

TERMS OF REFERENCE (ToR)

Project Number & Title:	PPSTI 06 2019A – Green Synergy Solutions in APEC Region
Project Overseer's Contact Details:	Shu-Yii WU Chief Executive Officer, APEC Research Center for Advanced Biohydrogen Technology (ACABT) Email: sywu@fcu.edu.tw
Contract Value:	US\$16,196 for Contractor fee (included several assistants fee) Nil reimbursable costs

BACKGROUND

The “Green Synergy Solutions” purposed promoting sustainable growth by integrate the heat and hydrogen storage from renewable energies, and then convert to electricity, and apply to the smart grid system for solving the significant uncertainty of solar and wind power issues in APEC Region. There are many forms of renewable energies such as solar, wind, hydropower, biomass and so on. In the APEC economies, they develop and expands the green power generation which transfers the electricity to smart grid control or by using the batteries storage with the high costs. Therefore, the project proposes Green Synergy Solutions that integrate renewable energy with heat and hydrogen storages without battery system, and then apply to the smart grid with low costs. In order to enhance the capacity building, this project conducts the Green Synergy Solutions events, included Policy Dialogue, Workshop, Offline Project-based Training Program and Technical On-site Practice, to provides the opportunity for networking and collaboration platform to promote the green technologies and low carbon strategy. Apart from this, the participants have chances to interact face-to-face, bilateral exchange current research developments and sharing the knowledge on relevant fields such as material science technology, renewable energy technology, smart grid technology, social science, environment and circular economy, to enhancing access to affordable, sustainable, reliable, clean energy and technologies in APEC Region.

The objectives of the project are as follows:

- I. To conduct the Green Synergy Solutions events included Policy Dialogue, Workshop, Offline Project-Based Training Program and Technical On-site Practice in Chinese Taipei. The project will be expanding the STI-based collaboration framework, approach with Green Synergy Events, Short-term Training Course and International Networking, to promote the Green Synergy Technology and toward sharing the knowledge of technology.
- II. To solve the problems of the energy security by extending a STI-based collaboration framework between academia, research institute and private sectors through the events.
- III. Offers a new policy strategy by integrating science, technology and innovation with APEC regional collaborating framework.
- IV. Improve the dissemination effect and further connectivity of these technologies and cross-fora with EWG or EGNRET by APEC System.

Towards project *output*, the project aims to provide capacity building support for the following beneficiaries:

This project aims to enhance an existing STI-based collaboration framework among academia, research institute, private sectors and to conduct the events included policy dialogue, workshop, offline project-based training program and technical on-site practice on Green Synergy Solutions. **Due to COVID-19 pandemic, for those who unable to attend the offline practical meeting (full in-person meeting at Chinese Taipei), the participants are welcome to join the virtual meeting (in-person with/without remote access), the project will provide the administrative circular beforehand.** The tentative agenda and outputs of this project as below:

Tentative Agenda	Participant
Day 1: Policy Dialogue	APEC PPSTI and/or EWG Delegations (included Policymakers), Invited Speakers and Experts, and ACABT steering committee members.
Day 2: Workshop	APEC PPSTI and/or EWG Delegations (included Policymakers), Invited Speakers and Experts, Young Entrepreneurs from academia, research institute and private sectors.
Day 3: Offline Project-Based Training Program	Reviewer (Invited Speaker and Experts), Young Entrepreneurs (included students, postgraduate and team leaders)
Day 4: Technical On-Site Practice (Self-Fund)	Reviewer (Invited Speaker and Experts), Young Entrepreneurs (included students, postgraduate and team leaders)

The following is the tentative discussion topics/area for Green Synergy Solutions events.

