

APEC Project PPSTI 02 2017A
APEC Research Center for Advanced Biohydrogen Technology (ACABT)
Smart Power Management for Self-Sustained Green Community in APEC Region

Terms of Reference (ToR)

15 January, 2018

1. Introduction

This project proposes to set up a platform demonstrating and sharing the experiences of creating building the smart power management software that has already been in designing and creating process. Moreover, it plans to disseminate and scale-up this science-based collaboration framework, then to demonstrate how to transfer organic wastes to bioenergy and smart power grid technologies through the 3-Day Event (workshop, educational platform and real case technique forum).

The objectives of the project are as follows:

- To demonstrate and provide practices of the smart power management system software through the 3-Day Event so that to enhance and expand the existing collaborative framework which the self-fund project has already built up among the academia, research institutes, and private sectors.
- To ensure participants of 3-Day Event will be fully able to participate and share their domestic experience so that the smart power management system software could be developed and benefit well in the APEC regions.
- To build capacity for the bio-based smart power grid and bio-economy issues, and to strengthen connectivity and cooperation among APEC economies so that to strongly build up green growth and sustainable environment in the APEC regions.

2. Outputs

The outputs of this project will include:

- (1) **O2O Educational Platform:** It is a training competition program for young entrepreneurial teams across APEC economies to learn the application of smart power management system for self-sustained green community in APEC region. The team members will be led by one expert to participate. It is based on a well-designed Online/Offline (O2O) platform with a competition method to dig out

the problems, build up the strategy of problem solving, discuss with the results and impacts, and exchange the ideas between each team from different economies. Through the platform, it is to reinforce the motivation of the young entrepreneurial teams to tackling our community problems but also promoting sustainability awareness in the APEC region.

The whole activity lasts for 6 months. The O2O educational platform is divided into 3 stages, which are the preliminary round, semi-final, and final pitch. The first and second stages are online and the final pitch is offline. All the teams look up the information online on ACABT Yes Challenge website: <https://apec-yes.community/guidelines>. At the first beginning, the teams in APEC economies upload two pages of the preliminary plan, and for the semi-final stage, the teams will prepare 2-3 minutes of video clip and a clearer project plan. The 8 teams that join the final pitch will be choose by the juries and attend 3-Day event.

(2) **3-Day Event:** This 3-Days event will be included workshop, an O2O educational platform and a real case technique forum. The PO will ensure that 100% of the representatives from APEC economies to participate the workshop. Besides, researchers, experts, the managers of private sectors, and stakeholders for sustainable renewable energy will be invited to the event. The 3-Day event (workshop, offline final pitch of the O2O Educational platform and real case forum) interlocks with the concept of smart power management for self-sustain green energy in APEC region.

a. **Workshop:** The workshop delivers the lectures' research expertise, experiences, and consultations, which includes green energy, empowerment community, human resources...etc to the participants among APEC regions. Five of speakers are also the juries for the O2O education platform. And as well, they will give the team participants some suggestions and inspirations for the next day of final pitch. After the event, we hope that the participants can develop the application of smart power management system for domestic circumstance.

b. **Final Presentation of Training Program:** After the online preliminary and semi-final round, the committee of ACABT invites ten academic and business specialists of green economy across APEC economies to be the juries. The juries will score and vote to select to the best top 8 teams to the final pitch. Besides, they will also give suggestions and tutorial during the workshop to motivate and encourage the team members. Also, in the last

day of the event, the real case technique forum implements the operation demo to all the participants.

- c. **Real Case Technique Forum:** It is a real-site learning. In the forum, we will arrange a real case technique forum discussing the practice of smart power management system software to demonstrate the software at one of the demonstration site in Bangkok. In the forum, it will be conducted project experiments and show one practice model for disseminating the smart power management system software in the APEC region.

- (3) **Project Report:** The final project report will constitute the record for the 6 months O2O education platform, the result of 3-Day Event, and a guidebook of the smart power management system software. It will be produced highlighting the recommendations to develop an energy management system into a bioenergy-based smart power grid and to enhance a science-based collaboration framework among the APEC economies to advance bio-economy, corresponds to the strategies stated by the APEC and will definitely contribute to the innovative and sustainable growth. ACABT will produce the guidebook, which is the manual of the smart power management system software and the information and notice of the case study.

3. Milestone Payments Schedule

The project should be carried out in the following 3 stages within 9 months from February 1st, 2018 to October 30th, 2018.

TASK	DELIVERABLES	TIMEFRAME
Task 1	Conducting O2O educational platform. <ul style="list-style-type: none"> • Set up the website of O2O educational platform and announce the registration procedures and regulation of O2O educational platform. • Start registration & preliminary round. Each team uploads two pages of the preliminary plan that matches with the requirements of competition. Due on Mar. 15 • Announce the teams enter the semi-pitch. Start semi-pitch Module 1 and Module 2. 	4 months (February 1-May 30)
Task 2	Conducting the 3-Day Event <ul style="list-style-type: none"> • Invite speakers from China, Indonesia, Japan, Korea, Malaysia, Chinese Taipei, Thailand, Viet Nam • Organize, prepare and arrange 3-day Event (expert 	3 months (June 1-August 31)

	meeting, workshop, O2O educational platform and real case technique forum)	
Task 3	Disseminate project findings in APEC region. All information relating to project activities will be simultaneously released on the website and a summary report including all scientific data from the project will be submitted to the APEC Secretariat and APEC PPSTI.	2 months (September 1-October 30)

4. Short-term Clerical

Two short-term clericals are needed for the APEC funding project. Each General duties and payments are listed below.

NO	Clerical	General duties	Hours	Rate (USD/hour)	Total Payment
1	Secretary (2018/2/1-10/30)	<ol style="list-style-type: none"> 1. Prepare and serve a 3-Day Event in August in Bangkok, Thailand. It includes speakers inviting, venue organizing and setting, and all the paperwork/data collecting. After the event, the project report must be done. 2. Set up the website of O2O educational platform, announce the regulation and registration procedures, and invite the jury members to choose the teams entering to the semi-final and final round. 	400	20	<p>8,000USD</p> <p>Task 1-4000USD Task 2-3000USD Task 3-1000USD</p>
2	General staff (2018/6/1-10/30)	<ol style="list-style-type: none"> 1. Prepare and serve a 3-Day Event in Bangkok. 2. Assist to arrange the event, collect the data for project reports and apply for reimbursement. 	200	20	<p>4000USD</p> <p>Task 2-3000USD Task 3-1000USD</p>

5. Contact

Project Overseer

Prof. Dr. Shu-Yii WU

CEO of APEC ACABT

Dean of College of Engineering, Feng Chia University, Chinese Taipei

No. 100, Wenhwa Rd., Seatwen, Taichung City 40724, Chinese Taipei

E-mail: sywu@fcu.edu.tw

Tel: +886-4-2451-7250 ext. 3679 Fax: +886-4-35072114

Project Secretary

Ms Claire CHEN

APEC ACABT

No. 100, Wenhwa Rd., Seatwen, Taichung City 40724, Chinese Taipei

E-mail: claire.apecfcu@mail.fcu.edu.tw

Tel: +886-4-2451-7250 ext. 6222 Fax: +886-4-35072114