrated data could be used as the reference for future proposed cooperation project direction.

Chinese Taipei Representative made a presentation "Future Cooperation between EGNRET and PPFS" to briefly introduce the missions of EGNRET and PPFS, and the linkage between EGNRET projects (see below) and PPFS mission.

First, the EGNRET project, Best Practices for Developing the Green Energy Smart Farm in the APEC Region (EWG 23 2015A), could provide some suggestion and cooperate with PPFS. This project has been listed as the priority work plan on Development of rural communities (RD) for Enhancing the Regional Food Market for APEC Peru 2016. The objectives of this project are to assess and demonstrate the small-scale distributed renewable energy in the farms including solar PV and advanced biomass energy derived from the agricultural waste for the APEC region; introduce the PV-ESCO (energy service company) model, a financial mechanism to provide the economic benefits to farmers directly in the APEC regions; and help APEC's developing economies to build up the green energy smart farms with access to the renewable energy, and also assist the farmers and their family in reducing the poverty.

Second, the EGNRET project "Strategy for Large-Scale Implementation of Biogas Capture from Palm Oil Mill Effluent and Reuse for Renewable Electricity Generation (EWG 25 2015A)" may cooperate with PPFS. The main contribution of this project which publishes a strategy around a public-private alliance can converge to finance and implements biogas capture and use for renewable electricity generation at large scale that will particularly encompass a significant portion of the world's palm oil mills. In addition, it also develops the design for an alliance, including, but not limited to, identifying which parties need to be at

the table from each stakeholder segment, whether the alliance should form under an existing umbrella organization (e.g., an organization like APEC may, or may not, be the most effective forum for establishing this particular alliance), who are potential providers of the needed biogas technology and services, and which mills have an interest in implementing biogas capture and use.

Third, the EGNRET project “APEC Low Carbon Model Town Solar Photovoltaic Agricultural Development Mode Study (EWG 11 2015A)” also has linkage with the mission of PPFS. It creates a framework between solar PV technology scheme and feasible commercial pattern for agriculture applications; it develop recommendations in various solar PV agricultural application demonstration projects, and provide promotion suggestions for economies of different economic development levels; and to provide technology and business model supporting the agricultural development in the developing and underdeveloped regions.

Therefore, EGNRET and PPFS will cooperate to enhance food security in the APEC region. The cooperation between EGNRET and PPFS could be included sharing the technology of bioenergy and biodiesel with farms in the APEC region, improving the efficiency in farms by energy technologies, and bringing microgrid technology to rural area electrification. Besides, there are some technologies could be applied in farms to generate electricity and improve farmers’ living standards such as solar thermal, heater and floating photovoltaic power plants.

3. Elections of Chair and Vice-Chair

According to the EGNRET TOR, the elections were held at EGNRET 47 for the positions of Chair and Vice-Chair of EGNRET for the next two years (2017-2018).

Chinese Taipei was elected as the EGNRET Chair, and Korea as the vice Chair consecutively to serve a two-year term, 2017-2018. In addition, the secretaries were nominated by the Chair, and endorsed by EGNRET Representatives to hold the EGNRET secretariat.

4. EGNRET Project Update

The EGNRET has variety of projects underway to facilitate the use of renewable energy technologies in the APEC region.

Currently, 6 EGNRET projects have been completed during 2014-2015, and 15 on-going

projects from 2015 and 2016. Also, 3 projects have already been successful in gaining in-principle approval for APEC funding in Session 2, 2016, and Project Overseers for these 3 projects have been informed for development and submission of their full project proposals by 26 Oct., 2016. In addition, 5 new project Concept Notes have been submitted for funding in Session 1, 2017.

The above projects are listed below.

(1) Completed Projects from 2014-2016 (6 projects)

	Project Title	Sponsor Economy	Project Number
1	APEC Workshop on Promoting the Development of Wind Energy, Phase 2 – Public Private Partnership for Wind Energy Development	Viet Nam	EWG 15 2015A
2	Realization of APEC Low Carbon Model Town through Smart Grid Development (LCMT-SGD)	Thailand	EWG 07 2014A
3	2014 APEC Workshop on Biodiesel Application Experiences	Chinese Taipei	EWG 01 2014S
4	APEC Peer Review on Low-Carbon Energy Policies (PRLCE), Phase 3	Japan	EWG 01 2014A
5	APEC Public-Private Dialogue on Addressing Impediments in Financing Renewable Energy	Viet Nam	EWG 02 2014A
6	APEC Photovoltaic System Best Practices and Latest Development Comparative Study (PV-BPLD)	China	EWG 03 2014A