Tentative Agenda	Discussion Topics/area
Day 1: Policy Dialogue	Energy Awareness, Economical Appraisal, Energy Conservation, Circular Economy, Energy Policy, Hydrogen Economy, Energy Innovation Strategy, etc.
Day 2: Workshop	Divided in two sessions, such as Green Energy Technology and Sustainable Development, topics are Bioenergy, Bioprocesses, Energy Management System and New and Renewable energy, etc.
Day 3: Offline Project-Based Training Program	The young entrepreneur will submit the initial project plans in related fields such as Bioenergy, Bioprocesses, Energy management system and New and renewable energy which linkages with the theme of events. After reviewing by reviewer, selected 2 to 3 teams from each APEC member economies to involve in the online project-based training program via online (http://140.134.87.61:3838/fcu/YES2020/course/). The online training program will include the module 1 and module 2 learning cases study, such as “Discovery the problems and identifying the stakeholders in Manado City, Indonesia” and “Using decentralization bioenergy system to lead the sustainability community revitalization for rural area” that source from the implemented project. At the stage of the online training program, the project will conduct the reviewing process by the reviewer and selected 1 to 2 teams to attend the Green Synergy Solutions events such as Workshop, Offline Project-Based Training Program and Technical On-Site Practice (Self-Fund) in Chinese Taipei.
Day 4: Technical On-Site Practice (Self-Fund)	It is an existing smart solutions system that builds on Dongshi Hakka Cultural Park and collaborates with the local community in Dongshi, Taichung. The smart solutions system is a system that promoting the green synergy and circular economy by using the animal manure and animal wastes, to produce energy and Bio-Fertilizer after fermentation process to support the fruit farm. Meanwhile, fruit wastes could produce bio-char for the animal wastes treatment process.

I. OBJECTIVES OF THE WORK

The selected contractor shall be responsible for:

- 1. Implementation on Green Synergy Solutions Events, Events Summary Report, Project Report, draft APEC Project Completion Report and related deliverables:** The Events will be designed to provide digestible information for policymakers and experts about planning and implementing green synergy technology, energy efficient and relevant policies. The events have three main objectives: i) To share with other economies in the region (and beyond) to promote replication; ii) To provide the information or materials for policymakers and experts on the related topic that is globally accessible; and iii) To offer a complete suite of information in different formats – from high-level overviews to detailed information.

II. SCOPE OF WORK

The contractor will lead the delivery of the project’s objectives and outputs as highlighted above and detailed in the Project Proposal for Project PPSTI 06 2019A. Below is the scope of work:

1. Implementation on Green Synergy Solutions Events, Events Summary Report, Project Report, draft APEC Project Completion Report and related deliverables

The contractor will arrange, control, execute and complete the whole Green Synergy Solutions Events. After the Green Synergy Solutions Events, the contractor will complete and deliver the Events summary report, Project Report, and draft the APEC Completion Report to PO in the timeline.

Ensure that will have a 50% goal is targeted for women’s participation in the Policy Dialogue and Workshop both as speakers and participants, the criteria is based on Innovation and Technology, that women have the same opportunities as men to benefit from and participate in development and implementation of scientific advances and new technologies.

The Project Report shall be produced for publication as an APEC Publication.

General Project Management

The Contractor will be required to provide project management and submit reporting to the PO, according to the project proposal and guidebook on APEC projects. Responsibilities include:

- Liaising closely and working in collaboration with a PO in performing the works in the contract;
- Keeping the PO informed of progress of the work, timelines and budget;
- Assisting the PO to manage and mitigate the risks as identified in the Project Proposal;
- Ensuring all participants, including experts and speakers, are briefed on their roles, entitlements and obligations before they are engaged to attend an event or participate in a project; and
- Collecting and providing all necessary information as required by APEC fora (particularly PPSTI and EWG) and the APEC Secretariat to monitor the progress and evaluate the results of a project.

III. DURATION AND PHASING

Work shall commence no earlier than 15 September 2020 and is expected to be completed by 15 March 2021.

