Solar PV Cleaning Report

Client:	**Clean Earth Energy Ltd**
Site name:	**Slough Court**
Address:	**Stoke St Gregory, Somerset**
Helios Project Manager:	**Robert Harley**
Date of Clean:	**5th, 15th & 16th June 2020**

Contents:

Initial Inspection & Comments

The cleaning of the solar panels was carried out over three visits, the first visit there was an issue with the water supply, the second visit there was quite a delay in setting up and in reality, the cleaning would not have been able to be completed in only one day.

The first visit that Helios started cleaning we arrived on site at around 8.10 a.m. The set up took us approximately 3 hours due to having to wait for the water to fill our tank and waiting for the cows to be moved. When we started on the roof, we found that the panels required a lot more passes of the robot that we had envisaged, and a lot more water.

On our next visit to site on the 15th June, we had our water supply and access ready to go and restarted the cleaning and completed the first roof and part of the second roof by 6.45 p.m. that evening.

All panels appeared to be in good condition (dirt aside) with no cracked or broken panels visible.

Helios were on site at 8.00 a.m. on Tuesday 16th June to complete the second roof. Cleaning was completed at around 2.30 p.m. and Helios left site at 3.10 p.m.

Images and recommendations are in the following pages.

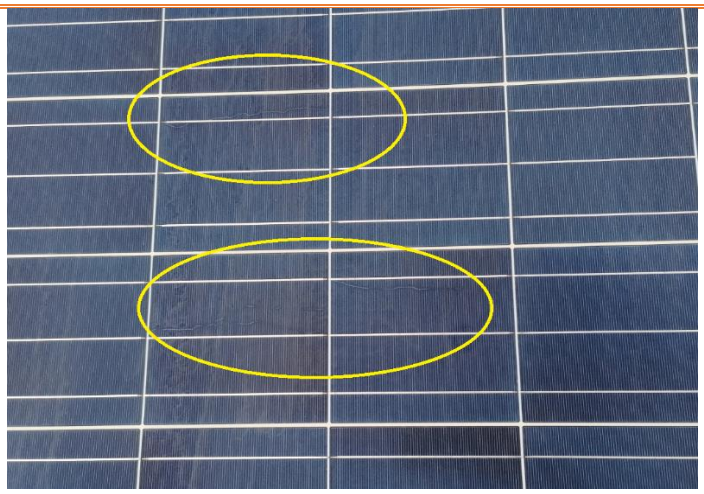
Photographs & Comments

	First roof prior to cleaning
	First roof during cleaning
	First roof completed

Photographs & Comments

	Contrast between cleaned array and dirty array behind
	Robot after 4 passes
	Contrast between clean and dirty panels on second array.

Photographs & Comments

	Second roof prior to cleaning
	Second roof after cleaning
	"Snail Trails" on panels. May require further investigation

General Comments

Installation: Good panels, well installed. System possibly not designed with maintenance or cleaning in mind. No spacing between the columns of modules for access.

Condition of array: Array appears to be in fairly good condition, and came up very well after cleaning finished. No lichen appearing that's usually to be expected on a rural installation of this type.

Condition of roofs: Appear to be in good condition for age where visible.

Water pressure: Good. Eventually. Water provided, together with water pump, enabled sufficient water pressure.

Water access: Good, when set up in front of arrays. Water location ideally suited to the project and where we were able to set-up.

Roof access: Good via cherry picker.

Conclusions

The panels are generally in good condition, although heavily soiled.

The system does not appear to have been designed with access and maintenance in mind, so any future cleaning will benefit from using a solar panel cleaning robot again rather than from water fed poles via a reach and wash system.

It is doubtful that the same level of cleaning could be achieved with anything other than a robot. This is because every panel needed at least 8 passes of the robot to bring it up to a satisfactory condition. Some panels, despite having in excess of 12 passes of the robot with the stiffest brushes available, still could not be cleaned perfectly. These were predominantly on the most upper and lower rows of panels.

Recommendations

In addition to the routine annual maintenance performed on the mechanical and electrical elements of the PV array, a clean every year with the robot should suffice to keep the panels in good condition, ideally in late winter or early spring.