KONTEK GROUP of COMPANIES

Youngest among group companies and at start up stage

SOLARIFY

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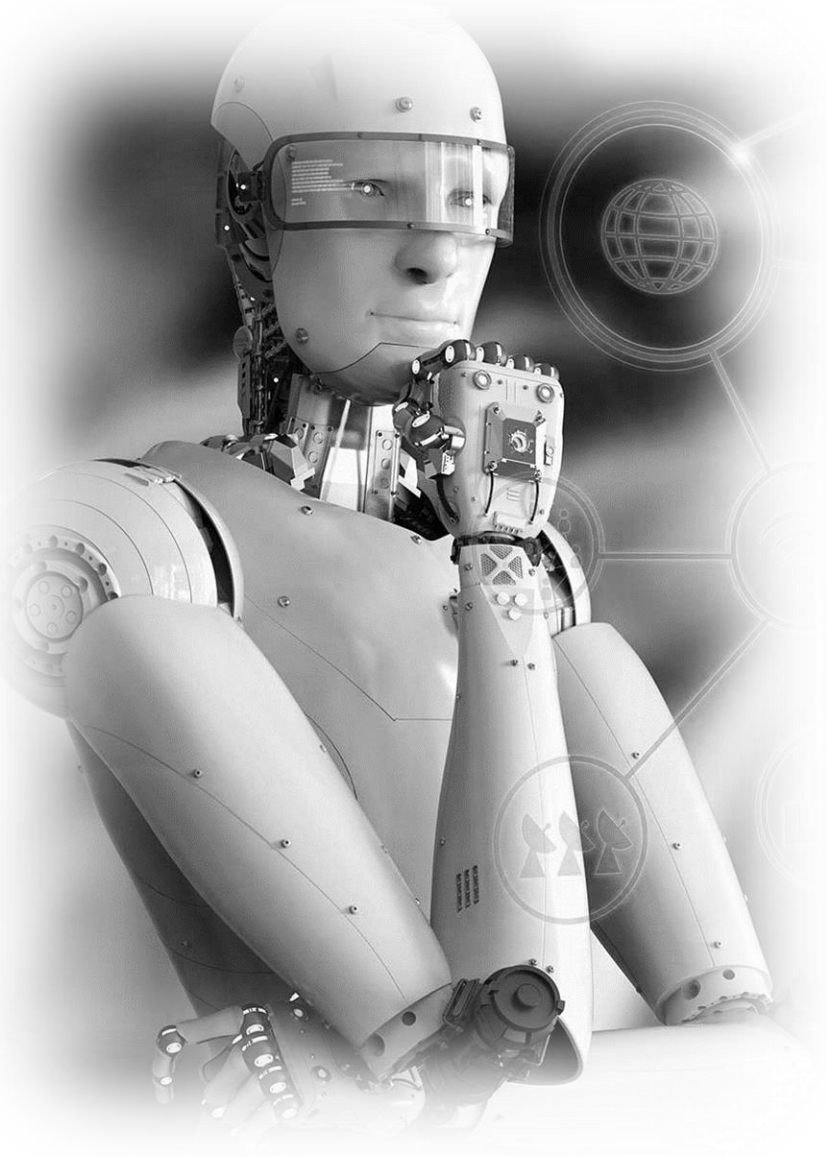
"Artificial Intelligence Powered Solar Power Plant Performance Analysis Platform"



