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# Light up Atauro

## Or at least a glow in the village of Atecru



Peter and Lyndall Hulme travelled to Timor Leste as part of the ATA's Light Up Atauro project. The expedition was hosted by Timor Adventures and was a real adventure.



↑ Installing the panels on the school roof.

AFTER travelling in 4WD vehicles westwards through Liquaca, Balibao, we had overnight stays in Maliana, Atsabe and Gleno. As an example of how degraded the infrastructure is, the roads were horrendous and we averaged about 35km/h, constantly in 4WD.

It was interesting to see that solar panels were a common sight as we travelled through the country. What was even more surprising was that we saw solar panels and inverters for sale in the market at Atsabe, suggesting that sustainable electricity generation is valued by the population. It will be interesting to

see whether this continues, as a high-voltage network is starting to be rolled out across the country.

The main reason for our trip was to install a PV system at the primary school in Atecru, a small village on the island of Atauro, about 25km off the coast from Dili. Led by Michael O'Connell from the Alternative Technology Association (ATA), we travelled by boat across the Wetar Strait and stayed at Barry's Eco Lodge near Vila, an example of sustainable tourism in Timor Leste. The rooms were thatched bamboo huts, each with its own 12

volt lighting and cooling system powered by PV panels. There were composting toilets and ablutions were via a large tub of spring water! Refreshing indeed.

The school already had a 12 volt lighting system powered by solar PV/battery which had been installed by the Indonesian government some years ago. However, it was not functioning as the batteries had failed, as had the controller.

We began by discussing with the school's principal what was required. It was decided to reuse some of the existing wiring and to install two 3W, 12V LED bulbs in each of the school's three classrooms, and a single 5W, 12V LED bulb in the staff room. There would be a 240V outlet powered by a 300W inverter which would be enough to power a TV or charge mobile telephones. The system would be powered by two 85W panels.

We got to work with numerous willing helpers. We also had assistance from Filomeno, a young Timorese man who has finished the technical training developed by the ATA and is now an accredited solar installer, and is also bilingual (Tetun/English).

The actual installation did not take very long as we pre-wired the switchboard at Barry's Eco Lodge prior to our boat trip to Atecru, and we had a host of willing helpers to lift the panels onto the roof and run the wires and conduits. After the installation was completed Michael gave a group of villagers a briefing on maintaining and caring for the system, as well as its limitations.

That evening it was a joy to see the school lit up and the villagers using the building and surrounds as a venue to discuss the day's



↑ The switchboard for the new system (left) sitting next to the old switchboard.



↑ Helpers running cables from the classrooms to the staff room where the switchboard was being installed.

activity. This activity certainly opened our eyes to the situation in Timor Leste, one of the poorest countries in southeast Asia. We saw in graphic detail the damage done during the repercussions of the referendum for independence. It made us realise how much we take for granted our version of democracy.

The challenge ahead for the people of Atecru is to ensure the system is monitored and maintained. NGO Roman Luan, a community development organisation for the whole of the island, has been involved in this project so thought could be given to engaging them in sustainable development for the island.

What made this trip truly worthwhile was the warm welcome and acceptance we received from the villagers as we went about trying to make a difference to their lives. We thank them sincerely for letting us into their lives, albeit for a short time. \*



↑ The panels at the Atecru school before installation.

### A brief note on the Atauro solar system

The system in Atauro is typical of the larger systems that the ATA's International Projects Group installs in East Timor. As in all installations, proper system performance depends on having the right balance of equipment to meet the needs of the customer. It must be installed to a high standard and, just as importantly, maintained to an appropriate standard.

In recent times the ATA has changed its approach to the design of these stand-alone systems. This is mainly due to the rapidly falling prices of PV panels. Newer systems often have larger PV arrays, compared to a few years ago, together with slightly

smaller battery banks. This means that the PV array is capable of recharging the batteries successfully even in poor weather conditions and so the requirement for the batteries to hold several days energy is reduced. The result is a system that provides similar performance to those previously installed but for a lower cost. The system in Atauro is a good example of these new design rules, having higher PV wattage relative to the battery size.

To size the system, we determined the total energy and power requirements from the load requirements provided by the local community. The requirements included the

provision of lighting in three classrooms and the staff room, together with the provision of AC power in the staff room for a laptop, printer and phone chargers. The final system design incorporated two 12VDC, 3W LED lamps in each classroom and a single 12VDC, 5W LED lamp in the staff room. The staff room also housed a 300W inverter to provide AC power. No mains wiring was required and this simplified the installation considerably. The other core components of the system were 170W (2 x 85W) of PV panels, 200Ah of 12V batteries and a PL-20 20A regulator. For more info on the ATA's work in East Timor, see [www.ata.org.au/ipg](http://www.ata.org.au/ipg).