



aviationrenewables

# PROJECT REPORT



**LOCATION** Private Airport, Lao PDR

**EQUIPMENT** Solar Series LED PAPI's  
LED Runway Lighting System

**DATE** May 2015 (1st phase)  
October 2016 (2nd phase)

**APPLICATION** Permanent Solar LED Airfield Lighting System for 24/7 Operations

**CLIENT** Private Airport

## SYNOPSIS

Aviation Renewables was tasked with the design, installation, training and commissioning of an LED airfield lighting system at a private civil airport in Lao PDR. The system features a Solar Series LED PAPI and LED runway edge, and threshold lighting. Aviation Renewables traveled to the site for the first phase, and had the system installed and operational in 3 days for the self-contained approach system to increase the safety of all approaches. As part of a longer term capital investment, the second phase consisted of LED runway lighting to enable safe night landings.



## CHALLENGE

The airport operator runs an industrial facility that operates for 24/7. As part of their safety and continuous improvement initiatives they wanted a PAPI system to provide pilots with a safe glideslope over the steep terrain surrounding the airport. As the company has grown, the frequency of flights at the airport has increased and more employees are on site at night. In order to enable MEDEVAC landings and takeoffs, the airport invested in LED runway lighting from Aviation Renewables.

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## SOLUTION

This airport, located deep in the jungle, has limited land area to work with beside the runway, which necessitated an engineering study to determine the best placement of the LED PAPI. The First Phase of the project features Solar Series LED Precision Approach Path Indicators powered by MAPPS power systems. Aviation Renewables led the design, supply, installation and commissioning of this system, and had the entire installation completed in 3 days with no impact to normal airport operations. The Solar Series PAPI is the most efficient LED PAPI on the market that meets both ICAO and FAA photometrics.



The PAPI is powered by a frangible Solar Series MAPPS solar power system, resulting in a completely off-grid, fully controllable 4 box LED PAPI system. With proper use, there is zero maintenance required for this system for up to 5 years, at which point a simple and cost-effective battery replacement will keep the system healthy for another 5 years. The approaches to the runway also had several obstacles that required marking. To accomplish this, the Solar Series L864 obstruction lights were used, once again powered by the Solar Series MAPPS solar power system. This completely off-grid solution ensures over 7 days of autonomy for the light in accordance with FAA rules. An integrated photocell ensures reliable, dusk to dawn service for years.

During the second phase of the project, Aviation Renewables worked with onsite staff to design and supply the LED runway lighting system. The complete LED airfield lighting system is compliant to ICAO standards and recommendations. The LED lighting uses a Pilot Activated Airport Lighting (PALC) control system, so the pilots can illuminate the runway from the air using their VHF radio. This allows the pilots to turn the lighting on whenever it is needed, including bad weather and low light conditions. The airport is now certified by the country's civil aviation department for night operations, a fact that will greatly increase the safety margin for the site's workers in the event of a medical emergency.