solarify.io

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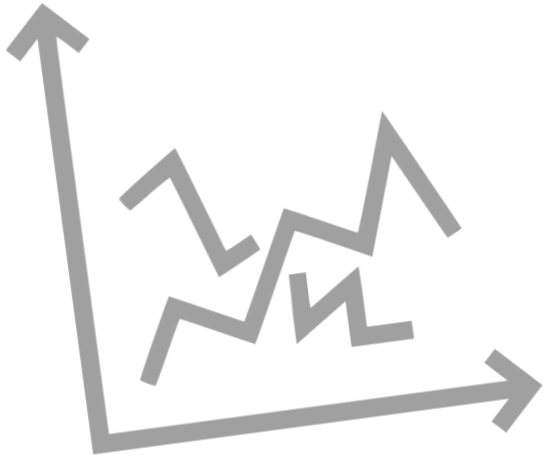
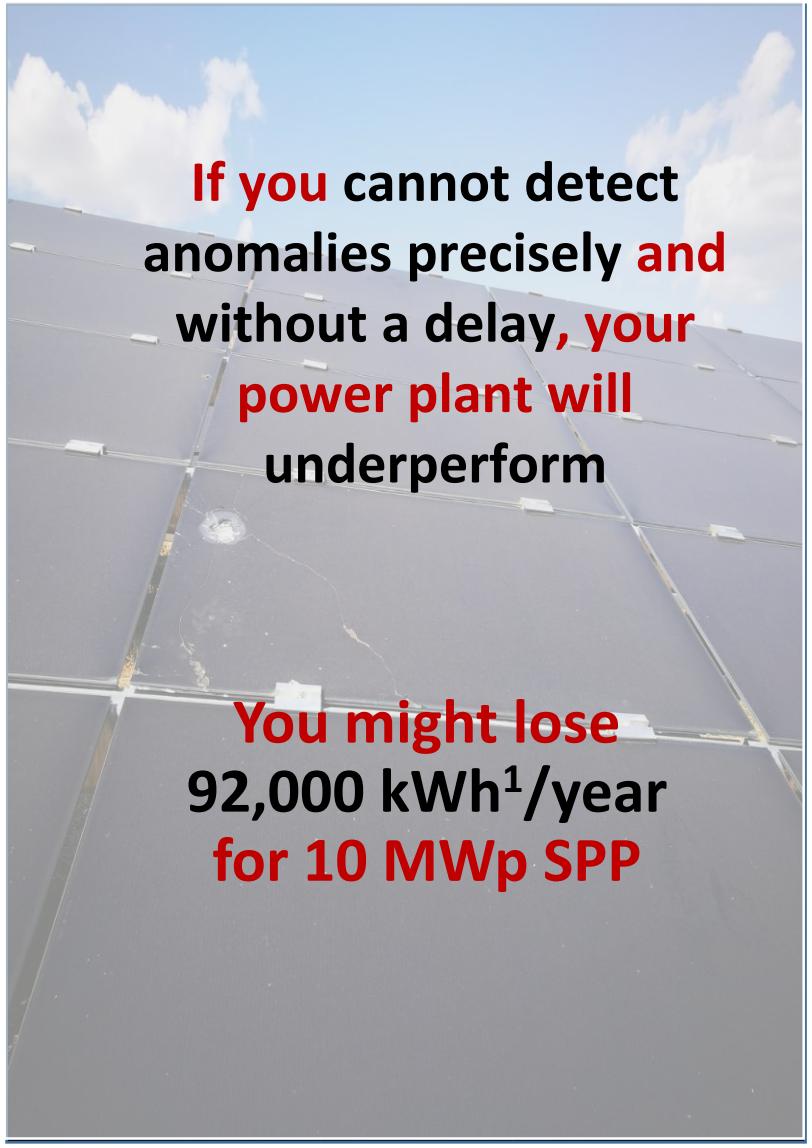
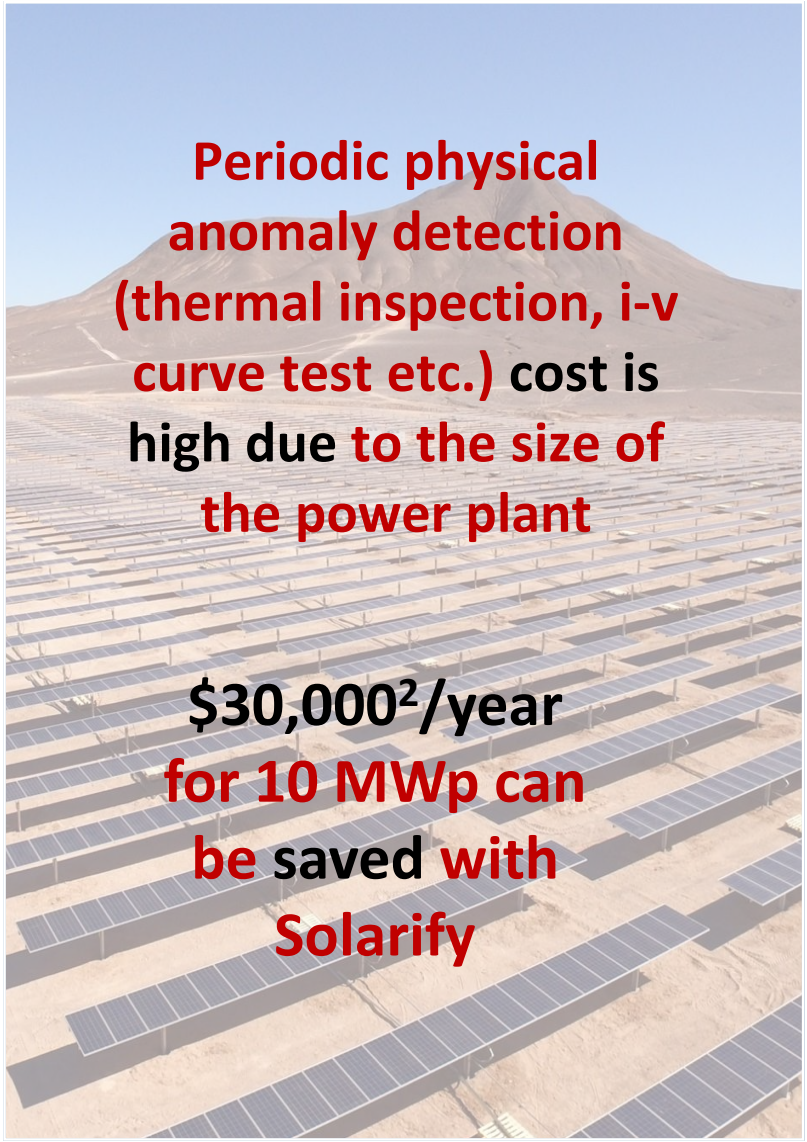
You cannot **manage** what you cannot **measure**







