

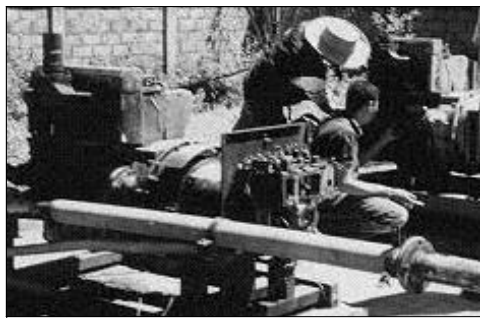


Kangaroo Valley – Remexio Partnership

Hydro Power for Remexio

In an earlier article I wrote about my idea for a micro-hydro system for the village of Asu Mau, and the difficulty of justifying such an installation where the water supply is so seasonal. The lack of an adequate year-round flow for the turbine has been the main reason we have not proceeded with the project.

Another reason for delay was not wanting our contribution to exclude Asu Mau from other aid that was on offer. The village previously had a power plant consisting of two 50 kW diesel generators. For 12 years, these had been run on alternate evenings for six hours from sunset, and provided lighting to about 250 houses in the village. When the militia stormed through Asu Mau in September '99, they destroyed these generators and the building they were housed in, but the poles and cables that carried the power through the village are still mostly intact.



Asu Mau's trashed generators

The government of Japan had offered to replace 17 of these power plants, and Asu Mau was on the short list. It's possible that setting up hydro power for the village could have meant the diesel plant went somewhere else. This would be fine if the hydro system could supply the needs of the village, but it would not.

Let's look at the options.

Running for six hours each night, the diesel generators would use around 75 litres of fuel and provide around 250 kilowatt-hours (kWh) of electrical power. This is in line with UN's rule-of-thumb of 1 kWh a day for each household in rural East Timor – about the amount most Australian households use in an hour. The relatively cheap cost of diesel in East Timor

(US\$0.25/litre) would give the 250 houses in the village a total fuel bill of A\$12,000 a year. This is only 14 cents for each kilowatt-hour – not much more than the 10 cents we pay here. When the new generators are in place, UNTAET will provide fuel and maintenance, but it won't be long before the villagers themselves will have to find the money, and the cost of fuel is likely to increase.

What about alternative energy?

Many people have asked whether *solar power* would be appropriate. Many remote locations (and some not so remote, like my house) use solar panels to generate electricity. These need batteries to store the energy collected during the day until it is used at night, and even bigger batteries to cover overcast days when solar power is low. One company has produced a small, self-contained unit consisting of a 60 Watt solar panel, a battery, a controller, a length of cable and three light globes. These cost US\$500 (A\$900), and are available to individual households in Africa for US\$8 a month. This would pay them off in five or six years – about the life of the battery used. The beauty of these units is that each household can be responsible for their own power, but the output is quite small. On a sunny day you could expect to get 0.3 kWh of energy, so the US\$8 a month (A\$14.50) buys about 9 kWh, or about A\$1.60 for each kilowatt-hour.

The *micro-hydro* system I had in mind for Asu Mau would cost about \$10-15,000 and produce a continuous 4 kW for about six months of the year when there is enough water flowing to keep it full. For another three or four months during the dry season, the output would be dropping, and for two or three months there may be no output at all. The total useable energy for the year could be 20,000 kWh. The hydro system could be expected to run for twenty years or more. Spreading the installation cost over, say ten to fifteen years at \$1,000 a year, the cost of the hydro energy is cheap at only 5 cents a kilowatt-hour. The trouble is – there's not enough of it. Even during the wet season, 4 kW would only supply power in the evening for 20 houses out of the 250. This could stretch to 80 houses if they used compact fluorescent globes instead of incandescent. Such globes would cost another \$2,500 initially, but should last five years and save \$4,000 a year in fuel. The main value of the hydro system would be the supply of day-time power which could open up possibilities for job-creating businesses that might not be possible without power. As a supplement in the evenings, it could reduce

fuel consumption, but in this area we should also look at the benefits of compact fluorescent globes for all houses. While I sit here, endlessly considering the options, Snr Pedro Mendonça, Chefe de Posto of Remexio, reminds me every now-and-again, that they are still sitting in the dark.

If you would like to help get this project off the ground, or could contribute to the deliberations, please get in touch.

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Keeping 'Nigel' on the Road

You may have noticed the donation jars in a few of the valley shops to collect your contributions to Nigel's running expenses. The people of Remexio are not yet able to generate the income they need to keep Nigel on the road as the only emergency vehicle to service 8,500 people spread over the whole subdistrict. As well as normal fuel and oil costs the vehicle needs some work done on the clutch at present, so all donations are most welcome.

Upcoming Visits

Maureen Magee is heading back to East Timor on 8th February for her third visit, followed shortly after by Louise Morgan then Jacinta Garrett. They have been learning Tetum so they can communicate with people in Remexio. Each visit is helping to consolidate the friendship. We hope all three have great trips, and look forward to a full report of their activities on their return.



The road to Remexio

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