Solar energy production after cleaning (PONS)

Effect of soiling and cleaning of solar parks in the Netherlands

Introduction

Problem setting: Cleaning advice for solar panels in the Netherlands varies greatly

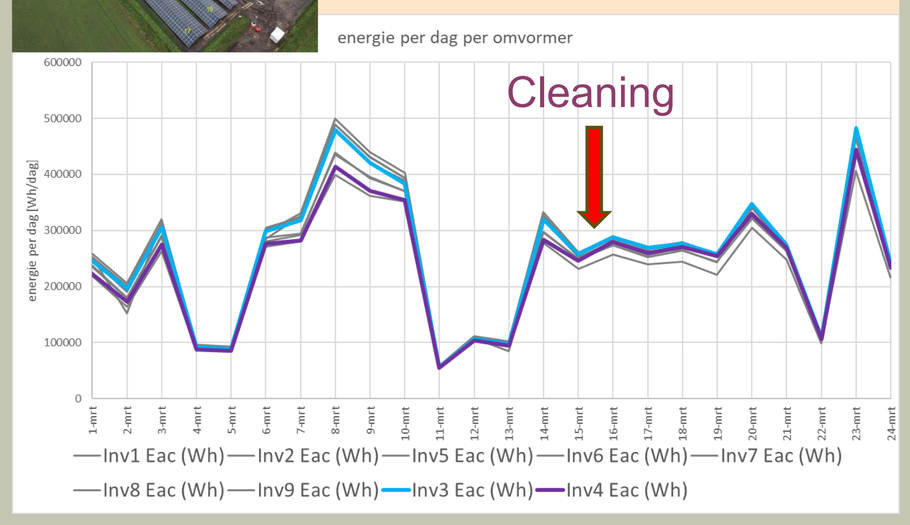
Goal: **Create a basis for a differentiated cleaning strategy**

By means of **Applied research** into the **effect of soiling on the energy yield** at the participating solar parks

Method: professional partial cleaning

Cleaning robot | Manual cleaning

Method: data analyses



Method: calculating 'cleaning effect' (Clef)

$$Clef = \frac{Yield_{PV\ clean,after} - Yield_{PV\ clean,expected}}{Yield_{PV\ clean,expected}}$$

$$Yield_{\text{PV clean,expected}} = f \cdot Yield_{PV\ not-clean,after}$$

$$f = \frac{\sum Yield_{PV\ clean,before}}{\sum Yield_{PV\ not-clean,before}}$$

f can be summed total, per month or per irradiance interval

Results: 'cleaning effect' (Clef)

	Clef Total [%]	Clef Monthly [%]	Clef Irradiance interval [%]
1 week	2.0	3.7	2.4
2 weeks	2.0	3.7	2.6
1 month	2.2	3.7	2.6
1 quarter	3.7	3.9	3.8
1 year	3.2	2.4	2.6

Results for 1 participating solar park after cleaning

Consortium

Carleen van Hengel c.d.n.van.hengel@pl.hanze.nl
Evert Jan Hengeveld e.j.hengeveld@pl.hanze.nl
Hans van Weerden j.w.van.weerden@pl.hanze.nl
Marten van der Laan m.d.van.der.laan@pl.hanze.nl
Martien Visser b.m.visser@pl.hanze.nl
Project lead & contact: Sandra Bellekom a.a.bellekom@pl.hanze.nl