1- Data is taken from a real power plant with 5MWp peak power, if string problems were not identified in time ,theoritical of 46MWh energy would be lost between full thermal and i-v curve measurement cycles. Energy loss is scaled up to 10MWp from 5MWp.
2- Cost of thermal & ı-v curve measurement for entire 10MWp solar power plant

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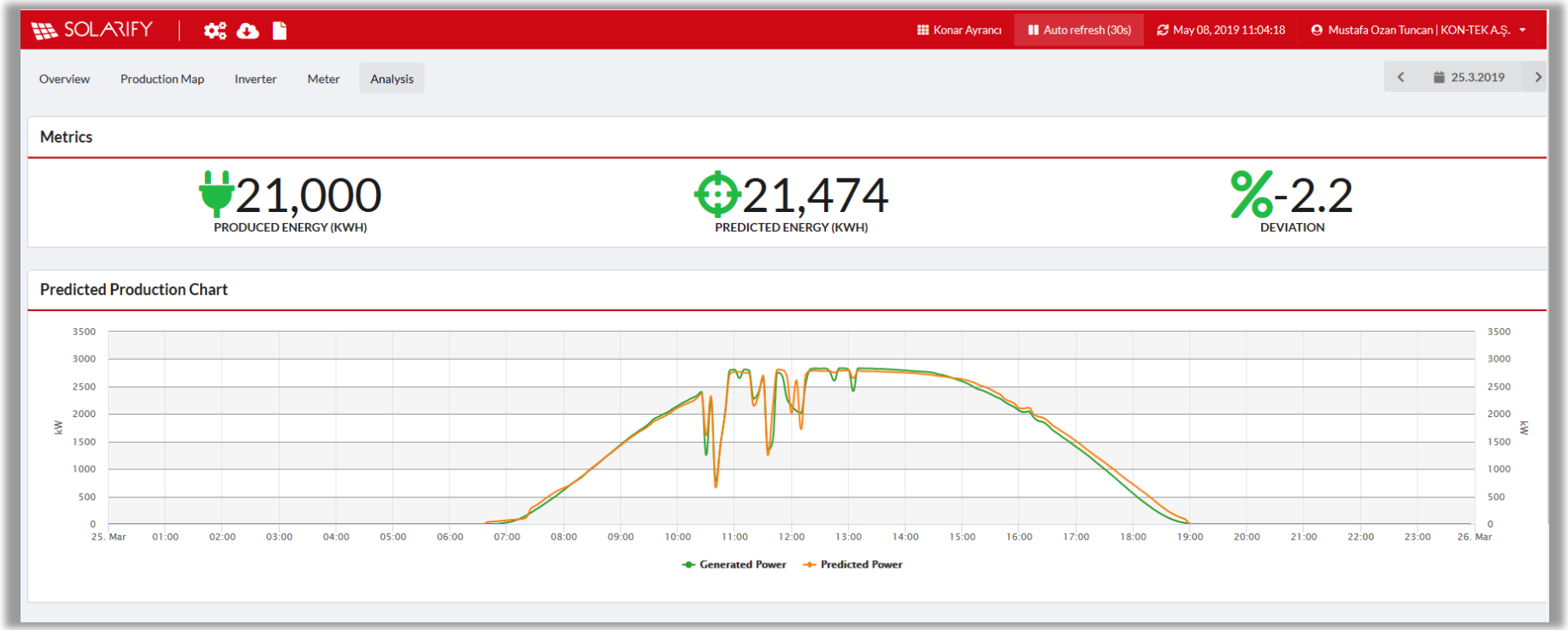
Uses Artificial Intelligence to find degredations with 98% precision.
With Solarify Prediction algorithm, no problem is missed.



