

## Bright Idea: Light Bulbs From Plastic Bottles, Water and Bleach



**Simone Orendain**  
Sheila Royeras admires the soda bottle solar bulbs that were installed in her home in Manila, Philippines. The bulbs are made out of a soda bottle, purified water and some bleach.

This is the VOA Special English Technology Report.

Nearly a billion and a half people, mainly in Asia and Africa, were living without electricity in two thousand nine. That latest count from the International Energy Agency was an improvement. In Asia, three out of four people in developing countries had electricity in rural areas. So did almost everyone in cities. But in Africa the rate was less than seventy percent in cities, and just one-fourth of the people in rural areas.

There are many efforts to find low-cost ways to light homes. One idea is a "water bulb." This system has recently been used to brighten more than one hundred homes in the Korogocho settlement in Nairobi, Kenya. These included the home of Madina Muhsin's family.

MADINA MUHSIN: "I'm very happy. I can see the light. Before it was all dark, dark, dark. Now I am happy -- I am very happy."

Members of the youth group Koch Hope installed the water bulb. First, they filled a two-liter plastic bottle with water and a little bleach. Next, they cut a hole in the metal roof. They pressed the bottle halfway into the hole. Then they used silicone caulk to seal around it to prevent rain from coming in.

In no time, the home was lit with about fifty to sixty watts' worth of light. The combination of water and bleach refracts light from the sun and a full moon. The bleach keeps the water clear.

Madina Muhsin, like many of her neighbors, was spending a lot on kerosene to light her home. Now, she says she will save almost half of her weekly income. Her son Abbas can now read a book at home in the middle of the day.

Veronica Wanjiru and her two children also have a water bulb in their home. She says her older son had to repeat a grade in school because he could not get his homework done when their home was dark.

VERONICA WANJIRU (in Swahili with translation): "I've seen a big difference, especially with my children's education. If they're given homework, they can finish it on time. And they don't have to wait for me to come and light the candle or go outside and do their studies outside so that they can finish their homework."

In the Philippines, a nonprofit group called My Shelter Foundation has used a similar low-cost lighting solution in thousands of homes. The project is called "A Liter of Light." The head of the group, Illac Diaz, says the idea is better than candles and kerosene, and offers a great new use for old plastic soda bottles.

ILLAC DIAZ: "It's safer. It's healthier. It's brighter, and the funny thing is the light bulb actually comes from the place you'd least expect it, which is the trash bin. So it's the cheapest light bulb in the world."

And that's the VOA Special English Technology Report. You can watch a video about the water bulb at [voaspecialenglish.com](http://voaspecialenglish.com). I'm Steve Ember.

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