



IP65 (electric part)

PHOTOVOLTAIC CLEANING ROBOT

— efficient power generation intelligent assistant

The photovoltaic cleaning robot (PSCR) is revolutionizing the way of traditional manual cleaning mode. The PSCR operates with its spiral roller brush to clean the pollutants on the PV surface and improve the efficiency of the power station. Compared to manual cleaning with long intervals and high costs, PSCR can achieve daily and scheduled cleaning with low single cleaning costs. PSCR has advantages such as self-power supply, self-energy storage, no need for external power supply, water-free cleaning, and free setting of operating time and frequency, which are being increasingly applied in PV intelligent operation and maintenance.

Functional Characteristics

/ Self-power supply, self-energy storage, no need for external power supply

Water-free cleaning	Wide communication modes (4G, Wi-Fi, LoRa)
Strong vertical and horizontal obstacle-crossing ability	Easy remote control, operation can be set freely
High safety factor, sensitive attitude self-correction	Large battery capacity, capable of remote cleaning
Extensive functions (weather linkage, hot spot detection of PV panel, etc.)	Modular design (reduce manual daily maintenance, facilitate the replacement of product accessories)

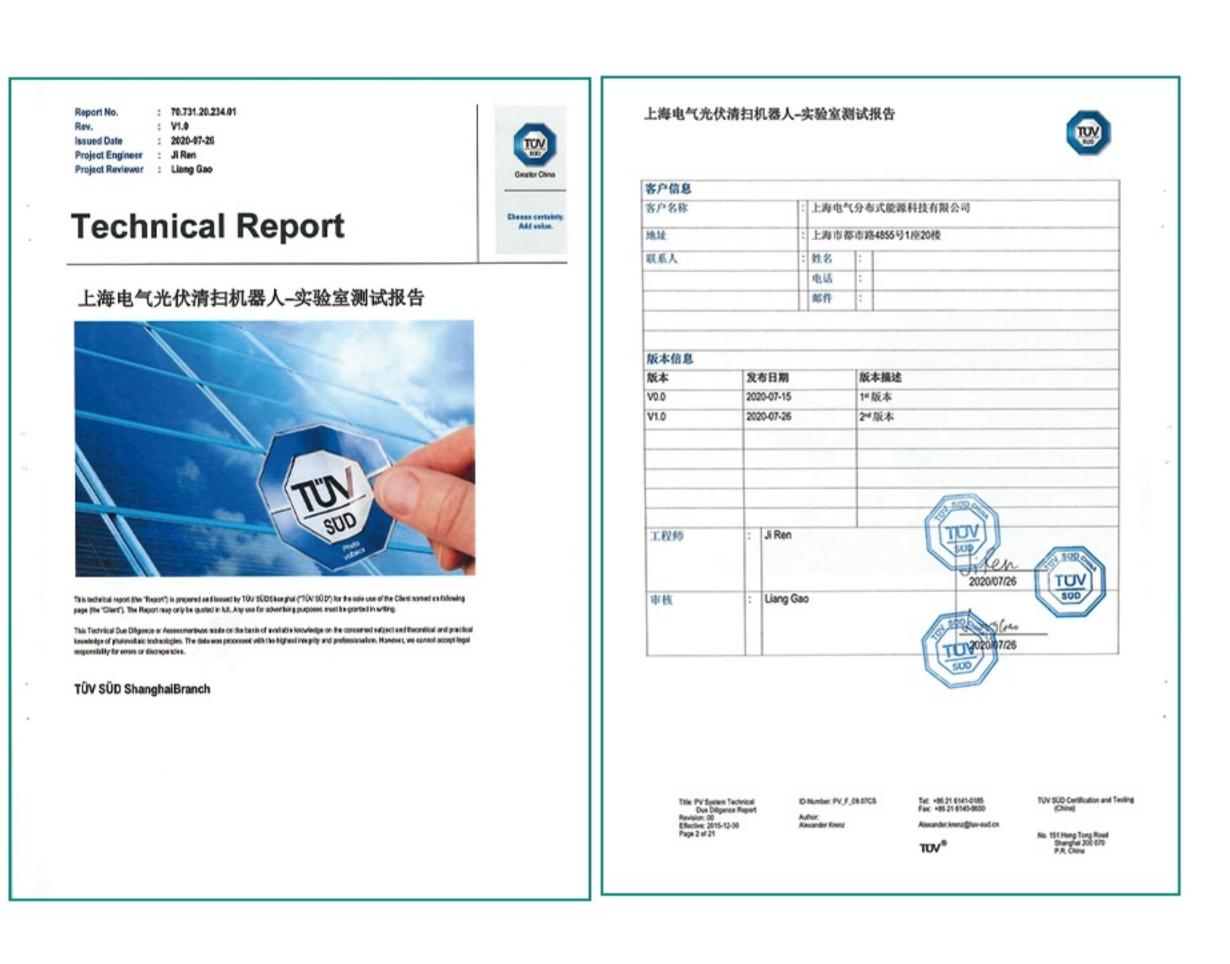
Technical Specifications of PSCR

Adaptive Capability

TUV Test Report

PSCR has passed the TUV SUD cleaning test for 5000 consecutive times. The test results showed that PSCR has no impact on the PV module glass, no hidden crack of the module and no power attenuation of the module.