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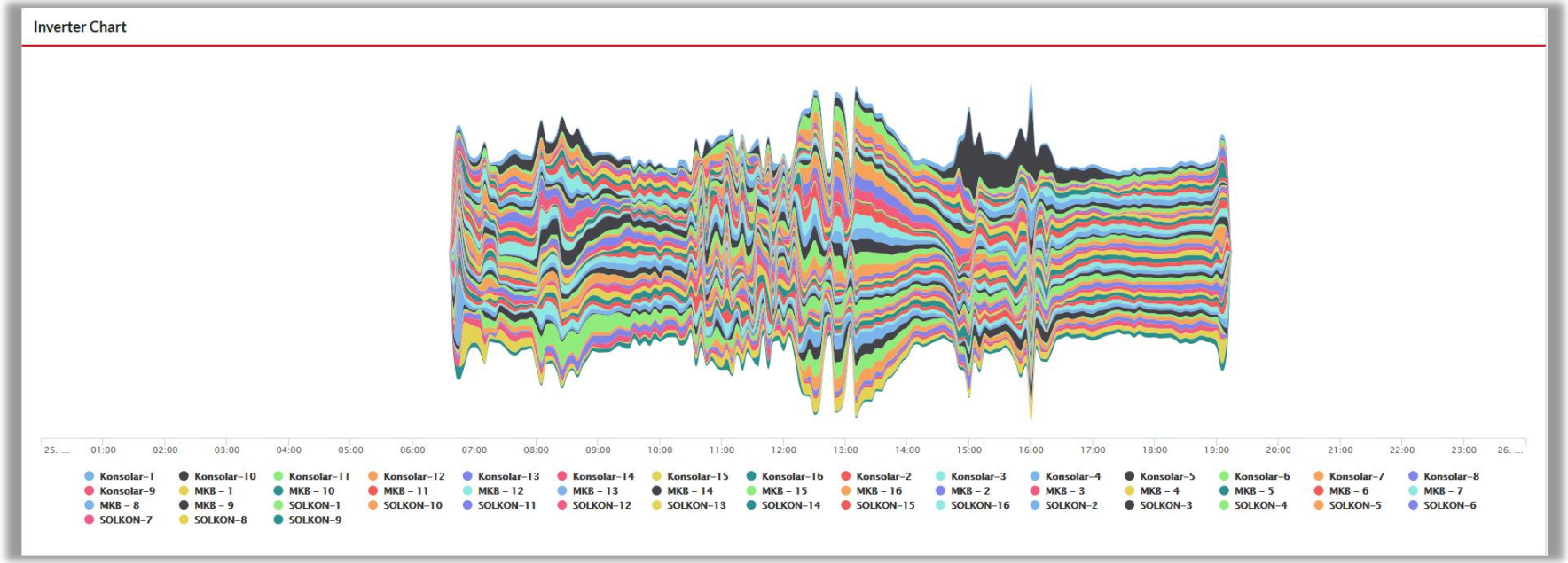
Models each devices with real data and predicts their production with high accuracy, with trained data you **will never need** a I-V curve measurement or thermal inpection for entire power plant.



