

SOLAR POWER SEEN AS SOLUTION FOR REMOTE VILLAGES

Kyaw Naing, Myanmar Times, 06/10/03.

<http://www.myanmar.gov.mm/myanmartimes/no186/MyanmarTimes10-186>

Subsidies, technical support and greater awareness are needed to speed the development of alternative energy sources in Myanmar, an industry spokesman said last week. One of the leaders in the field, U Win Khaing, managing director of Myanmar Solar Energy System, a subsidiary of United Engineering, is enthusiastic about the future of solar power as an alternative power source in this country. "Myanmar has great potential for utilising solar energy which is a free energy source. It could provide an immediate solution for remote villages that are not connected to the national electricity grid".

U Win Khaing said that solar power could help raise socio-economic standards for people living in remote areas, where it is difficult and costly to install overhead power lines. "Of a total population of 52 million, about 70pc of the people in Myanmar live in rural areas. There are nearly 13,000 villages in the country, some of which still need to have access to electricity," he said.

Myanmar's average sunlight-hours range from 5.2 to 7.45 a day – more than sufficient to make effective use of a solar power system. In many cases, a solar power system alone can provide sufficient electricity to meet the requirements of an average rural household. The main reason solar energy is not used more widely at present is that purchase and installation costs are still too high for most of those living in rural areas.

The FISCA Co distributes 12-watt, 50-watt and 75-watt solar panels manufactured in China and India. A complete set including a solar panel, battery, DC/AC current inverter and other accessories ranges in price from US\$650 to \$900. The Sunpower Co which distributes Siemen solar products is another of five companies that promote the use of solar power in Myanmar. Their 75-watt system costs about K550,000. Its 75-watt panel when combined with a 120 ampere battery can power three 20-watt lights and a television set for about four hours, while a 50-watt panel with a 70 ampere battery can power three 10-watt lights and a television set for about three hours.

Solar energy usage in Myanmar is still very low, but it is currently used to charge battery back-up systems for radio telephones, telephone switchboards, television relay stations, water pumping stations and solar freezers for hospitals in rural areas. "Wider use of solar power can be implemented in many ways: from installing a village or community-based solar power generation system funded by contributions from residents; through to individuals installing their own solar power system as an alternative to relying solely on power drawn from the national grid," U Win Khaing said.

Additional references

NLM, 23/05/09. <http://www.burmalibrary.org/docs07/NLM2009-05-23.pdf>

Demonstration of the use of solar-power pumps conducted by Grundfos Co of Denmark and MY Associates Ltd of Myanmar. The pumps are intended for use in pumping underground water at hospitals, schools, homes and workshops in rural areas with insufficient supply of electricity.

NLM, 07/05/09. <http://www.burmalibrary.org/docs07/NLM2009-05-07.pdf>

In Putao in northern Kachin state, a newly constructed building that houses the Government Technical Institute and the Government Technical High School (Putao) was officially opened. The learning centre features an internet & video conferencing room with teaching aids, a solar-powered iPstar satellite receiver. A gasifier is used to generate electricity for the school. Altogether 98 students are attending the technical Institute (Putao), and 367 students, the technical high school. Photos of the solar-panels and the iPstar satellite receiver are included in the print edition of NLM.

UN Relief Web, 30/04/09.

<http://www.reliefweb.int/rw/rwb.nsf/db900SID/AMMF-7RLSM2?OpenDocument>

In Myanmar's Ayeyarwady delta, Tearfund has financed an initiative to distribute two rechargeable LED lamps to each of 110 families and the installation of a community solar recharging unit. This natural resource, readily

available, is an affordable technology and has the potential to dramatically improve the lives of thousands of people living in isolated communities throughout the delta which have no electricity supply.

NLM, 06/04/09. <http://www.burmalibrary.org/docs6/NLM2009-04-06.pdf>

Gen Myint Swe of the MoD Myint visits the MMTEI factory of the Ministry of Industry-2 at the corner of Mindhamma and Parami streets in Hlaing township, Yangon, where he is briefed by the advisor to the section dealing with LED electric bulbs on the production of bulbs, bio-batteries and the generation of solar-power. He checks on the production of LED bulbs. [A photo of the machinery used to produce the bulbs accompanies this news item in the print edition of NLM.]

Xinhua, 12/03/09. (edited)

http://www.macaudailytimesnews.com/index.php?option=com_content&task=view&id=24005&Itemid=32

Myanmar Ministry of Energy and its Thai counterpart have agreed to continue their co-operation in generating electricity from wind in Myanmar's coastal regions during 2009, sources with the Myanmar Hydrology and Meteorology Department said yesterday. The study follows up a similar co-operative endeavour in 2008 when the two parties constructed five solar energy measurement towers in the Yangon, Mandalay, Shwebo, Meikhtila and Pyay regions.