Summarized Objectives	Activities	Outputs
Implementation on Green Synergy Solutions Events, Events Summary Report, Project Report, draft APEC Project Completion Report and related deliverables	<i>Timeframe: Preparation phase up to December 15, 2020</i>	
	<ul style="list-style-type: none"> • Arrange and prepare the Green Synergy Solutions events included technical on-site practice and engage experts and stakeholders in an open discussion (for example steering committee meeting) on associated topics and organize the Green Synergy Solutions events include policy dialogue, workshop, offline project-based training program and technical on-site practice (self-fund) and submit the monitoring report. 	<ul style="list-style-type: none"> • Agenda created • Teams Young Entrepreneurs selected

Summarized Objectives	Activities	Outputs
	<p>Select the 10 team's young entrepreneurs to involve in the Green Synergy Solutions events included a workshop, offline project-based training program and technical on-site practice (self-fund) in Chinese Taipei.</p>	<ul style="list-style-type: none"> • Teams Young Entrepreneurs selected
	<p>Invite professionals, private sector experts, representative of member economies and participants from APEC region, and Non-APEC members also in consideration for sharing the experience such as from OECD to involve in Green Synergy events included policy dialogue, workshop, offline project-based training program and technical on-site practice (self-fund) in Chinese Taipei.</p>	<ul style="list-style-type: none"> • Professionals, private sector experts, representative of member economies and participants from APEC region, and Non-APEC members invited to join the Green Synergy Solutions events.
<i>Timeframe: December 16 - December 21, 2020</i>		
	<p>Conduct Green Synergy Solutions events in 4 days Day 1: Policy Dialogue The APEC PPSTI and/or EWG Delegations (included Policymakers), Invited Speakers and Experts, and ACABT steering committee members. provide their perspective and policy recommendations on Green Synergy Solutions to all APEC economies.</p> <p>Day 2: Workshop The project will invite APEC PPSTI and/or EWG Delegations (included Policymakers), Invited Speakers and Experts, Young Entrepreneurs from academia, research institute and private sectors to sharing their knowledge and perspectives and involvement in the panel discussion sessions as well. This is the best practice and experience exchanging to build the capacity building.</p> <p>Day 3: Offline project-based training program As of capacity building is a long term continuous process and must always prepared to take action on new issues that arise, hence, the project encouraged the young entrepreneurs to proposed the green synergy solutions ideas by the online and offline project-based training program, for not only tackling</p>	<p>Day 1: Policy Dialogue implemented Day 2: Workshop implemented Day 3: Offline Project-based training program implemented Day4: Technical on-site practice (self-fund) implemented</p>

Summarized Objectives	Activities	Outputs
	<p>affordable energy, climate change and community problems but also promoting sustainability awareness in the APEC region.</p> <p>Day 4: Technical on-site practice (self-fund)</p> <p>After the back-to-back meeting, the project will arrange technical on-site practice for discussing the practice of smart solutions system. Within the on-site practice experience, it could be conducted project experiments and show the best practice model for developing and disseminating the smart solutions system in the APEC region.</p>	
<i>Timeframe: December 22, 2020 – March 15, 2021</i>		
	<ul style="list-style-type: none"> • Collect related documents and analysis data of survey questionnaire to PO • Complete and deliver Green Synergy Solutions Events Summary Reports to PO • Complete and deliver Project Report to PO, as endorsed by PPSTI, EWG members, and the APEC Secretariat for publication by contractor. • Disseminate the annual Longer Term Evaluation of APEC Projects (LTEAP) to all participants 	<ul style="list-style-type: none"> • Collected related documents and analyzed the data of survey questionnaire (e.g. PowerPoint presentations with detailed notes; Policy brief on sub-topics, etc.) to PO • Submitted Green Solutions Events Summary Reports by PO to APEC Secretariat • Submitted Project Report by PO, endorsed by PPSTI, EWG members, and the APEC Secretariat • Project Report approved and published.