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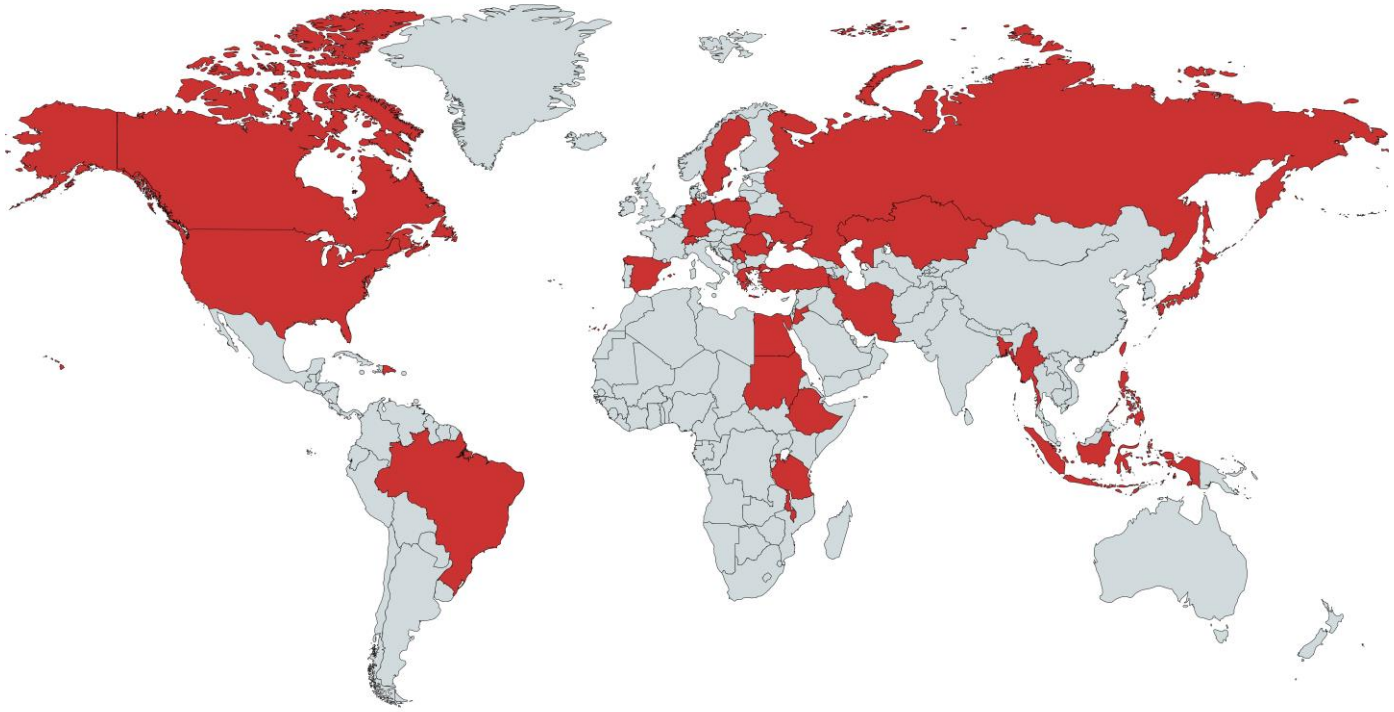
Observe, measure & manage all your Solar power plants in one platform



Solarify
Cloud
Database

36 JTI Manufacturing Locations

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Solarify Smart Reporting System allows you to see if your SPP is performing well.

Daily , Monthly and Annual report

✓ Predicted energy losses of problems

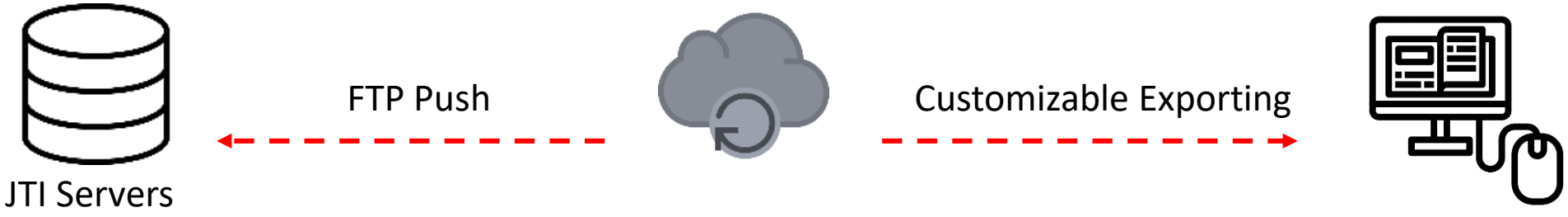
✓ Predictive analysis

✓ Preventive maintenance tracking

✓ Ticketing for o&m services

Problematic Subsystem	Start	End	Details of Outage	Action taken	Predicted Energy Loss (kWh)	Responsible	Module Availability Weight	Module Not Availabile Time (hours)	Power Non Export Time (hours)
Inverter 1	1.04.2019 07:30	1.04.2019 08:30	Inverter outage due to isolation alarms	Isolation mesurements are done, inverter is operational. Will be kept under observation	20	O&M	0.05	2.0	0.1
Inverter 4	1.03.2019 12:30	1.03.2019 17:30	Inverter outage due to FAN problem	FAN has been replaced	13	O&M	0.05	5.0	0.3
Inverter 12 String 3	1.05.2019 11:05	1.06.2019 15:15	Bullet marks on 5 solar panels	5 new solar panels has been installed	13	O&M	0.005	4.2	0.0
Inverter 3 MPPT 1	1.03.2019 09:30	1.03.2019 11:55	Wildlife damage to power cables	Cables has been replaced	16	O&M	0.025	2.4	0.1
Entire Plant	1.07.2019 11:35	1.07.2019 14:55	Grid outage	Relevant parties are informed	11	NON-O&M	1	3.3	3.3

