

# Case Study: Shanghai, China



## Shanghai Dust

Location: Shanghai, China  
System Size: 36 X Upsolar Smart Modules

### Summary

This project, located in downtown Shanghai, is one of the first smart module solar systems in the People's Republic of China.

### The Challenge

Many PV installations in China are facing challenges associated with air pollution. Heavy soiling leaves a heavy film of particulate matter on the surface of the PV module, blocking sun light and reducing the power performance of the PV system. These uneven build-up's create an even greater problem when considering that the lowest performer of the group will drag the others down.

### The Solution

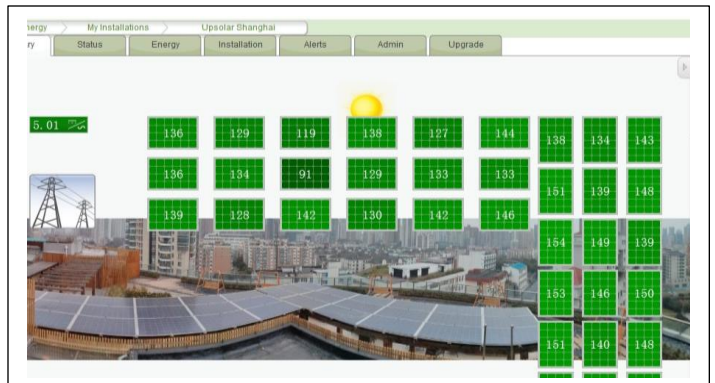
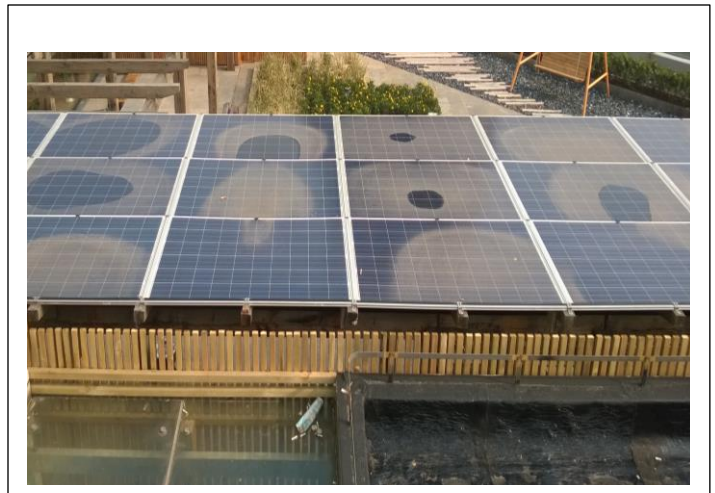
Upsolar smart modulest optimized by Tigo Energy's module-level MPPT and monitoring technology allows installers, systems owners, and support personnel to identify system issues the minute they happen.

Every Tigo optimizer is equipped with advanced sensors that can detect and control the voltage and current of each PV module. Tigo Energy's software then automatically analyzes this data and provides real-time alerting to system owners and O&M providers.

This allows for fast, effective and lower-cost management of solar assets with stable energy production.

### The Results

After commissioning the system Tigo Energy's technology detected several modules showing low performance. Upon further investigation it was discovered that these modules had soiling issues, the modules were producing significantly less (10% lower) than others. After clearing, the modules moved back to maximum performance.



[Explanation of data if necessary]

***“Upsolar Smart Modules optimized by Tigo Energy allow us to pin-point issues and know whether we need to send an electrician or a window washer. As the owner of a distributed asset, this is a very important aspect to our long-term ROI by ensuring that our investment is well protected and requires minimal cost to maintain.”***

**Eric Liu: Group Deputy General Manager**

