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Contents

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APEC Meetings and Events Announcement

§The EGNRET 40th meeting and associated workshop §

April 2-5, 2013

Ha Noi, Viet Nam

This Circular announces the arrangements and other relevant information for the "40th Meeting of the APEC Expert Group on New and Renewable Energy Technology (EGNRET)" and associated meetings. EGNRET 40 will be held in Ha Noi, Viet Nam from April 2 to 5, 2013. In addition to EGNRET 40, the Workshop on Hydro and Renewable Energy Electricity Integration into Grid will be held alongside the meeting.

DATE:

April 2-3, 2013: EGNRET 40 Meeting (1.5 days)

April 3-5, 2013:The Workshop on Hydro and Renewable Energy Electricity Integration into Grid (2.5 days)

VENUE:

Both EGNRET 40 Meeting and the APEC Workshop on Hydro and Renewable Energy Electricity Integration into Grid will be held at Prestige Hotel, 17 Pham Dinh Ho, Ha Noi, Viet Nam (around 45 min by taxi from Noi Bai International Airport)

(Website: http://www.prestigehotels.com.vn/)

MEETING THEME:

The theme for EGNRET 40 will be "**Integrating New and Renewable Energy into the Grid in the APEC Member Economies**".

SCHEDULE:

Date	Time	Events
Apr. 2, 2013	08:30-17:10	**EGNRET 40 Meeting**
Apr. 3, 2013	09:00-12:00	**EGNRET 40 Meeting** (Cont.)
	13:30-17:00	**APEC Hydro and Renewable Energy Electricity Integration Workshop** Session 1: Plenary Session
	Evening	Dinner (hosted by GDE, venue: TBC)
Apr. 4, 2013	09:00-15:00	Session 2: Current status and development plan for grid small hydro power in APEC Economies.
	15:00-17:00	Session 3: Issues on grid integration of small scale

		RE electricity APEC Economies – Electricity Utilities Perspective.
Apr. 5, 2013	09:00-10:20	Session 3: (Cont.)
	10:20-11:30	Session 4: Roundtables on the development of a roadmap for small hydro integration.
	13:30-19:00	Technical site visit (TBC)

More details about the meeting will be announced with new developments.

Thanks to Viet Nam for hosting the "EGNRET 40" and special gratitude to Mr. Pham Thanh Tung (General Directorate of Energy, Ministry of Industry and Trade) and his colleagues for their kind assistance and arrangement of meeting affairs.

Research Note

§ Upgrading Properties of Biomass Fuels by Torrefaction Process: Applying to Existing Coal-fired Boilers §

Keng-Tung Wu*

Employing the raw biomass material as a fuel directly would cause several problems, such as its high moisture content, poor grindability and relatively lower heating value, which make raw biomass an high cost in transportation. On the other hand, at present, Taiwan Power Co. (TPC) in Chinese Taipei employs fossil power as major local power supply, which uses the fossil fuels (petroleum (4.54%), coal (57.57%) and natural gas (37.89%)) to generate power. Yet, CO_2 generated from the combustion of these fossil fuels will definitely impact the development of the future operation. However, currently most power plants operated by Taiwan Power Co. are pulverized coal-fired boilers. It is difficult to co-fire coal with solid biomass fuels directly, except grinding biomass. Moreover, to grind the solid biomass, the power plant must install a new grinding facility, and the cost should be increased. Therefore, if solid biomass could be blended with coal in the coal mill, pre-treatment of biomass, i.e., torrefaction, is a solution to improve the biomass fuel quality.

Torrefaction process is developed as a thermal pre-treatment technology when biomass turns into solid fuels, under the atmospheric pressure and absence of oxygen. Usually, the reaction temperature is between 280 and 350^{o}C, and the residence time is about 1 hour. It can also improve the quality of solid fuels simultaneously. Compared with biomass raw materials, most of biomass properties are changed after torrefaction. It can be found that the hemicellulose component in biomass is decomposed during torrefaction. The distributions of product yields for the solid torrefied biomass, torrefied liquid, and gases are around 85%, 10%, and 5%, respectively. The carbon content, ash content, fixed carbon content, higher heating value (HHV) and Hardgrove Grindability Index (HGI) of torrefied biomass increase with increasing the operating temperature and residence time, but hydrogen content, oxygen content, moisture content, and mass yield of solid product show the contrary results.

Torrefied biomass shows the satisfying properties as a coal-like fuel for combustion, gasification, etc., such as homogeneous, hydrophobic, preserved, grindable, and higher energy content. Also, it becomes easy to transport, handling, and feeding for energy applications. Especially, torrefied biomass with upgrading properties is suitable for co-firing with coal in the existing pulverized coal (PC) boilers. With higher HGI, the torrefied biomass can be blended with coal directly for grind before feeding into the boiler without modifying any part of the PC combustion system further. Thus, it is expected that that the biomass torrefaction process will promote the utilization of biomass energy in Chinese Taipei.