TABLE OF ALL CONTRACTOR DELIVERABLES

#	Deliverables	Due Date
1	Professionals, experts, representative of member economies and participants from APEC region, and Non-APEC members invited to join the Green Synergy Solutions Events	31 October 2020
2	Green Synergy Solutions Events-related deliverables	
a.	Event Timeline	8 weeks before planned event
b.	General Information Circular (GI)	8 weeks before the planned event
c.	Ensure that the policy framework review drafted	8 weeks before the planned event
d.	Proposed Policy Dialogue/Workshop Speakers and Participant list	8 weeks before the planned event
e.	Ensure that the policy researched	2 weeks before the planned event
f.	Test Run Virtual Meeting with invited speaker/participant that unable travel	Before event
g.	Final Agenda (and circulates to all participants)	Before event
h.	Disseminate the annual Longer Term Evaluation of APEC Projects (LTEAP) to all participants	On the day of event
i.	Complete and control each event	On the day of event
j.	Complete and collect the survey questionnaire	On the day of event
j.	Ensure that the policy recommendations developed	Not more than 3 working days after the event
k.	Full Events attendance	Not more than 3 working days after the event
l.	All Events presentations and related documents	Not more than 3 working days after the event

	m.	All Events survey questionnaire data and result	Not more than 3 working days after the event
3		Complete and Deliver Green Synergy Solutions Events Summary Reports to PO	Not more than 3 working days after event
4		Complete and Deliver Project Report (more than 30 pages in length) to PO	Before 10 January 2021
5	Project Management		
	a.	DRAFT: APEC Project Completion Report to PO	15 February 2021
	b.	Remind and disseminate the annual Longer Term Evaluation of APEC Projects (LTEAP) to all participants	10 March 2021

PROPOSED MILESTONE AND PAYMENT SCHEDULE

Number Staff to be contracted	Milestone Deliverable	Means of Verification	Expected Due Date	Payment Schedule (US\$, inclusive of tax)
1 (Events Secretary)	Completion of all Green Synergy Solutions Events-related deliverables by Events Secretary (Contractor)	Written acceptance and certification by the PO	15 January 2021	US\$4,600
	Assistance and completion of all Green Synergy Solutions Events by several assistants			US\$6,400
	<ul style="list-style-type: none"> ● Complete and Deliver Project Report to PO, as endorsed by PPSTI, EWG members, and the APEC Secretariat for publication by Contractor. ● Draft APEC Project Completion Report-related deliverables to PO by Contractor. 	Written acceptance and certification by the PO. Endorsement by PPSTI, EWG. Acceptance by the Secretariat.	15 March 2021	US\$5,196
Total Value (including Tax) : US\$				US\$16,196

A total of US\$16,196 (included several assistants fee) will be paid for the contracted tasks listed In the ToR. This amount is inclusive of income taxation, annual bonus, labour and health insurance fees. The expected due date of payment as stated as above and follow the Guidelines of Guidebook on the APEC Project.

SPECIFICATIONS OF SKILLS SETS AND EXPERIENCE

Skills and experiences required from contractors shall be:

1. Demonstrated project-management capability, including event organization and oversight.
2. Capacity for producing events guidance and undertaking the necessary research required; and
3. Strong command of English (written and spoken) and strong report development skills.

REPORTING REQUIREMENTS

A. Green Synergy Solutions Events Summary Reports

Green Synergy Solutions Events Summary Report shall be no more than 15 pages in length and contain:

1. Title Page
2. Table of Contents, Glossary and acronym list
3. Key outputs
4. Key outcomes compared with objectives
5. Overall Impact and lessons learned
6. Conclusions

B. Project Report

The Project Report shall be more than 30 pages in length and contain:

1. Title Page
2. Table of Contents, Glossary and acronym list
3. A supporting document with references to videos and links to relevant websites
4. Videos of the webinars accessible on YouTube
5. A policy framework reviewed, policy researched and policy recommendations developed.
6. Reference to tools and methodologies
7. Key outputs/outcome/benefit
8. Key outcomes compared with objectives
9. Overall Impact and lessons learned
10. Conclusions

The Project Report will be APEC Publications. Items for publication must be prepared in accordance with the Guidebook on APEC Projects, APEC Publication Guidelines and APEC Logo Guidelines. The items must be certified by the PO and must be endorsed by PPSTI, EWG members and approved by APEC Secretariat before they can be published. Reports submitted to the APEC Secretariat must not require any further copy-editing and reflect a level of English fit for publication.

C. Project Completion Report

Draft the Project Completion Report to PO and contain all of requirement content, included the data and result of survey questionnaire.