(2) On-going projects (15 projects)

	Project Title	Sponsor Economy	Project Number
1	Long term reliability study of PV systems for installation on islands	Chinese Taipei	EWG 21 2015A
2	Best Practices for Developing the Green Energy Smart Farm in the APEC Region	Chinese Taipei	EWG 23 2015A
3	Strategy for Large-Scale Implementation of Biogas Capture from Palm Oil Mill Effluent and Reuse for Renewable Electricity Generation	USA	EWG 25 2015A
4	APEC Public – Private Dialogue on Promoting Trade and Investment in Renewable and Clean Energy	Viet Nam	EWG 20 2015A
5	Case Studies on the Best Practices of Wind Energy Development in APEC Region	Viet Nam	EWG 24 2015A
6	Developing Solar-Powered Emergency Shelter Solutions (SPESS) as an Energy-Resilience Tool for Natural Disaster Relief in APEC Community	China	EWG 22 2015A
7	Promoting Renewable Power Generation with Fuel Cell Technologies	China	EWG 13 2015A

8	A Comparative Study on Multi-Field Applications of Building-Mounted Photovoltaic (BMPV) in the APEC Region	China	EWG 18 2015A
9	Renewable Energy Safety in APEC	Thailand	EWG 17 2015A
10	Small and Medium PV System Database in the APEC Region	Thailand	EWG 14 2015A
11	APEC Workshop on Promoting the Development of Biomass Energy	Viet Nam	EWG 16 2015A
12	Ethanol Trade Development as Part of APEC's Renewable Fuel Strategy	USA	EWG 12 2015A
13	Off Grid Electrification Option for Remote Regions in APEC Economies	China	EWG 07 2016A
14	Research on Energy Storage Technologies to Build Sustainable Energy Systems in the APEC Region	China	EWG 04 2016A
15	Study on the Cost-Effective Renewable Energy-Supply Solutions based on Innovative Solar Technologies to Promote Green Buildings in APEC Region	China	EWG 03 2016A

(3) In-principle approval for APEC funding for Session 2, 2016 (3 Projects)

Project Number by EWG	Project Title	Proposed Economy
EWG 2	Filling the Gap to Reach the Goal of Doubling Renewable Energy in the APEC Region	Chinese Taipei
EWG 9	Heating Applications of Bio-Pellet made from Ecological-Hazard Plant in SMEs to Enhance Utilization of Renewable Energy in the APEC Region	Chinese Taipei
EWG 12	Guidelines toward High Biodiesel Blend Diesel (eg B20) Specification in the APEC Region	Thailand

(4) The proposing Concept Notes for Session 1, 2017 (5 projects)

Project Number by EGNRET	Project Title	Proposed Economy
[NRE171-1]	Making the Case for Clean Energy Investments with Life-Cycle Impact Assessments	USA
[NRE171-2]	Economic and Life Cycle Analysis of Solar Photovoltaic Systems in APEC region toward Low-carbon Society	Malaysia
[NRE171-3]	APEC Peer Review on Low-carbon Energy Policies (PRLCE) Phase 4	Japan
[NRE171-4]	Technical Analysis to support development and deployment of Renewable Energies in APEC Region	China
[NRE171-5]	Improving User-side Clean Energy Consumption in the APEC Region by Utilizing Distributed Solar PV and Energy Storage	China

5. Prospective of EGNRET Works in 2017

The EGNRET will focus more on renewable energy doubling goal, smart grid, low carbon

town, etc. which are directly related to the SE4All, ESCI and APEC ASGI.

EGNRET members are encouraged to conduct researches related to reduction of energy intensity in APEC region.

EGNRET will expand the experience exchange or share of best practices for each economy to access the enough technology to further promote the renewable energy for RE doubling goal.

The EGNRET will strengthen collaboration with APEC other for a such as PPFS, APERC, APSEC, LCMT Task Force, EGEE&C, EGEDA, Policy Partnership on Science, Technology, and Innovation (PPSTI), and some projects, e.g., PRLCE and PREE, and LCMT supported.

Collaboration with International Renewable Energy Agency (IRENA), Economic Research Institute for ASEAN and East Asia (ERIA), Energy Research Institute Network (ERIN), and International Copper Association Ltd. (ICA) on promotion of renewable energy in the APEC region will be carried out as well.