

## LIFESTYLE

## Renewable energy suppliers find their place under the sun

As the world scrambles to harness alternative energy sources, the importance of solar power has risen concurrently, but is Cambodia contributing to the demand?

BY JET OORERIK

**T**RROPICAL regions should be the ideal place to generate solar electricity.

Developing countries along the equator get fairly consistent sunlight year-round and could use this to harness the free energy the sun provides.

However, high initial investment costs have made the option prohibitive for most.

Solar power is not a new idea in Cambodia. In fact, one company brought solar here more than 10 years ago.

Khmer Solar was the brainchild of Peter Barwell and Ford Thai, who started the business in 1997 with the idealistic view that renewable energy should

be as accessible for Cambodians. Their client base in the first five years was approximately 80 percent NGOs, with the remainder being private homeowners.

NGOs had the capital to invest in the equipment, and many of their projects were far from functioning power lines. Also, the foreign staff were aware of the benefits of using renewable energy.

Kunthap Hing, an adviser for Khmer Solar, was working with the World Bank in the early 2000s, studying the viability of renewables, energy efficiency and conservation.

"The World Bank was a big supporter of solar and still is," he said. "They helped fund studies showing that, if the initial costs could be brought down, rural Cambodia would benefit from solar power."

Ten years ago, the initial investment cost for solar panels, batteries and a charge converter averaged \$10 per kilowatt.

To power a small TV for two to three hours, you would need a 130-watt system.

Therefore, the cost of buying and installing that system would have been \$1,300.

For an oil-run generator, the investment cost is 50 cents per kilowatt and would have cost \$75 for the same capacity.

However, the prices for solar have dropped considerably in recent years. It now costs \$5-\$8 per kilowatt, depending on the size and complexity of the system.

The lower costs have brought more interest, and there are now more than a dozen com-

panies selling solar power systems in Cambodia.

European countries have invested heavily in solar, with Germany one of the leaders in the field.

Better technology has led to more efficient power converters and new sealed-gel batteries, which last longer and are easier to handle than the wet-cell batteries found in most cars.

Though wet-cell batteries only last two to three years in Cambodia's heat, Chamrith Khuth of KC Solar stated: "We have a warranty of three years for our gel batteries, but we believe they will last for 10."

These cutting-edge power sources are designed to work in a 30-degree environment, which is important because

the battery, which is also the weakest part.

Although the battery will need replacing every so often, the converters and solar panels have warranties anywhere from 25-40 years and a probable lifespan of much longer.

All of these advances, combined with lower front-end costs, have made the systems more competitive with other electrical options.

According to The World Bank Web site: "Electricity tariffs in Cambodia are among the highest in the world."

"The average tariff charged by Electricite du Cambodge is 16 US cents/kWh, ranging from 9 to 23 cents/kWh, with even higher tariffs outside Phnom Penh."

"The tariffs of the Rural Electricity Enterprises (REE) range from 30 to 90 cents/kWh."

KC Solar recently installed a 4,000-kilowatt system in a house in Oudong.

The owner had been paying 50 cents/kWh for electricity, but is now off of the grid.

Bantambang has become the area with the most sales of late, because many of the farmers are wealthy but only the city centre has power.

Sales trends have reversed recently, with 80 percent of solar systems being sold to private households and the rest to NGOs and government buildings.

Phnom Penh only accounts for about 2 percent of sales, most of which are solar water heaters.



Only about 2 percent of Cambodia's solar sales are in Phnom Penh. PHILONG SOUVA

## SHEDDING SOME LIGHT ON SOLAR ENERGY

A Swiss scientist, Horace de Saussure, invented the world's first solar energy collector, or "hot box", in 1767.

In the 1830s, British astronomer John Herschel used a solar energy collector box to cook food during an expedition to Africa.

Albert Einstein won the Nobel Prize in 1921 for experiments with solar energy and photovoltaics.

It takes 8 minutes, 17 seconds for light to travel from the sun's surface to earth.

Enough sunlight falls on the earth every minute to meet the world's energy demands for an entire year.

If we covered a small fraction of the Sahara Desert with photovoltaic cells, we could have enough power to meet all the world's electricity requirements.

All TV and communications satellites are powered by solar energy using photovoltaic cells.

The sun will run out of fuel in 5 billion years.

## WHAT'S NEW

## Nitrous oxide is no laughing matter

● Nitrous oxide, aka "laughing gas", is the biggest threat to the ozone layer that shields animal and plant life from the sun's deadly rays, scientists say. And while it has been recovering from the CFCs, which were phased out in 1987, nitrous oxide emissions may compromise the process. Nitrous oxide is still released at a rate of 10 million tonnes a year. Human activity, like soil fertilisation, sewage treatment and combustion, are the most significant sources, representing one-third of emissions. If N2O emissions are not substantially reduced, within a century they could destroy 40 percent as much stratospheric ozone each year as CFCs did at their peak, according to AR Ravishankara of the US National Oceanic and Atmospheric Administration in Boulder, Colorado. [RELATED](#)

## Befriend Ugandan gorillas on Facebook

● Users of Facebook and Twitter will be able to "befriend" rare Ugandan mountain gorillas and track their movements, the Uganda Wildlife Authority announced. "Through geo-tracking and GPS, you'll be able to get information about new births within the family and other information," said Lilian Nsubuga. Cameras will also be installed around Uganda's Bwindi Impenetrable Forest, home to roughly half of the world's estimated 740 mountain gorillas, one of



most endangered species on the planet. Online users will be able to watch live footage of their "friends" eating and trekking. [AP](#)

## Phones threaten worker bees, honey

● Electromagnetic waves emitted by mobile phone towers and cellphones can pose a threat to honey bees. An experiment conducted in the southern Indian state of Kerala found that a sudden fall in the bee population was caused by phone towers. The electromagnetic waves emitted crippled worker bees' "navigation skills", said Dr Saimuddin Pattazhy. He found that when a cellphone was kept near a beehive, the worker bees were unable to return, leaving the hives with only the queens and eggs and resulting in the collapse of the colony within 10 days. [AP](#)

**Providers of solar power products in Phnom Penh**  
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