

Japan-ASEAN Science, Technology and Innovation Platform (JASTIP)

Report of JASTIP-Net Activity

Date: / /

1. Research partner	Affiliated Organization		
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	Position	Professor	
	Address	UMPEDAC Level 4, Wisma R&D UM, Jalan Lembah Pantai Baharu, 59990, Kuala Lumpur	
2. Collaborative research	Collaborative research theme	Headquarters ☐ To Develop Operational Linkages and Human Resources among Academic Sector, Government Agencies, and Private Sectors in ASEAN countries and Japan. ☐ To Introduce Various STI Collaborations for Effectively and Efficiently into the Society based on the three joint laboratories' activities. Energy & Environment Joint Lab ☒ Studies on Rural/Community Renewable Energy. ☐ Development of Renewable Energy Technology adapted to the ASEAN region. ☐ Studies on Energy Policy/Security in the ASEAN region. Bioresources & Biodiversity Lab	

		☐ Studies on Biodiversity in the ASEAN Region Contributing to the Improvement of Identification, Collection and/or Information. ☐ Sustainable Utilization of Bioresources for Biorefinery, Bioremediation, Wood Construction, Food or Medicine. ☐ Plant Improvement for Agroforestry Systems and Carbon Sequestration Contributing to the Mitigation of and/or Adaptation to Climate Change. Disaster Prevention Joint Lab ☐ Innovative Ideas on Disaster Prevention, Mitigation and Recovery Technologies and Policies Peculiar to Each ASEAN Country. ☐ How to Cope with Trans-Boundary Disasters in the ASEAN Region Such as Tsunami, Flood, Drought and Haze. ☐ Understanding and Quantitative Evaluation of Disaster Risks Peculiar to ASEAN Countries.
	Collaborative research title	Study on Energy Usage and Quality of Life for Rural Community Through Rural Electrification using Renewable Energy
	Host core-researcher	Hideaki Ohgaki

3. Members

Name	Che Hang Seng		
Affiliation	UMPEDAC, University of Malaya	Position	Senior Lecturer, Dr.
Name	Wallace ShungHui Wong		
Affiliation	Swinburne University of Technology Sarawak (SUTS)	Position	Professor, Dr.
Name	Hideaki Ohgaki		
Affiliation	Kyoto University	Position	Professor, Dr.
Name	Hooman Farzaneh		
Affiliation	Kyoto University	Position	Junior associate professor
Name	Mohd Amran Mohd Radzi		
Affiliation	Universiti Putra Malaysia	Position	Associate Professor

4. Report of activities

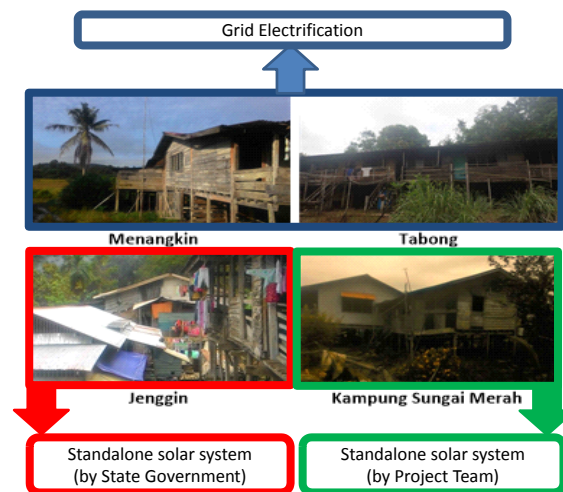
Please describe 1) research activities and major findings and 2) their academic and social implications toward achieving the SDGs within 2 pages. You can include tables, figures and photos if necessary.

Activities Conducted

In this project, the different rural electrification schemes in four different rural villages have been considered. The rural electrification schemes considered include both grid electrification, as well as standalone solar systems installed by State Government and by Project Team.

The following activities have been conducted during the project duration:

1. Interview with the villagers from the four selected villages on the Quality of Life (QoL) before electrification.
2. Installation of 5 Solar Home Systems (SHSs) in Kampung Sungai Merah.
3. Installation of 1 unit of data logger on one of the SHS in Kampung Sungai Merah.
4. Interview with the villagers in Kampung Sungai Merah after installation of 5 SHS.



Major Findings

1. Based on the site surveys conducted, it was found that there are serious sustainability issues related to existing rural electrification projects. Most installed system failed after few years due to lack of maintenance and/or mishandling.
2. The project team believes that creating ownership among the local community with respect to the electrification system is critical in ensuring the sustainability of the system.
3. The lack of technical training, hence technical know-how, on the electrification system causes system to fail prematurely. Training on handling and minor repair work is important.

Relevance towards UN-SDGs

United Nation (UN) Sustainable Development Goals (SDGs) from 2015 after the Millennium Development Goals (MDGs) clearly highlight “Energy issues” resulting in the promotion of electrification in the developing countries. However, 1.6 billion people (2010) have been away from the clean energy services in the world.

The worldwide efforts are spent with big investments. In Malaysia, government also promotes rural electrification especially in Borneo island. However, we observed many failure of renewable energy projects which used almost same technology as the succeeded projects. This study aims to find the effective approach of implementing rural electrification by survey on the differences and/or similarities between the energy usage pattern and life style of the villages under different rural

electrification schemes.

5. List of publications

Example of description: Navaporn Kaerkitcha, Surawut Chuangchote and Takashi Sagawa, "Control of physical properties of carbon nanofibers obtained from coaxial electrospinning of PMMA and PAN with adjustable inner/outer nozzle-ends," *Nanoscale Research Letters*, 11(1), 1-9, 2016

Hideaki Ohgaki, Hooman Farzaneh, Nasrudin Abd Rahim, Che Hang Seng, Mohd Amran Mohd Radzi, Wallace ShungHui Wong, Lai Chean Hung. Study on Quality of Life Change for Rural Community through Rural Electrification by Renewable Energy: Preliminary Result" *ASEAN Journal of Management and Innovation AJMI*, 4(2), 2017

6. List of oral presentations

Example of description: Worasuwannarak N, Wannapeera J, Jadsadajerm S, and Miura K. Upgrading of rice straw and leucaena by degradative solvent extraction using 1-methylnaphthalene and kerosene at 350 oC. The 21st International Symposium on Analytical and Applied Pyrolysis, Nancy, France, 9-12 May 2016.

Hideaki Ohgaki, Hooman Farzaneh, Nasrudin Abd Rahim, H.S.Che, Mohd Amran Mohd Radzi, Wallace ShungHui Wong, Lai Chean Hung, "Study on Energy Usage and Quality of Life Change for Rural Community through Rural Electrification by Renewable Energy : Preliminary Result", 6th INTERNATIONAL SYMPOSIUM ON THE FUSION OF SCIENCE AND TECHNOLOGIES (Jeju-si, Korea, July 18, 2017)

Hideaki Ohgaki, Hooman Farzaneh, Nasrudin Abd Rahim, H.S.Che, Mohd Amran Mohd Radzi, Wallace ShungHui Wong, Lai Chean Hung, "Study on Life Style Change in Rural Community by Renewable Energy Electrification: preliminary result in Sarawak, Malaysia", 6th World Conference on Applied Sciences, Engineering and Technology (Universitas Muhammadiyah Ponorogo, INDONESIA, August 26, 2017)

Impact of Solar Home System on Change of Quality of Life in Rural Community in Sarawak, Malaysia