



Green Solutions:

Mobile CCTV - Solar



Telent Green Solutions Working Group



Green Solutions: Mobile CCTV - Solar

CCTV Is essential for monitoring and protecting the flow of passengers and vehicles across all of the UK's transport infrastructure

CCTV systems run 24/7/365, and can be monitored live or provide recordings. They provide essential information for the protection and flow data for people and traffic on our railways and highways.

The expansion of the use of CCTV globally for surveillance, crime monitoring and safety systems is set to continue, likely doubling between 2023-2030 according to Global Market Watch this year and Telent is recognising this and looking for alternative power sources.

A typical remote install using a traditional generator can use upto 4.0L of diesel a day equating to 4.0 tonnes of CO2e annually. This system can also replace the more modern battery swap solution by eliminating the need to continually drive between site and depot to replace the dead battery and ensures a 100% continuity of service.

A fully solar powered system can reduce the CO2e to zero.

Green Solutions: Our Vision



Telent have committed to achieving net-zero GHG emissions by 2050 through the Science Based Targets initiative (SBTi)

This includes emissions created indirectly by our entire value chain, from raw material extraction to customer use of our products and services - providing sustainable whole-life solutions to our customers

In 2023, we set a near-term target to reduce all emissions by an average of **50%**, no later than 2030



Green Solutions: Mobile CCTV - Solar

We set out to devise a more sustainable solution

Working with our supplier partners, we are developing a fully sustainable and zero emissions solution for deployment of remote and mobile CCTV systems with maximum reliability



Solar Array

Primary power source for a 100% emissions free solution using very low power hardware



Easily decommissioned

Once use period is complete easily moved with no underground cable or foundations



Replaces traditional generator or replaceable battery solution

Zero onsite emissions



Green Solutions: Mobile CCTV - Solar



Green Saving 90%+ CO2



Status: In consideration for applications across CCTV portfolio.



Proof of concept completed at Moreton in Marsh test centre and now Approved as a NRTS Product



Desire to Integrate in the NRTS projects other large project works where temporary coverage is necessary

Green Solutions: Remote Solar powered CCTV

Traditional Diesel generator and delivery vs Fully solar stand alone install

Savings in Power Cost
(Assumed rate £0.30 pKWh)


£1,000
per unit

from **£1,000.00**
to **£0.00**



Savings eCO₂e usage
over 12 months


3,800kg
per unit

from **3,900kg**
to **100kg**



Green Solutions: Remote Solar powered CCTV

Traditional Diesel generator and delivery vs Solar solution scaled up to 100

Savings in Power Cost over 12 months



£100,000

*based on 100 cameras p.a

Savings CO2 usage over 12 months



380 tonnes CO2e

*based on 100 cameras p.a

Green Solutions: Remote Solar powered CCTV

Battery swap vs Fully solar stand alone install

Estimated energy cost saving

Based on 12 trips of 120miles and 14L diesel*



£19.60

@£1.40PL Diesel

Estimated CO2 saving

Based on 12 trips of 120miles and 14L diesel *



450kg CO2e

Green Solutions: Remote Solar powered CCTV

Battery swap vs Solar solution scaled up to **100**

Estimated power saving*



£1,960

*based on 100 cameras p.a

Estimated CO2 saving*



46 tonnes CO2e

*based on 100 cameras p.a

Green Solutions: Data & Technical Specifications

PRIMARY EQUIPMENT

Solar array

800W Solar array with battery back up

Battery system

Built-in battery redundancy system and remote monitoring of battery and power performance status, which enables proactive maintenance

Extendible fully re-locatable extendible tower

ASSUMPTIONS

CCTV Towers are specifically designed to be particularly low power, to enable reliable autonomy on solar alone. Based on two ARC Solar CCTV Towers on trial one with a 50w load and one with 60w, both of which are very low when compared with CCTV Towers that have not been optimised for Solar.

Solution: Battery Swap

Solar production from 1 x ARC System

- Power Generated from the ARC System: 1270kWh
- Co2e Offset: 887kg
- (CO2e Calculator: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>)

Battery swaps for 1 x Deployable CCTV System

- Fuel Consumption (based on distance and MPG): 14L
- Co2e Per Vehicle Trip: 37.5kg
- 12 Trips Annually: 450kg

- SICS/ARC Deployment Site: 120-mile round trip*
- Delivery vehicle: 40MPG
- Deployment Location: Brighton

*Results can be factored directly according to driving distance
For example, a 20 miles round trip would yield reductions of 75kgCO₂e PA and £3.26 cost savings

Solution: Diesel Generator

- Diesel Generator performance varies widely, but assuming a correctly sized and well performing Generator, it would likely burn 0.5L per day, 182.5L per annum, and 1L of diesel produces 2.68kg of CO₂e when burnt, so a possible annual CO₂e production of 0.5 tonne to power each of these particular towers, using diesel generators.
- Carbon conversion factor of 2.68kg CO₂e per litre of diesel (UK Government GHG Conversion Factor for Company Reporting 2022 Condensed Set Version 2.0) is 11.3 tonnes CO₂e per annum

Equipment Deliveries

- There will be a legacy 100kg of emissions for delivery of the trailer. If the vehicle is electric and uses renewable energy to charge then this can be reduced to zero.



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