

Delivering Innovation

Japanese Innovation Spreads Throughout the World



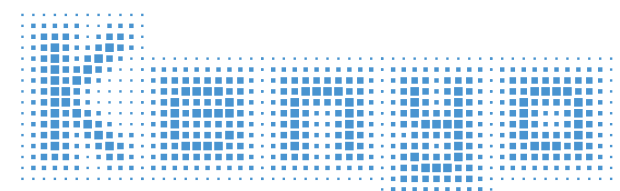
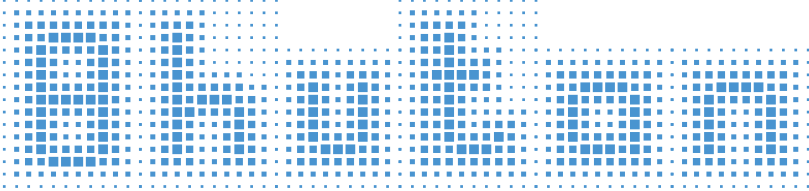
LEDs

for a Bright Future

Some 1.3 billion people do not have access to electricity. This is the current reality of the world, and many of these people live in remote areas power distribution lines cannot reach in developing countries.

However, we are now witnessing a sweeping change in this situation with blue light emitting diodes (LEDs), the creation of Japanese inventors Prof. Isamu Akasaki, Prof. Hiroshi Amano and Prof. Shuji Nakamura, who shared the 2014 Nobel Prize for physics. JICA is providing assistance to spread LEDs as part of solar home lighting systems for bright and long-lasting illumination in any remote area of the world.

With the aim of profoundly changing the lives of people in developing countries using Japanese technologies, JICA will continue to deliver the benefits of innovation in collaboration with its development partners.



Villagers are pleased with turning on the lights for the first time.

Light Supporting a Himalayan Kingdom

Bhutan is a small country in the Himalayas, situated between India and China. With international assistance, work has been in progress to develop a power distribution network, though this is a difficult task because of the country's topography, which is characterized by a series of steep mountain ranges.

In 2010, the village of Malbasay in the Tsirang District — a six-hour drive and four-hour mountain walk from Thimphu, the capital of Bhutan — was lit up for the first time using a system that combines solar power generation and LEDs with the cooperation of JICA.

LEDs are long-lasting and energy-efficient. Because systems including solar panels can be made compact, they can be lightweight for transportation along mountain paths. Because they are long-lasting, they also eliminate concerns regarding periodic replacement.

The villagers were trained locally by JICA in how to use the technologies involved in an appropriate manner. "It is easier to cook with a bright light." "I can study early in the morning and in the evening as it is difficult to study during the day because of busy farming work." Such positive reactions can be heard throughout the village, indicating that electric lighting has improved the lives of the villagers.



Equipment of a solar home system incorporating LEDs has been made compact and light-weight.



An awareness campaign is conducted by a Japanese expert.

Enhanced Security on the Savannah at Night

Drive some four hours from Nairobi, the capital of Kenya, and you reach an area covered with reddish brown soil where giraffes and zebras peacefully graze. This changes drastically at night when wild animals move about freely. Hyenas approach the premises of village schools and clinics and pythons can enter teachers' offices and the dormitories where children are asleep. There have been incidents of people being bitten by them in the dark corners of unlit buildings, highlighting growing concerns regarding the dangers posed by these animals.

While Kenya is known as a leading African country in terms of growth, its domestic electrification rate is as low as some 30 percent. JICA has installed LED lighting systems combined with solar panels at 10 primary schools and clinics in three districts characterised by the above situation. Since system installation, the frequency of wild animal invasion of such facilities has declined considerably.

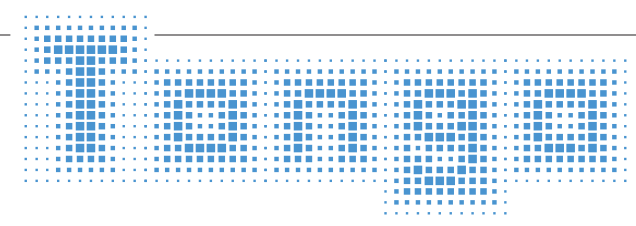
Meanwhile, with the assistance of institutions such as JICA (in 2011), Panasonic test-marketed solar lanterns, which it developed, equipped with LEDs. Then, its solar lantern project was expanded, delivering bright lights to more countries around the world.



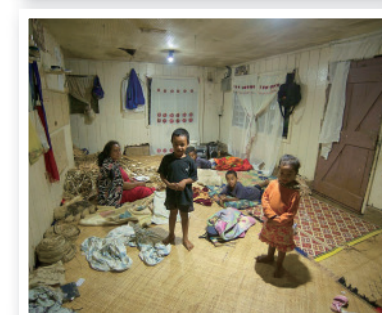
A class conducted in the evening under LED lamps



Instructing local engineers in Japanese technologies



Brightening the Lives of Island People



A dark dining area at night (above) Now it is lighted by by LED lamps.

Tonga is a country in the South Pacific that consists of some 170 islands. It is surrounded by beautiful ocean but faces problems resulting from this. One is its access to electricity. The provision of electricity to all of the scattered islands is difficult.

With the assistance of JICA, work is in progress to provide islanders with electricity. A system that combines solar power generation and LED lighting has been installed at 552 sites, including homes, churches, village halls and schools, on 13 islands, and the islanders are actually feeling the advantages of such a system. Women weaving in village halls testify that there was constant worry about fire when they used kerosene lamps. They now smile when they say that the newly introduced solar system has made it possible to work late into the evening. They specialise in making a cloth called Tapa that uses tree bark as its raw material. As each piece of cloth can fetch US\$50 in the market, their cash income has greatly increased. Another change relates to access to remote islands. As sea crossing at night previously had to rely on starlight, such crossings were dangerous in bad weather because of the poor visibility. The captain of a ferry happily says that the lighting on the islands makes it much easier to locate them at night, making safe voyages possible.



Delivering Innovation

JICA delivers the benefits of Japanese innovation to people in need the world over.

JICA is working to spread LEDs in more than 30 projects in more than 20 countries. LEDs have been utilized to improve the quality of life of the poor, to save energy and for medical and research equipment.

In addition to LEDs, there are many superior technological innovations originating from Japan. JICA delivers these Japanese innovations to the people in developing countries through various initiatives.