SOLUTIONS FOR ALL STAGES OF THE SOLAR LIFECYCLE

Soiling loss measurement and categorization can begin at any stage of a project's lifecycle — at the early stages of development to improve bankability, or the sunset years of a PPA agreement to meet production guarantees. If you want to determine a new project's viability, Fracsun can provide the country's largest real-world soiling dataset.

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STAKEHOLDER BENEFITS

ASSET MANAGERS AND O&M CONTRACT HOLDERS

Monitor the effectiveness of your cleaning program to ensure KPIs are being met.

DEVELOPERS, BUILDERS, AND EPC FIRMS

Using local measurement data, improve confidence in production estimates, and forecast project performance with certainty.

ASSET OWNERS

Optimize plant performance using Fracsun's financial modeling tools to increase ROI, and decrease Levelized Cost of Energy.

CLEO

AI-POWERED SOILING LOSS ENGINE

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Fracsun's CLEO AI is an advanced soiling loss modeling tool that integrates precise local ground-based soiling loss measurements, detailed weather data, and machine learning algorithms to deliver accurate, localized simulations of annual soiling losses.

Unlike static approaches, the dynamic CLEO AI model accounts for evolving factors like particulate matter, seasonal trends, and weather, empowering solar production modelers to fine-tune their models, optimize maintenance plans, and maximize returns on their solar investments.

KEY FEATURES

- Leverages an extensive network of soiling monitoring stations deployed across 27 countries, representing over 12 GW of installed solar capacity
- Continuously learns from this growing dataset, incorporating new parameters like module tilt and weather forecasts to deliver increasingly precise results
- Empowers solar production modelers to improve performance modeling and maximize returns
- Enables proactive management of soiling challenges, optimizing maintenance plans and production forecasts to maximize ROI

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ARES
SOILING STATION

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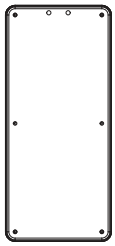
Soiling causes the greatest avoidable performance loss in PV systems. Without proper mitigation, an array can reach over 40% loss of its production output.

The cost of washing a photovoltaic system can be between a third and a half of the total operating budget. With our toolset, your team can confidently manage soiling loss with real actionable data, telling you exactly when to clean.

ARES - INTELLIGENT SOILING LOSS MONITORING STATION

- On-site soiling loss values
- Clean irradiance measurement
- PV spectral response
- Automated self-cleaning
- Self-powered and standalone
- Easily deploy multiple stations
- Universal mounting
- 30-minute install / commission
- Cellular or RS-485 connectivity
- Fracsun web portal
- API integration
- Weather forecasting
- Wash date optimization



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ARES Soiling Station

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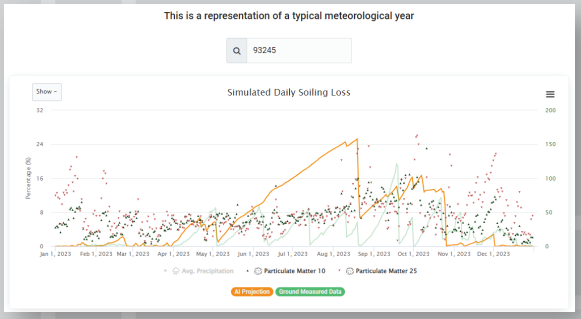
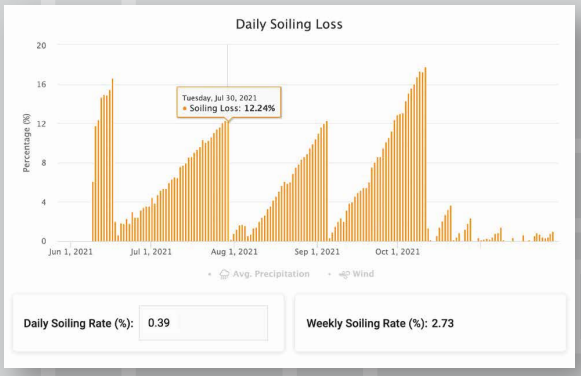
WEB PORTAL

Fracsun's custom software enables your team to access device data, view charts, and visualize optimal cleaning schedules.



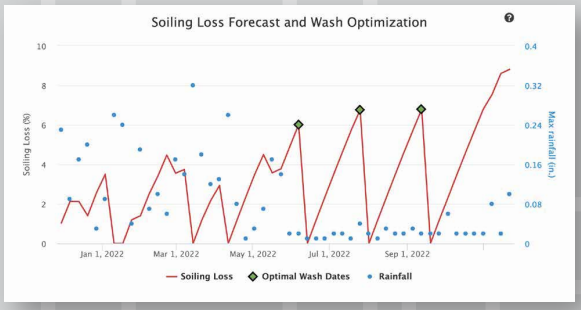
CLEO AI

Fracsun's CLEO AI is an advanced AI-powered soiling loss modeling tool that leverages an extensive network of ground-based soiling monitoring stations, detailed weather data, and machine learning to deliver highly accurate, localized forecasts of annual soiling impacts, enabling solar production modelers to optimize maintenance strategies and maximize returns by proactively accounting for dynamic factors like particulate matter, seasonal trends, and weather.



MEASUREMENT

ARES generates a daily soiling loss value by comparing irradiance measurements of clean and soiled large-area reference cells. The Wash Extension hardware automatically washes the clean reference cell on a daily basis, eliminating the need for manual cleaning and measurement.



ANALYSIS

View and analyze ARES soiling station data through the web portal. Check charts, monitor device health, or download raw data for custom analysis. Easily import data into your own monitoring platform using Fracsun's RESTful API.

WASH FORECASTING

The Wash Anaylsis tool utilizes ARES-measured soiling rates, annual production, value of solar, cost to wash, and historical weather data to generate an optimized wash schedule. Clean your PV plant with the utmost confidence.

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