Your Data Will Always Be Your Data



Consolidating your solar system portfolio will enable ;

- Early warning of your local teams about their solar park thus **«Less Losses»**
- Early Warning about periodical preventive maintanances thus **«Less cut offs and more availability»**
- Monitor Global Solar Parks perfomances thus **«Tracebility»**
- Monitor CO2 foot print globally thus

«Enable global effect and support to global warming»

- All data and reports approved by an acredited 3rd party inspection company provides

« Reliability»

How SOLARIFY Works ?

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Your Solar Power Plants

Data Logger

Power plant data transferred via data logger to Solarify cloud servers

docker

redis

RabbitMQ

PostgreSQL

Solarify DataBase

High end cloud server with cutting edge database structure

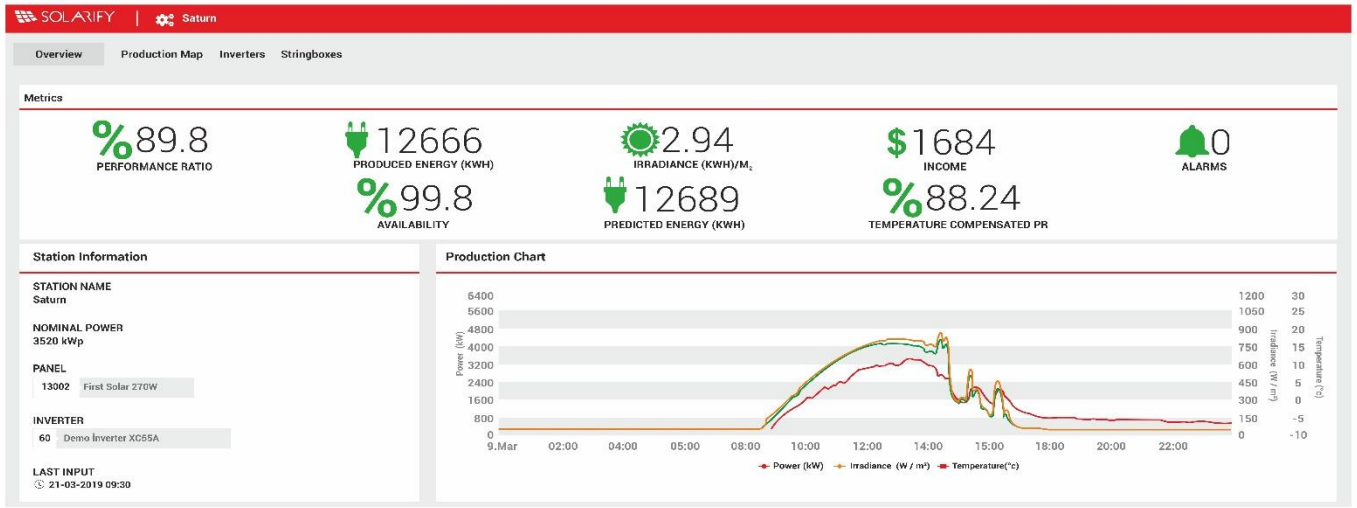
python

React

Solarify Backend & Frontend

Customized Solarify artificial intelligence algorithms For **predictive analysis.**

Minimalist Solarify dashboard with industry standard performance metrics



Solarify is accessible from everywhere with internet, separate mobile applications for IOS and Android.

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Whats the difference?

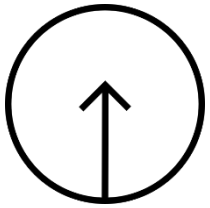
Conventional monitoring platforms

- **Are not precise**(98% accuracy) on anomaly detection
- Does not provide **proper** reporting
- Does not provide below metrics
  - IEC 61724-1 Temperature compensated PR
  - Sunspec alliance recommendation PPI with artificial intelligence
  - Availability
  - Compatable with Solar-log, Blue-log,Webdyn , Fronious Datamanager 2.0 and with other dataloggers.
  - Flexibility in displaying measured and calculated values
  - Live production forecast
  - Inverter efficiency

Why SOLARIFY loggma ?

