

RMI Solar Schools

Bringing Electricity to Six Outer Island Schools

The Logistics of the Operation

Perhaps the great challenge of the EDF 9 Solar schools project in the Marshall Is. is the logistics of getting all the PV equipment and other materials to each remote destination. Two of the school sites are on atoll islands that have no lagoons. These require that all the PV equipment, batteries, and battery house building material – cement blocks and bags of cement – are first placed in small open boats, and then taken ashore, where they are carried out by hand. Then, everything must be carried to the school, which is typically half a kilometer.



Carrying batteries up the beach at Namdrik

In addition, the remoteness of the locations means that support, such as the inevitable odd pieces of something that got left behind or forgotten, is at best tenuous. For example, at Ebon, whilst the MEC team was there a plane did visit, it was the first one for several weeks and then it broke down again and so never returned. Thus extreme care must be taken to make sure that everything that might be needed is included in the shipment. As each location is slightly different, this requires a fair degree of forethought (especially as it all has to be able to be carried up the beach wherever it gets to).



Loading the ship in Majuro

Where three deliveries are made from one ship, the problem is also to make sure that only those parts for that school are dropped at that island. To this end, each shipment is colour-coded, so that all the pallets and packages etc. for a certain school are marked with the same colour.

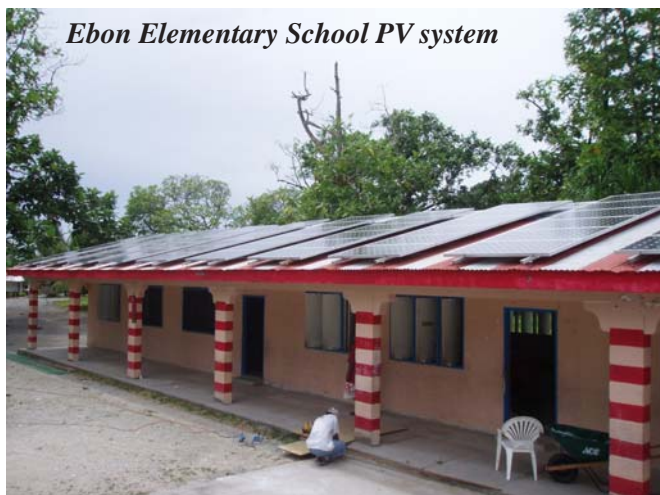
Additional constraint for the trip that delivered three systems to the southern schools was the addition of about 120 young people trying to get back to their islands after a large youth convention in Majuro, and food and fuel supplies for the island of Kili which was on the verge of running out of food and fuel.

In spite of these challenges, the local contractor, Marshall's Energy Company (MEC), has delivered materials to four sites, and the remaining two locations should receive their materials at the end of August. The MEC installers team went with the southern ship to complete the two installations at Ebon Atoll, and will reach the other sites either by aircraft or by chartering a much smaller vessel to take the team of ten and their tools to the schools.



Materials on the beach waiting to be carried, by local people, in handcarts to the school

Ebon Schools Solar Powered



Both of the Elementary Schools in Ebon now have electricity. During the last week of July and the first two weeks of August, the MEC solar technicians installed 10.7kWp of solar onto Ebon Ebon school, and 9kWp onto Toka School, across the lagoon. Ebon is the furthest south of the Marshallese atolls, and has an airstrip that can only take the smallest Air Marshall Is. aircraft, and as such suffers from infrequent outside visits.

The PV systems have the potential to change life dramatically for the school students and teachers, as previously, bigger electricity systems on these islands required generators that need regular fuel drops to

provide power (not that either school had a generator), but fuel supplies were erratic. As school buildings are also community buildings to some extent, the benefits will accrue to more than just the teachers and students.

The MEC local technicians, who maintain the small solar home systems that provide a couple of household lights for many homes on the atoll, also participated in the systems' installation. This is very useful as it is the local technicians who will be the one doing the regular checking and maintenance, so having these technicians involved in the installation greatly improves their understanding of the systems.

Ebon is in the equatorial wet belt, where cloudy days are frequent. Nevertheless, the system proved that even during the cloudy weather encountered during the installation, significant power was being produced.



Ebon School Control Room

Official Opening at Ine Elementary School

On July 15th an opening ceremony was held at the first solar school installation at Ine village, on Arno Atoll. Representatives from Ministries of Education, Resource and Development and Finance joined the Marshall's Energy Company, Arno Local Government and the Senator for Arno (former Foreign Minister Gerald Zachios) in blessing not only this school, but also the entire program of six schools. Five days later a ship left Majuro with equipment for the three southern schools of Ebon, Toka and Namdrik, as the project moved up a gear.



On the same day, Principals from the other five schools who will receive PV systems were given a training session from the PMU representative in the use and operation of the solar systems. The installed system was used to show exactly what the Principals can expect from their new power systems; the layout of all the systems is similar from a users point of view, and so the Ine system served very well to represent the other systems.