Tesla Kruger National Park Ultra-Lux Remote Microgrids

Project Overview

Remote safari operations and other commercial facilities, including lodging, have historically relied upon diesel generators for electricity when not connected to a traditional utility power grid. Is there a better alternative for such operations, especially as environmental concerns are amplified both locally and globally?

The Challenge

Local impacts from sole reliance upon diesel generators can be negative in terms of noise and pollution. Factor in increased awareness about global climate change, and there has got to be a better way to maintain environmental quality in sensitive habitats in protected parks while still offering the essential services and enhanced experience for hunters as well as wildlife tours.

The Solution

Encorp installed microgrids at two different sites within the Kruger National Park in Boswana, South Africa. At the Xaranna Lodge, a microgrid was installed that included two new state-of-the-art efficient generators totaling 250 kW. In addition, a 114.4 solar PV system was paired with a 285 kWh of energy storage provided by Tesla. At the Sinigita Lodge, an even larger microgrid was installed that includes the following assets: three generators totaling just over 1 MW of capacity; an 800 kW solar PV array and a 3 MWh battery energy storage system. Encorp's controls manages all three types of DER assets in both microgrids. While integration of the microgrid took several years, Tesla brought Encorp in to finally get the project up and running. The logic behind the microgrid is to charge the battery with solar power in the late afternoon so there is no need to run noisy generators at night. One of the microgrids has been able to run for 30 days straight without reliance upon any diesel generators at all.