Adapted from:

Wu, K.-T. and C. J. Tsai, "Upgrading Properties of Biomass Fuels by Torrefaction Process: Applying to Existing Coal-fired Boilers," The 2nd Symposium on Renewable Energy Technologies (SoRET), Raiwai, Fiji (2011).

Wu, K.-T., C. J. Tsai, C. S. Chen, and H. W. Chen , "The Characteristics of Torrefied Microalgae," Applied Energy, 100, 52–57 (2012).

*** Dr. Keng-Tung Wu** is an Assistant Professor at Department of Forestry, National Chung Hsing University in Taichung, Chinese Taipei. He also holds the APEC New and Renewable Energy Technology Expert Group (EGNRET) Secretariat since 2011. Dr. Wu's research involves fluidization engineering and biomass thermochemical conversion technology including gasification, pyrolysis and torrefaction. (Contact: wukt@nchu.edu.tw)

Research News

§ Green energy initiation and investments in APEC countries- Indonesia and Thailand §

INDONESIA - State-owned plantation company **PT Perkebunan Nusantara (PTPN)** is set to widen its product portfolio by expanding into biofuel production during 2013. The company reported that sugar and tobacco lines cannot be fully relied on to support the Indonesia-based company, which is seeing increased manufacturing costs, so biofuels and electricity production are set to be introduced.

A bioethanol facility is being developed at one of its sugar mills in East Java and is expected to use molasses as feedstock. The resultant waste will be converted into biogas that is hoped to produce around 4MW of electricity. The *biogas plant is expected to cost around IDR60 billion (€4.6 million).*

THAILAND - The ***Thailand Board of Investment*** has announced its support in alternative energy investment after findings have shown that demand for energy will increase by 39 per cent within nine years. According to the Ministry of Energy's estimation, under ***Alternative Energy Development Plan (AEDP 2012-2021)***, it has been found that in 2021, the demand for energy in Thailand will increase from 71,728 ktoe today to 99,838 ktoe, or a 39.19 per cent increase.

The Thai government is hoping to push the use of alternative energy and ***renewable energy*** to reach ***25 per cent of total energy consumption***. This is because Thailand has agricultural products that can be used as energy sources such as **biomass, biogas, biodiesel and ethanol**.

Food industries also yield a great amount of byproducts that can be made into energy from waste. Thailand's natural resources also have great potential for

energy generation - the country has the average sunlight energy of 18.2 MJ/m2/day, not to mention the nation's potential in wind energy. This makes Thailand the right place for alternative energy and renewable energy investment, which will lead to a significant decrease in Greenhouse Gas emission, making ***Thailand a low-carbon society*** in the future.

The Board of Investment (BOI) has policy to support this type of investment by offering tax incentives and other benefits. For taxation, the BOI is offering tax exemption or reduction for imported machines and materials, and corporate tax exemption or reduction. Incentives in other areas include permission to bring in foreign skills, permission to own land, and foreign currency cash flow. ***Foreign investors*** can also hold 100 per cent of the shares. Dr. Atchaka Sibunruang, Secretary General, Thailand Board of Investment, said that the BOI is aware of the importance of alternative energy and its impact on the development of Thailand, so it is one of the country's priorities. ***Projects involving alternative energy and renewable energy*** which are proposed for ***investment support*** are therefore entitled to incentives and benefits.

Adapted from:

http://www.thebioenergysite.com/news/12128/thailand-supports-investment-in-alternative-energy,

http://www.thebioenergysite.com/news/12354/indonesian-sugar-company-to-expand-into-ethanol.

Special Column

§ Upcoming Events in 2 Months §

Date	Event Name	City	Country
March 22-23	ABHL Pre-Meeting	Osaka	JAPAN
April 9-11	APEC-1st Policy Partnership on Science, Technology, and Innovation (APEC-PPSTI) Meeting	Surabaya	INDONESIA
April 29- May 2	2013 APEC Short-Term Training Course and Workshop	Taichung	CHINESE TAIPEI
May 1	2013 APEC Steering Committee Meeting	Taichung	CHINESE TAIPEI
June 30-July 4	APEC-2nd Policy Partnership on Science, Technology, and Innovation (APEC-PPSTI) Meeting	Kota Medan	INDONESIA
July 28-30	2013 Cross-strait Forum on Climate Change and Green Energy	Taichung	CHINESE TAIPEI
August 4-7	Bio-H2 2013	Montreal	CANADA
November 22-25	ABBS-2013 and ABHL Meeting	Osaka	JAPAN