Reliability

IEC 61724-1 standard calculations and Sunspec alliance performance metrics



High Tech

Uses artificial intelligence algorithms

Accuracy

Works with real data and artificial intelligence

Fast Action Time

Suggestion frequency of 5 mins

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Offers advanced **monitoring & analysis** with artificial intelligence and smart reporting with o&m teams in one system.

iOS android

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Also Offers

- ✓ Real smart reporting where SPP owners can see the performans of their O&M service providers.
- ✓ 6 different alarm system supported with machine learning algorithms.
- ✓ Unlimited user accounts with different Access levels
- ✓ Mid-voltage energy and digital signal monitoring compatible with different RTU's (Wago, ABB etc)
- ✓ Seperate mobile app for IOS and Android with push notification capabilities.
- ✓ Automatic data transfer from its servers.
- ✓ Free import of historical data from other monitoring systems.
- ✓ Simple and elegant design monitoring platform with high analysis capabilities .
- ✓ High adaptivity, Solarify is compatible with Solar-log, Blue-log, Webdyn, Fronious Datamanger 2.0 and other dataloggers

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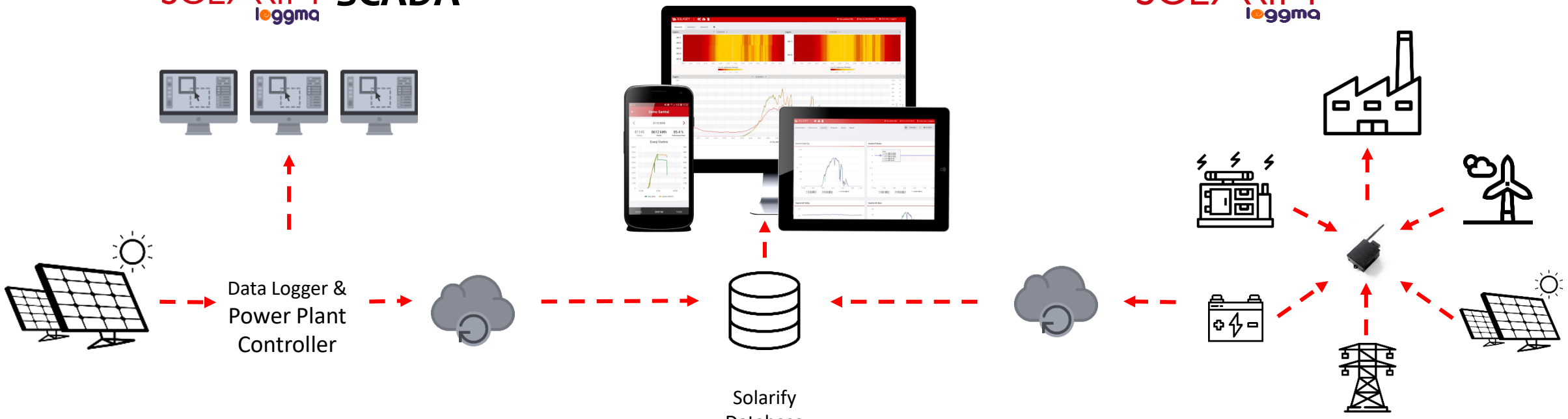
Installed in 200 MWp SPP

SOLARIFY loggma Solutions

SOLARIFY SCADA

SOLARIFY AI

SOLARIFY M-GRID



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Features	Solarify AI	Solarify PPC	Solarify SCADA	Solarify M-Grid
Real Time Monitoring	✓		✓	✓
Historical Analysis	✓		✓	✓
Analysis with Artificial Intelligence	✓			
O&M Management	✓			
Asset Management	✓			
Ticketing and Event Tracking	✓		✓	
Exportable and organized data	✓		✓	✓
Tracking Financial Status	✓		✓	✓
Mobile application for IOS and Android	✓		✓	✓
Five Minute Data	✓			
Remote Control Of Solar Power Plant			✓	
On Site Control		✓	✓	
Power Plant Controller		✓	✓	
Local Scada Servers			✓	
Capability of Switching Between Grid Connection and Island Mode				✓
Controlling Interconnected Loads and Distributed Energy Resources				✓
Autonomously Switching Between Energy Resources Depending On Cost				✓
One Second Data		✓	✓	✓
Grid Code Monitoring		✓		
Weather Forecast	✓			