NLM, 28/02/09. <http://www.burmalibrary.org/docs6/NLM2009-02-28.pdf>

On a tour of villages in Kyunsu township in Taninthayi division, Industry No 2 Minister Soe Thein visits Mayanchaung, Kapa, Kade Katud, Katan, Tayapine, Wachaung, Migyaung-aw, Lewahbyin, Done-paleaw and Kangyi [on Katan island][where he consults with officials, teachers, health staff, local people and members of NGOs on matters related to the supply of electricity, including the use of hydropower, solar energy and bio-fuel and the building of village-to-village roads. The minister presents 20 sets of solar generators and 20 sets of hydro power turbines for village dispensaries, monasteries and computer rooms.

NLM, 12/02/09. <http://www.burmalibrary.org/docs6/NLM2009-02-12.pdf>

During a visit to the Bawlake township hospital in Kayah state, Prime Minister Thein Sein inspects the solar-powered 'generator' of the hospital.

NLM, 23/01/09. <http://www.burmalibrary.org/docs6/NLM2009-01-23.pdf>

A joint delegation led by government ministers from Norway and Denmark tours areas in the Ayeyawaddy delta areas hit by Cyclone Nargis. They are taken to Hlaingphone village in Mawlamyinegyun township where they view a housing project, school, dispensary, and a solar energy-using power station sponsored by various international agencies.

NLM, 30/12/08. <http://www.burmalibrary.org/docs6/NLM2008-12-30.pdf>

A photo of a solar-powered tube well in the village of Hlaingphone in Mawlamyaing-gyun township is included in the print edition of NLM. In the accompanying article, Hlaingphone is described as a model village reconstructed following Cyclone Nargis. A list of Myanmar companies involved in reconstruction activities is included, but it is not clear which one provided the equipment for the solar-powered pump.

NLM, 19/10/08. <http://www.burmalibrary.org/docs5/NLM2008-10-19.pdf>

A demonstration of the use of solar electricity took place in Lashio on 10/10/08. The three solar panels can produce 358 watts of electricity. Three fluorescent lamps, a rice cooker, an electric iron, an electric fan, a TV set and a DVD set can be used simultaneously using the electricity produced. [A photo of the demonstration accompanies the article.]

Khin Su Wai, Myanmar Times, 02/07/07. www.mmtimes.com/no373/n019.htm

Sales of solar panels have risen sharply in the past five years, with most buyers coming from rural areas not linked to the national electricity grid. The Myanmar Sustainable Energy System company in the Yadanamon housing estate in Hlaing township, says it sells about nine 50-watt solar panels a month. Sales have more than doubled since the company began selling them in 2003, according to assistant GM Soe Thein Tun. "Fifty per cent of our sales are to individual buyers in rural areas, with the rest going to NGOs and welfare groups," he said. Earth Computer Systems Ltd on Sule Pagoda Road in Kyauktada township, said monthly sales had reached at least 10 solar panels, up from barely one when it began selling the alternative energy devices in

2002. "Most of our customers live in rural areas of Yangon and Mandalay divisions and Shan State," said a spokesperson, adding that its best selling panel generated 40W. Solar panels cost about K10,000 a watt, with the top-selling brands made in India and China. More expensive brands from Japan, Australia, Germany and the U.S. are also available. U Aung Myint of REAM urges potential buyers to consider the long-term advantages. "Solar panels involve a high initial investment but they generate power for 20 to 30 years so they offer considerable savings over the long term compared to running a generator."

NLM: 26/04/06 <http://mission.itu.ch/MISSIONS/Myanmar/06nlm/n060426.htm>

Under the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy, equipment related to a project for generating solar energy to supply power to the Kyaiktiyo Pagoda was handed over by D-G of the Dept of Alternative Energy Development and Efficiency of Thailand, Siriporn Sailasutaand, to the Pagoda Board of Trustees. At the auspicious time, the cornerstone laying ceremony for the project was held in the presence of the energy ministers of Thailand and Myanmar. The power generated will be used for the pagoda.

Flower News: 29/03/06 www.ibiblio.org/obl/docs3/Flower2006.htm

Friends of the Rainforest in Myanmar have completed a project to supply solar power electricity to 250 households in Thangyigone village in the Mt Popa area. The project began in December 2006 in collaboration with REAM. The project cost more than K100 million; it was funded by the British Embassy.

