

## CASE STUDY

**Friesian Dairy Farm use Instant On Cleantect to make their solar project more profitable - with little hassle.**

### OVERVIEW

Leyendekker Family. It is located in Tulare, CA and has a fixed tilt ground mount 1.107 MWdc solar array.

Every dairy farmer knows that their operation kicks up a lot of dust in the air. If you have solar panels nearby, that means panels get dirty quick and production drops. But it's a hassle to wash the panels every month in the dry season. There has to be a better way.

It was decided to install the IO Cleantect Solution on one of the solar array's 37 inverters. By comparing the inverter that had IO Cleantect on it's panels to the non-IO Cleantect inverters, it was possible to measure real time the difference in production.



**23.52% increase**  
in production

until non-IO Cleantect panels were brush-cleaned.



The Instant ON Cleantect PILOT at Friesian Farms cleaned the bottom row in this picture.

*"The IO Cleantect system was more effective than we originally thought. We have had it operating for 4 months now*

*- we were surprised how clean it has kept the panels with zero effort or hassle for us. It has required no maintenance and we can control the entire system from our phone. It has been great to see our panels looking clean and productive everyday"*

**- Friesian Farms**

# Results



**23.52% Increased Production**



**\$25,595 in additional production first year. \$872,579 over 25 years.**

\*15% production increase, \$0.10/kWh,  
1107 kW system



**<1% soiling losses.**

At this site, the panels would lose up to 0.66% production every day. Over 10 days, that is a 6.6% loss. RST stayed ahead of the soiling and kept panels clean.



**3-5% production increase from rain.**

Rain only helps a little bit when it comes to taking off caked-on dirt.



**Total Water Usage:**

\$3.37 - cost of water for 37 washings  
(878 gallons)



**Hassle Free:**

Not once did the owner need to do anything with the IO Cleantect system or the panels with IO technology. The system can be controlled by phone so increasing the number of cleanings during the dry season only took a few seconds.



**Warranty Compliant:**

Due to IO Cleantect gentle rinsing with filtered water. No detergents, high pressure or abrasive material were used.





# The Site & Installation

On March 11, 2020, The IO Cleantect solution was installed on one of Friesian Farm's inverters - 1.107 MWdc Canadian Solar 315W Panels, and compared against the other inverters at the site.

The Leyendekkers set up a 1" female valve and a 120V outlet next to the PILOT location and the Instant ON Cleantect system was installed in one day.



The IO control system and electrolysis system hooked up to the 1" valve and 120V outlet provided by the Leyendekkers.



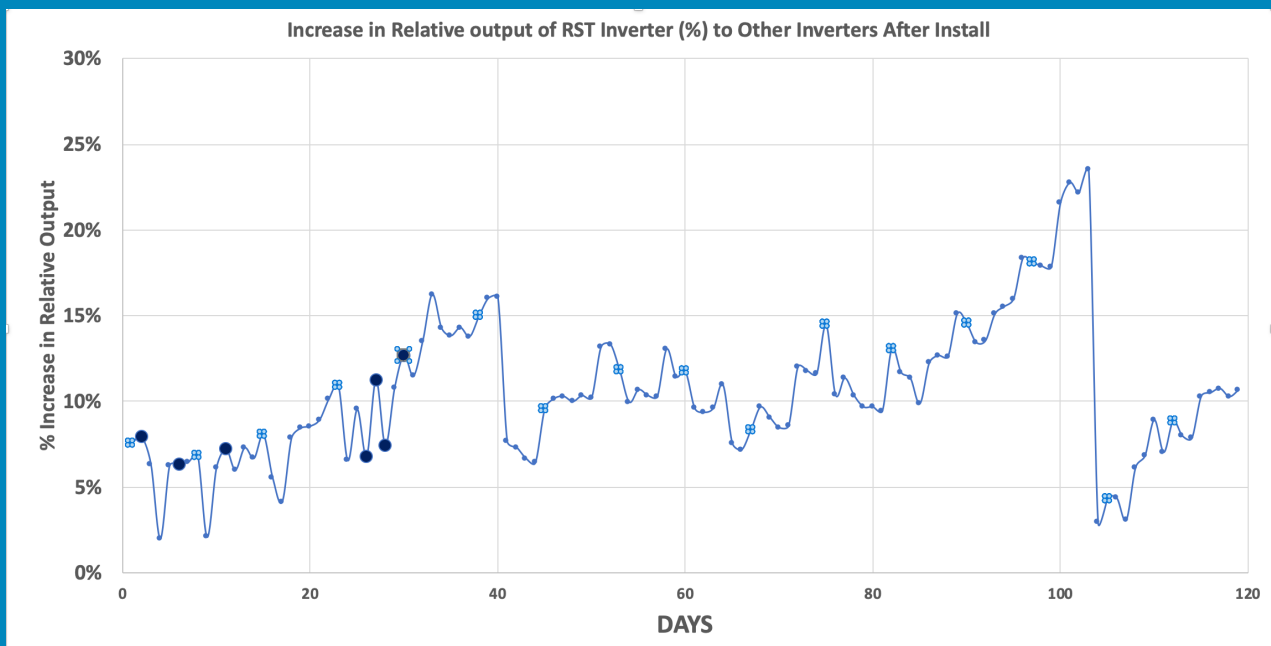
The IO Cleantect system was installed on 1.5 rows of panels on the bottom right.



# Data

The PILOT project was installed on 95 panels on March 11, 2020 and ended on July 11th, 2020.

Production increase got as high as 23.52% before the panels were brush-cleaned. This is despite the rains in March and April and the Leyendekkers regularly spraying the non-IO Cleantect panels with a water truck.



Not even bird droppings stay on with IO Cleantect.