

KYOTO UNIVERSITY-UNIVERSITY OF MALAYA (UMPEDAC) COLLABORATION PROJECT RURAL ELECTRIFICATION IN MENYANG TAIS, SARAWAK



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RURAL ELECTRIFICATION IN MALAYSIA

1. Rural development in Malaysia has taken place since independence in 1957.
2. The efforts was strengthened by launching of Economic Policy (NEP) in 1971 and also a guidance of Outline Perspective Plans (OPP).
3. Three OPP's have been implemented guided consecutively by the philosophy of the New Economic Policy (NEP 1971-1990), the National Development Policy (NDP 1991-2000) and the National Vision Policy (NVP 2001-2010).

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Pictures Overview on Rural Electrification in Malaysia

Solar hybrid power-generation station, Kampung Pak Kaleh, Pulau Pemanggil



Sek. Keb. Tudan, Sabah



Sek. Keb. Panginatan, Sabah

SK Paginatan



SMK Wallace Bay



The Challenge of Rural Electrification

- 1) Lack of financial resources to cover the investment costs.
- 2) Urban technical standards is not suitable for rural area.
- 3) The difficulties in bringing electricity to rural areas are formidable.
- 4) Low population densities result in high capital and operating costs.
- 5) Consumers are often poor, and their electricity consumption is low.
- 6) To educate the local people about rural electrification systems maintenance.

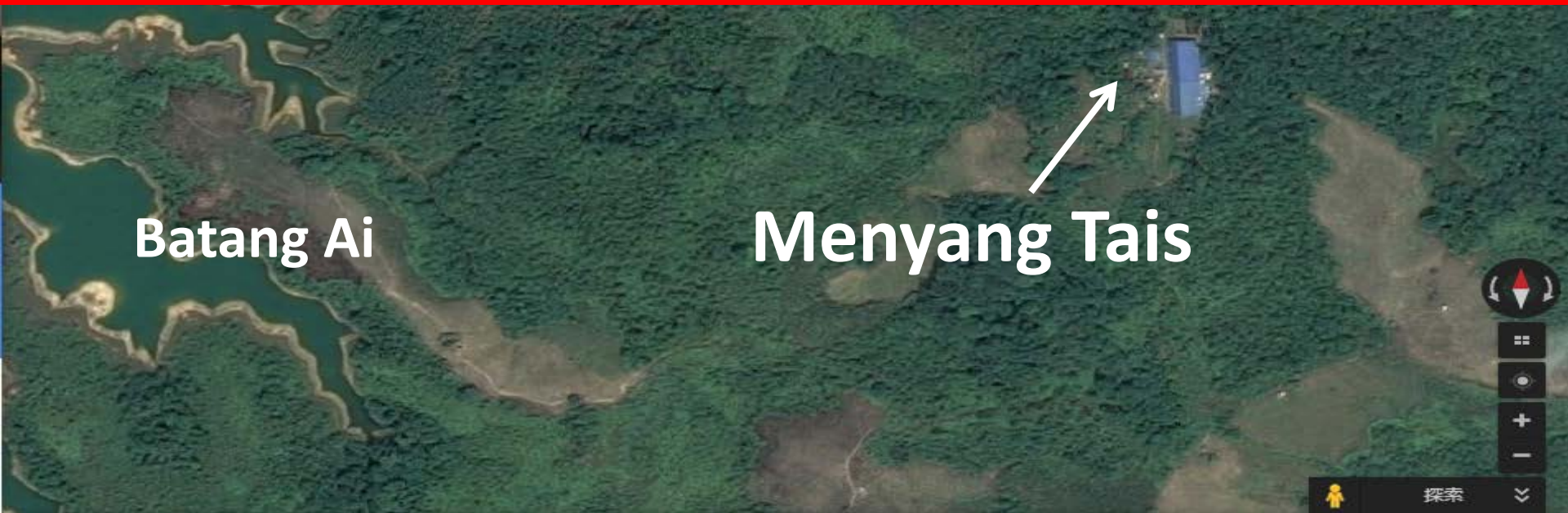
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COLLABORATION PROJECT RURAL ELECTRIFICATION IN MENYANG
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- The Long House consisted of 12 households, with approximately 5-6 persons per household.
- Based on the first visit conducted in 2015, the villagers have been using diesel generator for electricity. Due to the remote location of the Long House, the cost of fuel is expensive.
- At the stage, a 5kWp PV system with 5kWh battery storage system will be installed, to provide lightings to the Long House occupants and to allow the usage of some small electrical appliances.
- A separate proposal will be prepare to extend the system to include a “pump storage hydro generator system”, which allows excessive solar power to be stored in the form of water potential energy in a water storage facility at a high point in the village. At night, the water will be released at a lower point and the energy is harvested through a hydro generator.
- To educate Iban community energy users through awareness or information dissemination and maintenance know-how.

BATANG AI SARAWAK



MENYANG TAIS AT BATANG AI SARAWAK



The Villagers

- Iban community with 12 households, approximately 70 inhabitants .
- Work as farmers & forest gatherers; occasionally involved in tourism to provide accommodation and jungle guide services.
- One head of community (Tuai Rumah) in each Long House



Energy Sources

- Uses gasoline/diesel genset for electricity.
- Limited hours of electricity due to high fuel cost and frequent breakdown of gensets.



