INTEGRATED VILLAGE ENERGY SYSTEM

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In recognition of the Philippine Government's concern to uplift the living standards of people in rural communities, the Energy Research and Development Center (ERDC) of the Philippine National Oil Company (PNOC) with funding from the United States Agency for International Development and The Non-conventional Resources Division of the Bureau of Energy Development, Ministry of Energy, initiated a project called the Integrated Village Energy System (IVES). The project primarily aims to promote energy self-sufficiency in rural villages.

The project consists of three phases. The initial phase, the Project Definition Phase, covers site selection, identification of suitable technologies based on the needs of the people and the available resources in the area, systems engineering, and community development activities. The criteria for site selection include, among others, no immediate plans for electrification.

Pinamuk-an Island, a village in New Washington, Aklan was chosen as the site of the IVES project, having satisfied the above criteria. While basically a fishing community, the island has ample natural resources which are potential sources of non-conventional energy. More than half of its total area is devoted to coconut, while another 50 hectares are planted with nipa, a potential source of alcohol.

In March, 1982, PNOC-ERDC entered into an agreement with the Samahang Nayon of Pinamuk-an for the implementation of the project. After identifying the basic requirements of the village — safe drinking water, income generating activities, roads and means of transportation within the island, electricity and sanitation, the project team established supportive community development projects in the area. Demonstrations and training seminars, specifically on cottage industries feasible in the island, were conducted.

On Jun 11, 1983, the IVES Training and Demonstration Center was blessed and inaugurated. The Demo House was constructed mainly out of coconut lumber and nipa, among others. It will serve as the site for training, conferences and seminars and a display area for prototype models of non-conventional energy technologies. Coinciding with this was the corner-stone laying for the producer gas-powered ice plant, signifying the start of Phase II of the project, the Implementation Phase. Selected alternative energy systems will be introduced, constructed/installed and field tested during this phase.

A 30-kw gas producer system will be designed, fabricated, installed and operated to supply the power requirements for lighting and probably for cottage industries of

the island. Power will be generated from coconut shell charcoal and eventually, the system will be fuelled by uncarbonised agricultural/forestry wastes.

Also being considered is the installation of a biomass powered ice plant which will be partially run by a gasifier system. The design of the plant will be based on the resources and capabilities of the residents. Existing biomass resources can support an ice plant with a capacity of 2–4 tons of ice per day. A turnover scheme will be formulated to ensure profits generated by the ice plant, for the people.

The initiation of livelihood projects, an organisational development and training programme and various human resources development activities will be undertaken in Phase II.

Phase III, Operational Phase, will focus on techno-economic evaluation and social impact analysis of the technologies introduced in the community. Continuous monitoring of individual technologies will be made. Applied research activities will be done continuously throughout the project duration in order to eliminate or reduce technical problems, overcome climatic factors, decrease maintenance, and simplify operating procedures.

If successful, the project will be replicated in other islands of the country.