

PROJECT REPORT

aviationrenewables

LED RUNWAY LIGHTING SYSTEM SUSTAINING 24-7 ICAO COMPLIANT OPERATIONS



LOCATION Eastern Africa

DATE October 2017

CLIENT Multi-National Industrial Company

EQUIPMENT Solar LED Runway Lighting, Solar Series LED PAPI, Solar LED Taxiway Lighting, Solar LED Windsock Lighting

APPLICATION Solar LED Runway Lighting System for Sustaining Operations

SYNOPSIS

A large fly-in-fly-out industrial site in East Africa required 24/7 operational capability at the coastal regional airport. Working with Aviation Renewables, the company selected a fully ICAOcompliant Solar LED Runway Lighting System that will support operations during night and inclement weather. Aviation Renewables was on site to manage the installation, commissioning and training of the system.



CHALLENGE

The customer required 24/7 operations at their airport as part of their risk management for Medevac situations and charter aircraft operations. A fully ICAO-compliant system would be required to satisfy the operations, safety and insurance requirements. Given that the airport sits in a residential area, the system needed special security requirements to mitigate the risk of theft. In addition, the solar LED runway lighting system needed to be easily removed and re-installed at a new airport closer to the customer's facility when the construction is completed in 2019.



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SOLUTION



After careful consultation with the client, Aviation Renewables designed a complete solar LED runway lighting system to meet the operational demands, security requirements; safety protocols and overall budget set by the client. The end result was a fully integrated, solar LED runway lighting system that is wirelessly controlled by a single handheld remote controller or USB for touch screen command and control functionality. The selected system includes Solar Series LED PAPI systems; solar LED runway and threshold lights; solar powered LED taxiway lights; solar powered LED windsock lighting and a 2.4Ghz wireless Mesh Network control system for complete system operation and diagnostic functions. The Solar Series LED PAPI system is an ICAO compliant 4-box PAPI system. It is powered by a 520-watt solar power system which will enable 24/7 operations in case of emergency evacuations for extended periods of time. The 30,000cd Solar Series LED PAPI system was flight tested with visibility confirmed from 10 miles on approach to the airport.

The solar LED runway edge, threshold and taxiway lighting are completely radio controlled, allowing changes in intensity at the request of the pilot or ground-based personnel. The solar LED runway lights and solar taxiway lights are compliant to ICAO standards for intensity and photometrics, capable of supporting non-precision approaches during night operations.





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The entire system is controlled by a single handheld controller or USB which plugs into a PC or tablet. Both the controller and USB use a 2.4Ghz transmission protocol to build a Mesh Network, giving the control network virtually unlimited range and eliminating any line-of-sight concerns with point-to-point communications in so other types of lighting systems. The handheld controller controls on/off, intensity, grouping and diagnostic functions. The software is also included for a unique tablet interface, allowing simple touchscreen operations that cater to a variety of untrained users. In addition to the handheld controller and the tablet interface, a Pilot Activated Lighting Controller is available for the system, allowing air-to-ground activation of the lighting system via VHF airband frequencies.



Aviation Renewables was on site to manage the installation, training and commissioning of the entire airport staff. The installation, training and commissioning of the system was completed in 8 days. We look forward to returning to the site when the time comes to move the solar lighting system to the new airport.



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