



Dynamic solution to the issue of inconsistent lighting during the winter months in car park due to insufficient solar energy.

Overview

Installation of a microgrid system developed by Conflow Power Group (CPG) that incorporates enhanced solar, generator, and turbine technology to ensure that existing solar streetlamps have a reliable power source throughout the night, regardless of the season or weather.

The Problem

As it stands, the power generated by the solar panels attached to the streetlamps in your parking lot is insufficient during the winter months due to longer nights and poor weather conditions. This issue is causing lamps to run out of power during the night, which will negatively impacting both the lifespan of the batteries within the lamps and the visibility, safety and security of the area.

Our Solution

CPG's advanced microgrid system provides a flexible and sustainable solution for your energy needs on a low rate Power as a Service pricing model, with no upfront costs. By integrating enhanced solar panels, a backup generator, and wind turbine technology, this system will generate power not only from the sun but also from the wind. This ensures continuous power generation and storage, guaranteeing that your streetlamps will stay lit all night, even on the darkest winter days.

Maintenance Contract

Alongside the microgrid system, CPG also offers a comprehensive maintenance contract at no additional cost. This contract allows any issues with the streetlights to be reported directly to CPG for repair or remedy, ensuring uninterrupted service and saving you the hassle of coordinating maintenance work.

Cost Structure

The proposed microgrid installation and maintenance service come at no upfront cost. CPG operates on a 'Power-As-A-Service' model, where you will be billed at a rate of 15p per kilowatt-hour (kWh) generated and used. This cost-efficient model means you only pay for the energy you consume, making it a sustainable and economically viable solution for your needs.

Benefits of the Microgrid System

The proposed microgrid installation and maintenance service come at no upfront cost. CPG operates on a 'Power-As-A-Service' model, where you will be billed at a rate of 15p per kilowatt-hour (kWh) generated and used. This cost-efficient model means you only pay for the energy you consume, making it a sustainable and economically viable solution for your needs.



RELIABILITY: The microgrid system ensures your solar streetlamps will have a consistent power source to function optimally throughout the night, improving the safety and security of the parking lot.



RESILIENCY: With the addition of a generator and wind turbine, the system is designed to function even in extreme weather conditions when solar power might be insufficient.



SUSTAINABILITY: By harnessing power from renewable resources such as wind and sunlight, the microgrid contributes to reducing carbon emissions, supporting your commitment to environmental sustainability.



COST-EFFICIENCY: With no upfront installation cost and payment only for power consumed, the microgrid system presents a cost-efficient solution for maintaining your lighting infrastructure.



EASY MAINTENANCE: With the CPG maintenance contract, you have a direct line to report any issues, ensuring quick resolution and minimal disruption to your streetlight operation.

Specification

1. Enhanced Solar Panel

Total number of panels	: 10 (equalling 3kWh)
Expected power generation	: 300W per panel during peak sunlight hours
Type	: Monocrystalline, high efficiency (20%+)

2. Backup Generator

Total capacity	: 5 kWh (sufficient to fully charge batteries supporting all 30 streetlamps)
Fuel type	: Biofuel, for reduced emissions
Operation	: Automatic start-up when other energy sources are insufficient

3. Wind Turbine

Total number of turbines	: 1
Expected power generation	: 1kW per turbine at optimal wind speeds
Type	: Vertical axis wind turbines for efficient energy capture in varying wind directions

4. Battery Storage

Total capacity	: 10 kWh
Battery type	: Lithium-ion for high efficiency and longevity
Feature	: Smart charging and discharging to optimize power usage and storage

5. Streetlamps

Total number of lamps	: 30
Power consumption per lamp	: Approximately 0.1 kWh per hour
Expected usage	: Approximately 12 hours per day during winter months

6. Microgrid

Connection	: All streetlamps connected through a central microgrid
Load balancing	: Automatic load distribution based on energy availability from solar, wind, and generator sources
Smart operation	: Inbuilt system for efficient power distribution and usage tracking The above specifications ensure that the solar streetlamps can perform optimally with minimal downtime, contributing to the safety and security of the parking lot. The Power as a Service model of 15p per kWh used guarantees a cost-effective, green energy solution for your needs.

Summary

We are confident that this system, along with the comprehensive maintenance contract, will provide a robust solution to the current challenges you are facing with the solar streetlamps. We look forward to the opportunity to discuss this proposal further and answer any questions you might have.

Option Extras

- Car charging
- ANPR systems
- CCTV systems