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PROJECT REPORT

LED PAPI SYSTEMS POWERED BY SOLAR ENGINES TO CIVIL AIRPORT IN OCEANIA

LOCATION Oceania

DATE July 2021

CLIENT Civil Aviation Authority

EQUIPMENT Solar Series LED PAPIs with Solar Series RMS Engines

APPLICATION Solar LED PAPI Systems for 24/7 Operations

SYNOPSIS

Aviation Renewables has been awarded a contract to design, integrate and deliver portable LED Precision Approach Path Indicator (PAPI) systems powered by Solar Series RMS engines with L854 Pilot Activated Lighting Control (PALC) for a South Pacific remote island airfield.

CHALLENGE

The remote private airfield is situated in extremely mountainous terrain. The sudden changes associated with the mountain weather leads to low visibility conditions that can be a challenge to pilots on approach. In order to maintain proper attitude and approach slope, the airport decided a PAPI system would be the best tool. The airport has no grid electricity and no ground personnel, so they required a system that used off-grid electricity and would be remotely activated.

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SOLUTION

The private airfield tasked Aviation Renewables with designing a PAPI system that would use a well-designed, reliable solar power system and be activated by VHF radio from the cockpit. As the system is so remote, emphasis was placed on ease-of-use and reliability.

The RMS solar power system features a compact, all-in-one design that keeps failure points to a minimum. The unit is mounted low to the ground on frangible mounts to comply with frangibility requirements. Each RMS will collect enough electricity from the sun each day to supply ten 15-minute activations. In emergency situations where more usage may be required, the battery will provide 12 hours of continuous use.

The L854 Pilot Activated Lighting Controller is integrated into the PAPI Power Control Unit and maintains a passive listening watch on the aerodrome frequency. When the L854 detects 3, 5 or 7 clicks on the VHF frequency, the unit instructs the PAPI to illuminate in low, medium or high intensity, respectively.

The Solar Series LED PAPI features industry-leading efficiency with FAA certified photometrics. The LED PAPI is extremely easy to install and re-locate, which will allow the client to re-deploy the system to another remote airport when the need arises.

Aviation Renewables has supplied multiple solar powered LED PAPI systems to this region to support temporary, semi-permanent and portable LED runway lighting operations. Using these easily transported systems enables the airport operator to provide continuous, safe and ICAO compliant LED PAPI operations for jet traffic during periods of airfield construction, runway resurfacing projects or any unexpected events of power failure.

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