



Maldives Energy: Providing Electric Power in the Pacific

Round-the-clock electricity in the Maldives can be both a lifesaver and life-changer on remote islands, where until recently it only occasionally lit up the evenings.



These generators on Baarah Island are part of the ADB-supported Outer Islands Electrification Sector Project, which brought reliable power to almost 29,000 residents scattered across the Maldives' remote archipelago. Photo: Ahmed Zahid/ADB

Baarah Island, Maldives - Ali Shameem, head of the Baarah Island Health Center in the northern Maldives, remembers only too well the difficult, even life-threatening days of restricted and intermittent power in his community.

"In the past we had trouble getting enough electricity at peak times and once we lost electricity when we had two patients on breathing machines. Fortunately we had oxygen bottles as backup. But now, with uninterrupted power, we are in a much more comfortable position and can stay open 18 hours instead of eight," he said.

Residents in modern cities, where electricity is often available uninterrupted at the flick of a switch, take power for granted. But for communities in remote locations - particularly scattered islands - stop-start power supplies are an unwelcome fact of life, undermining livelihoods, incomes, and quality of life.

The Maldives is an archipelago of over 1,100 islands, covering 900 kilometers of the Indian Ocean from north to south. It is famed for its turquoise seas and luxury tourism. But the large distances between islands and the small local communities—sometimes of just a few hundred residents—make the provision of utility services a difficult and costly proposition. A shortage of power exacerbates development gaps, prompting many members of remote communities to flee for the bright lights and greater job opportunities of larger centers.

Major upgrades

In 2001, the country's growing development divide and a rising tide of people flooding into the tiny capital, Malé, prompted ADB to approve funds for a major upgrade of power systems on selected outer islands. The Outer Islands Electrification Sector Project,

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financed by an \$8 million equivalent Asian Development Fund loan, provided new or upgraded diesel-fueled power systems on 19 islands, serving around 5,700 households, totaling almost 29,000 people.

"In the past, islands did have generator sets, typically operated by a wealthy individual or two, but electricity was usually only available a few hours at night and there were frequent interruptions, with poor quality networks," says Ahmed Ali, assistant director of the Maldives Energy Authority. "It was all very ad hoc, with no proper planning."

New modern, diesel-powered generator sets are operated by utility service providers, often employing trained members of the local community. The new sets have brought round-the-clock, reliable electricity to many islands for the first time. And the benefits have been substantial.

"With continuous power, people on the participating islands now have the opportunity to work during the day. This has helped support new businesses like guesthouses and restaurants, and this has had economic spin-offs for the community," says Ali.

Generating opportunities

Sixty-five-year-old Fathima Mohamed helps her son-in-law run a small tailoring business on Baarah Island, employing an expatriate worker. Says Fathima, uninterrupted power has been a huge benefit.

"Without a good supply of electricity, it wouldn't be possible to run this kind of business, which uses a sewing machine. We are very happy with the project," she says.

The use of modern, well maintained generating systems has also delivered a dramatic boost to power efficiency, cutting distribution losses and operating costs.

"The islands that have project-funded power systems can produce the same amount of electricity at a much cheaper rate than those without. In many cases, inefficient systems suffer distribution losses of as much as 30% to 40%," says Ali.

The ADB-financed systems have also been set up with sensitive tropical island environments in mind.

"They are low noise-level sets with proper vibration dampeners and ventilation systems, using extended chimneys in order to reduce noise and pollution," says Ali. "In the design of powerhouses, we incorporated data on prevailing winds so that exhaust would not drift over homes."

Boost to GDP

The broader economic benefits for the Maldives are also evident. Between 2002 and 2008, over the course of the project, non-tourism related gross domestic product expanded at a compounded annual rate of 8.5%. With tourist resorts supplying their own captive power generating systems, growth can be partly attributed to improved electricity supplies.

In the capital, Malé, ADB has provided loans of over \$22 million for system upgrades to meet surging demand and to eliminate power shortfalls during peak demand periods. Tariffs have been set by the operator, State Electric Company, to fully cover operating costs and maintenance.

However, on many outer islands, government subsidies are needed to cover recurring costs. With recent sharp spikes in the cost of fuel, the practice is putting a sizeable drain on government finances.

On islands covered by the ADB project, utility operators have now introduced a fuel surcharge to cushion themselves and the government from the impact of high gasoline prices.

"We have incorporated the surcharge into billing, which is in addition to the regular tariff, and this allows operators to cope with additional fuel costs," says Ali.

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Search for alternatives

In the long term, the government will need to look at alternative fuel sources.

"It is not sustainable for a country like the Maldives to rely totally on fossil fuel imports. Every price hike makes us vulnerable and with the scattered nature of our islands and limited space we don't have storage facilities on all of them, making it costly to transport fuel, especially in rough weather," says Ali.

Reducing fossil fuel use and tapping the country's abundant renewable energy resources like the sun and the wind have been at the forefront of government thinking in recent years. The government has pledged to make the Maldives the first carbon-neutral country in the world by 2020.

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