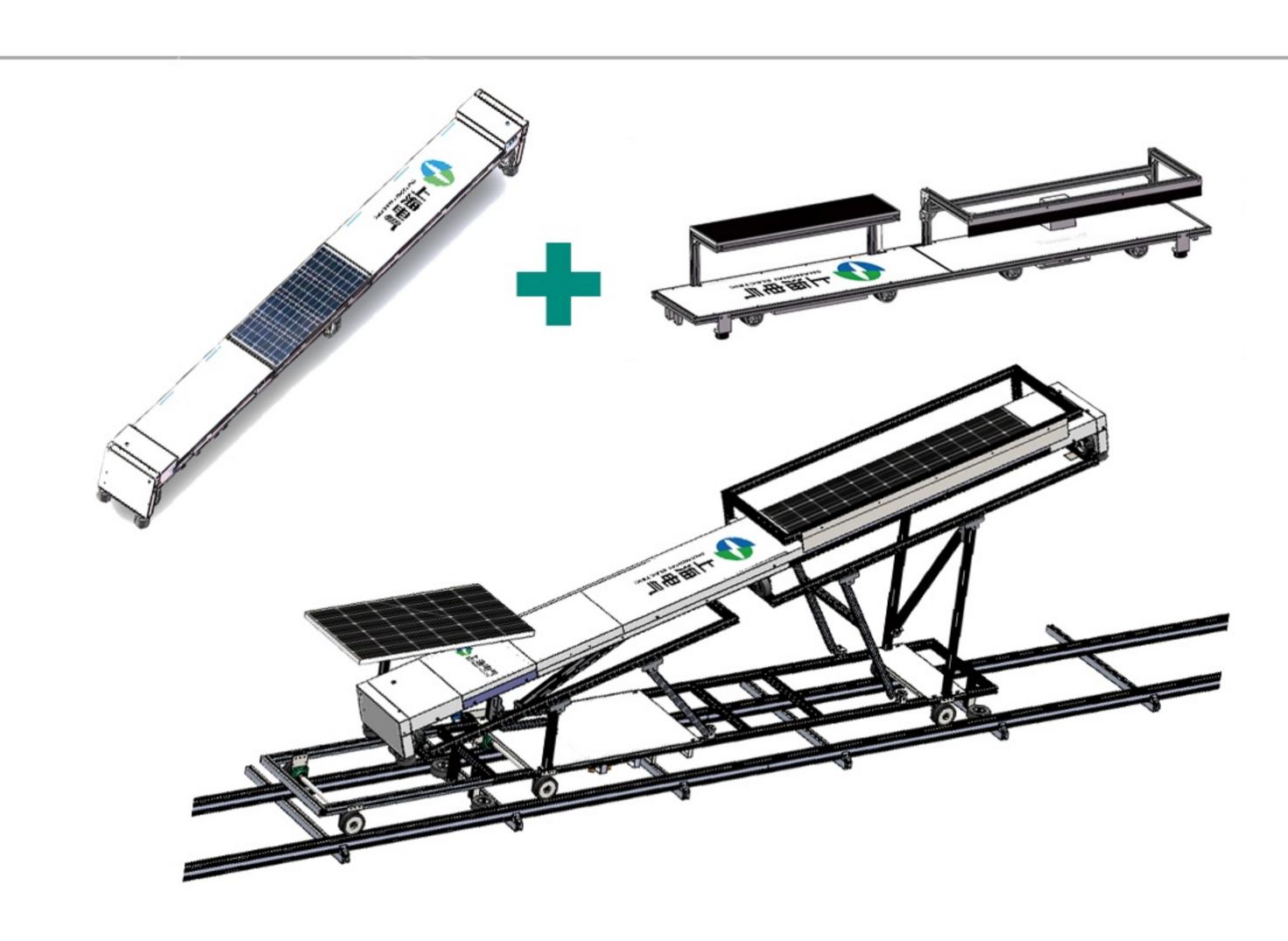
PSCR can be used in Gobi and desert PV power stations, tidal flat PV power stations, fishery complementary PV power stations, agricultural PV complementary power stations, coal mine subsidence area PV power stations, mountainous region PV power stations, and commercial roof PV power stations. PSCR can effectively improve the efficiency of power generation, save manual cleaning costs, reduce the risk of PV panel hot spots, and reduce the safety risks of personnel working at height.



Conventional PV power stations can increase by about 5%~7%.

PV power stations with dust or other light pollution can increase by about 7%~12%.

PV power stations with serious iron dust and sand pollution can increase by about 12%~30%.



Project Applications



Applications of PSCRs in Dubai PV power station

The project is located in the desert hinterland. With high-temperature, high humidity and strong wind and sand environment, the cleanliness of PV panels seriously affects power generation. In order to ensure the efficient and reliable operation of the project, Shanghai Electric PSCRs are adopted.

The PSCRs have been operating safely and stably so far. Compared to the PV power generation data that are not cleaned for a month, the power generation efficiency increased by 26%, which greatly improving user's ROI.



100MW ground PV power station in Gansu, China



20MW fishery complementary PV power station in Shanghai, China



20MW PV power station in Pakistan