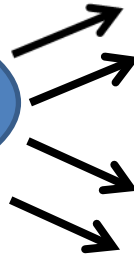
RENEWABLE ENERGY IMPLEMENTATION



Implement a standalone PV solar system with battery storage

+

Future: expand with pico-hydro generator system



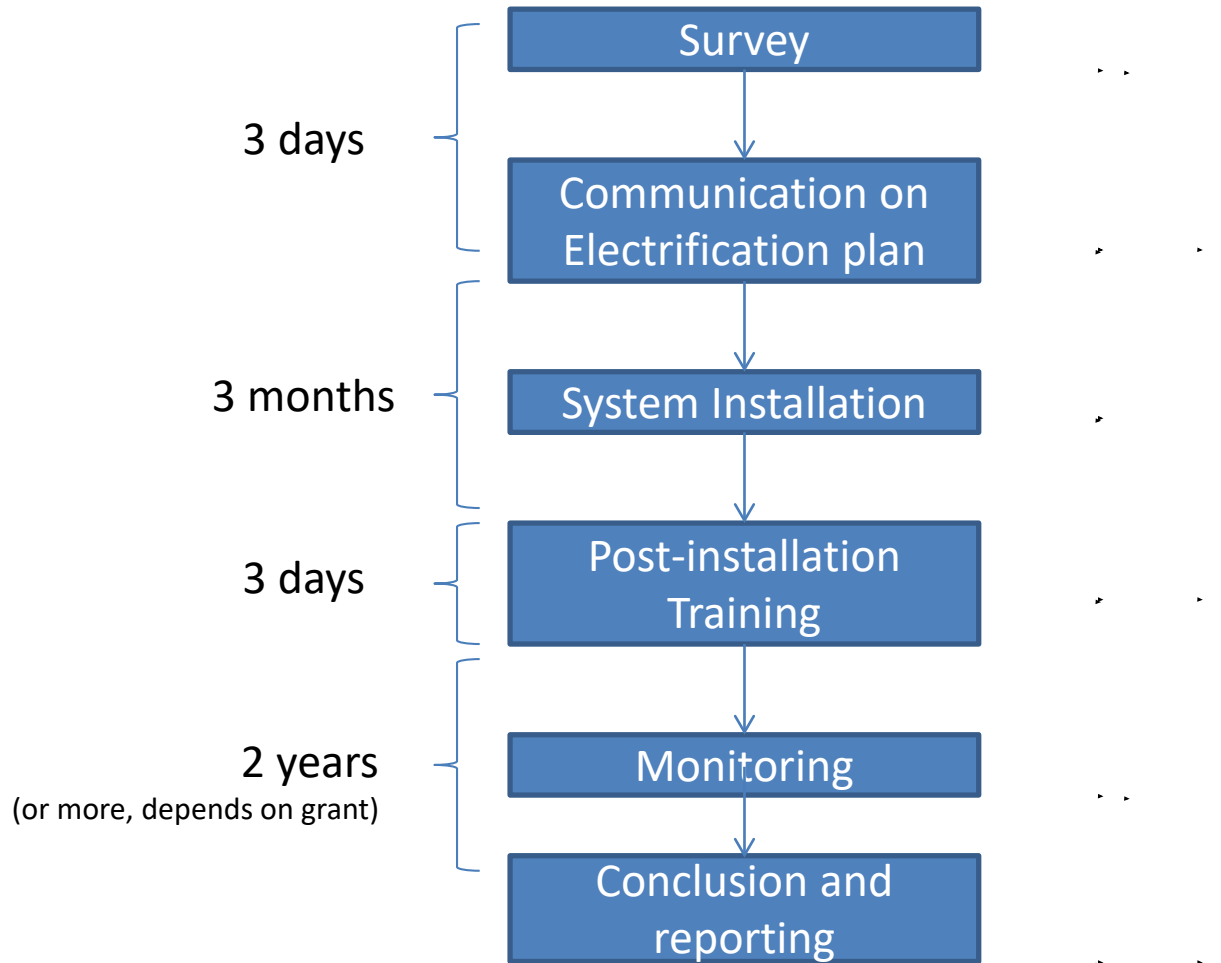
Impacts to social and cultural practices after electrification

Impacts to economical activities and gains after electrification

Sustainability of the RE system through demand and supply management

Expandability of the RE systems to other similar rural communities

PROJECT METHODOLOGY



CONCLUSION

- Number of RE installation is increasing by year, and projected to improve further.
- The country is supportive of the PV expansion agenda – FiT, RE Act, NREPAP, so on.
- The RE cluster mapping in Malaysia provides a holistic approach in building a cost-competitive, sustainable industry.
- PV Manufacturers (Module Supply Chain), BOS and System Integrators of PV systems – all players located along the entire value chain.
- Supporting industries are instrumental for the development and upgrading of the RE cluster, in creating a cost-competitive manufacturing base.
- Close collaboration with R&D, education/ universities and PRIs, industry associations, and utilities operators is crucial for creating an enabling environment for the RE cluster.
- The role of the Government has been crucial in crafting the NREPAP & RE Act to expand domestic PV market, promote FDI & create an enabling regulatory & legal framework for the growth of MNCs/ local industry.