Refocus Volume 6, Issue 1, Jan-Feb 2005, pp 46-48. www.globalgiving.com/pfil/1721/projdoc.pdf

The Karen Health and Welfare Dept manages 26 remote clinics, scattered across 600 miles, to serve the needs of internally displaced people who have been forced to flee their villages, but remain within Burma. Seventy-five medics work at these clinics, roaming the forests as "backpack medics" and attending to the medical needs of thousands of people. The clinics did not have electricity due to their remote location, far from the national electrical grid and without easy access to fuel for generators. Solar photovoltaic (PV) power proved to be the perfect solution to electrify these remote clinics because it can be transported, owned, and operated at the clinic level. To make sure that the clinics have reliable lighting, we selected and designed special PV systems, and held intensive training for system operators. The systems were designed for 1) high reliability, even during rainy season and 2) mobility so that they could be carried, by foot, to the clinics and moved when the security situation demanded. Each system consists of a 110 watt solar PV panel, a 12-volt 125 ampere-hour deep cycle battery specially designed for solar home systems, two 12-volt, 20-watt, fluorescent lights, and a 1-watt LED that is used as a night light. The charge controller, switches, and strain-relief terminal strips are housed within a rugged cabinet so that the system is durable and relatively 'plug and play'. The system powers the lights and a DC receptacle for charging the batteries of two-way radios, lap-top computers, and other devices. For the project, two medics from each of the clinics crossed into Thailand, where solar training was held. Instructors from Green Empowerment and Palang Thai taught them the practical aspects of solar power. The trainings combined classroom instruction with hands-on construction of the systems. The class covered the ins and outs of basic electricity (volts, amps, watts, and watt hours) and photovoltaic systems (how to maximize solar panel output, the importance of thick wires and good contacts, maintenance of lead acid batteries and optimal load management). Participants then built the systems from scratch, learning to assemble and disassemble them, and fix technical problems that could arise. The participants carried the systems through the jungle back to the hidden clinics and installed the systems themselves. The word has spread among medics and patients about the advantages of solar power and now there are five more at clinics in areas where the risk of army attacks is low enough for them to be safely installed. [Photos illustrate an installed system]

Maw Maw San, Myanmar Times, 09/02/04. www.myanmar.gov.mm/myanmartimes/no203/MyanmarTimes11-203/013.htm

U Win Khaing, MD of the Myanmar Solar Energy System, said solar energy was attractive to consumers because it was cheap and reliable. Its potential was huge for remote areas not yet connected to the national electricity grid. Myanmar Solar Energy System became involved in promoting solar energy use because of its growing popularity in some other Asian countries, including Japan. Sun Power started its solar energy business in 1997. GM Ni Ni Than, said consumers were initially reluctant to use solar energy because they were not familiar with it and due to installation costs as high as K500,000 for a system capable of producing 50 watts of power. "After installing the systems, people do not need to spend any more money and there are no fees for the power. We guarantee that our systems will last for 25 years," she said. Solar power is also attracting increasing interest among urban residents and was promoted during the recent ICT Week in Yangon.

"4. Solar and Wind Power", pp 23 – 30. Part of an unnumbered volume entitled, *Visual Guide for Planning Village RE Schemes*, of the series, *The Study on Introduction of Renewable Energies in Rural Areas in Myanmar* (Sept 2003).

[http://lvzopac.jica.go.jp/external/library?](http://lvzopac.jica.go.jp/external/library?func=function.opacsch.mmdsp&view=view.opacsch.mmindex&shoshisbt=1&shoshino=0000159767&volno=00000000&filename=11734050_02.pdf&seqno=2)

[http://lvzopac.jica.go.jp/external/library?](http://lvzopac.jica.go.jp/external/library?func=function.opacsch.mmdsp&view=view.opacsch.mmindex&shoshisbt=1&shoshino=0000159767&volno=00000000&filename=11734050_02.pdf&seqno=2)

This is background material designed for a non-technical manual for field workers to use in presenting basic information about solar and wind power generation at the village and private home level. The advantages and disadvantages of each system are compared. The possibilities of a hybrid generating system are explored and the basics of a solar battery charging station are explained. The uses of solar panels in schools, rural health centres, and water pump stations are touched on.

United Engineering website information [n.d.]. <http://www.united-engineering.net/MSESStuff/remote1.htm>

In Yan Myo Aung, an isolated village [near] the India-Myanmar border, 500 [people] are beginning to enjoy the benefits of power and light thanks to solar energy. Home solar units have been installed for the entire village. Every home involved in the project is equipped with a fluorescent light switch, wires and connectors and a discharge protector. The important thing in remote villages is to keep the power system simple and dependable. In this program each of the homes, as well as the street lighting and communal buildings, is supplied with its own self-contained solar power system. The program was selected because the remote location of the village makes it difficult to obtain fuel needed for other electrical generation systems and the high cost of connecting the area to the transmission grid.

Note also: <http://publishedforscholar.wordpress.com/2006/12/18/india-myanmar-relations/>

As part of an S&T co-operation programme, solar electrification of a village in upper Myanmar was completed in October 2002 by Central Electronics Limited (CEL).

See also above the paper by Thet Thet Han Yee, "Solar Energy Potential and Applications in Myanmar", <http://www.waset.org/pwaset/v32/v32-79.pdf> in which the solar-powered system Yan Myo Aung is reported to be installed in 110 homes in the village and to have a total capacity of 40 kW.

See also: www.mnre.gov.in/annualreport/2002_2003_English/ch10_pg2.htm