Request a demo!
https://solarify.io/

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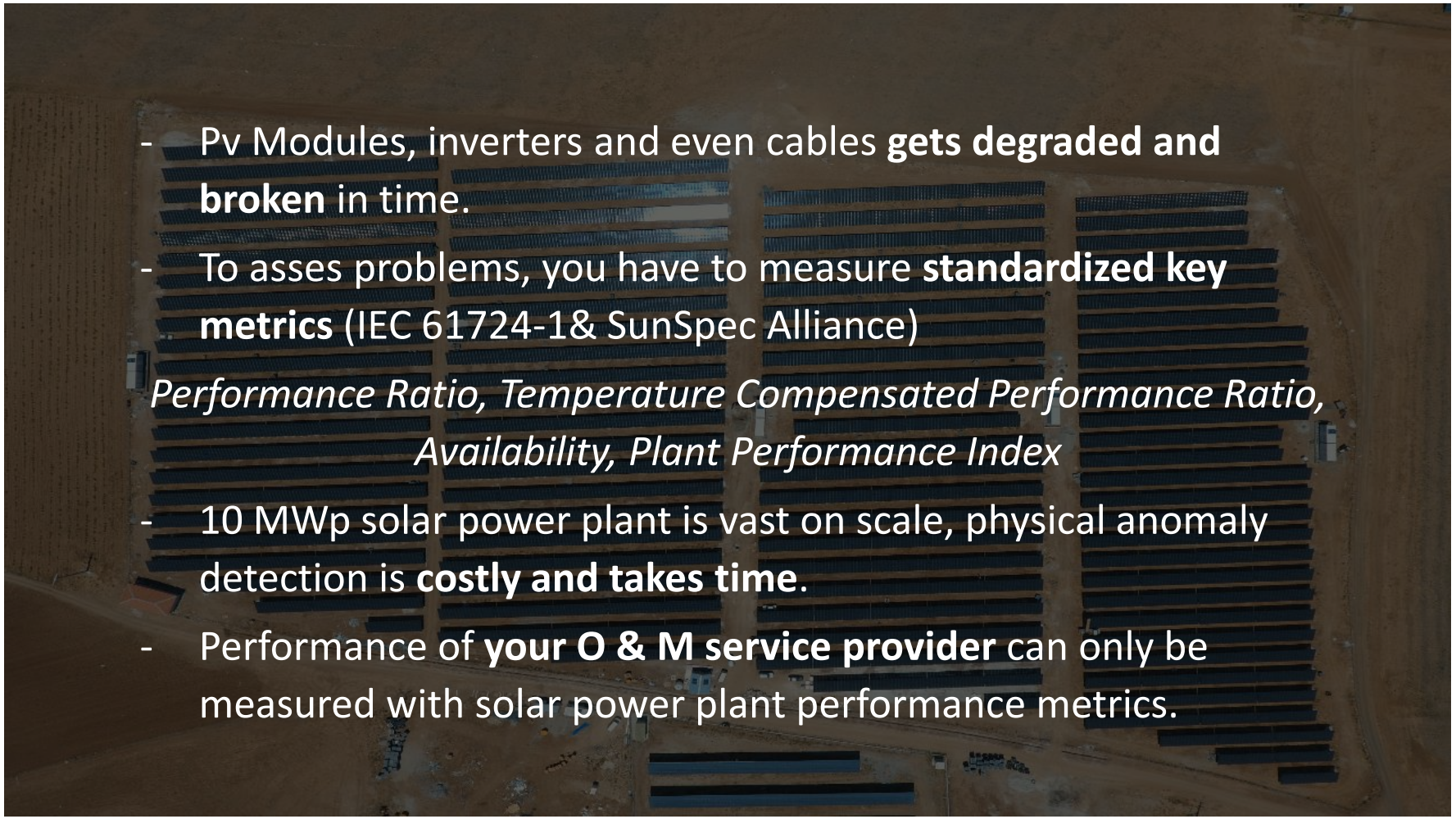

- Pv Modules, inverters and even cables **gets degraded and broken** in time.
- To asses problems, you have to measure **standardized key metrics** (IEC 61724-1& SunSpec Alliance)

Performance Ratio, Temperature Compensated Performance Ratio, Availability, Plant Performance Index

- 10 MWp solar power plant is vast on scale, physical anomaly detection is **costly and takes time**.
- Performance of **your O & M service provider** can only be measured with solar power plant performance metrics.

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- ✓ LOCAL SCADA
- ✓ POWER PLANT CONTROLLER
- ✓ WEATHER FORECASTING
- ✓ TICKETING AND FLEET MANAGEMENT SYSTEM
- ✓ PREDICTING FUTURE FAILURES