



**Laborelec**  
RESEARCH & INNOVATION

# TRUEYIELD ADVANCED PV PERFORMANCE DIAGNOSTICS, LOSS QUANTIFICATION AND LIFETIME MODELING

From fleet-level oversight to component-level precision.  
Maximize yield today — Prepare your assets for tomorrow

## SERVICE OVERVIEW

TrueYield by ENGIE Laborelec is a unified, data-driven solution that gives PV asset owners full transparency into energy performance — from portfolio-wide diagnostics to asset-level loss attribution and component-level root cause analysis.

Built on digital twin modeling and real production data, TrueYield quantifies every loss and reveals exactly how much energy and revenue is being missed — and why. With integrated support for lifetime extension modeling via PVOPs, the platform helps asset managers recover yield, optimize O&M, and plan for the long-term.

## EXPERTISE TYPE

- Owner's, Lender's, or Asset Manager's Independent Expertise.
- Bankable diagnostics and lifecycle management insights.

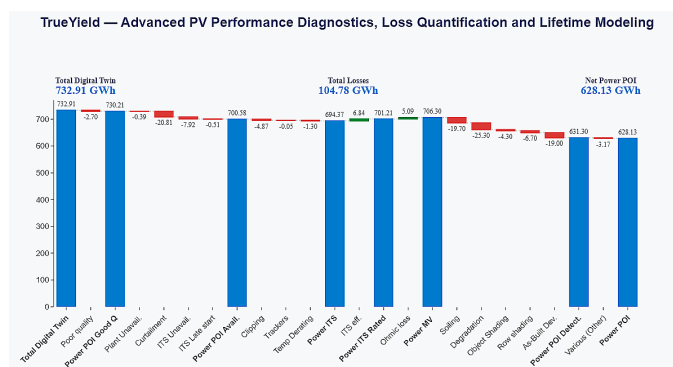
## LEAD EXPERTS

- Cheikhna Talebmoustaph, Ralph Bou Ghanem, Andreas Wabbes.

Experts in yield loss analysis, digital twin modeling, and repowering assessments.

## WHY CHOOSE TRUEYIELD?

- **One Unified Platform** – From fast fleet-level screening to deep technical diagnosis.
- **Bankable Insights** – Defend your yield gap with clear, data-backed evidence.
- **Lifecycle-Ready** – Plan repowering and lifetime extension confidently.



# HOW IT WORKS

## 1. FLEET-LEVEL SCREENING

- Fast performance scan across your entire portfolio.
- Identify and prioritize underperforming sites using minimal data.

## 2. ASSET-LEVEL LOSS ANALYSIS

- Digital twin comparison of expected vs. actual injected energy.
- Quantify each loss: soiling, degradation, availability, curtailment, and more.
- Know the energy you're missing and the financial impact.

## 3. COMPONENT-LEVEL ROOT CAUSE ANALYSIS

- Investigate inverters, trackers, strings, SCADA, or sensors.
- Reveal persistent inefficiencies and verify fixes.
- Validate recovery post-intervention.

## 4. PVOPS-BASED LIFETIME EXTENSION MODELING

- Technical & financial modeling of repowering or LTSA exit.
- Field inspections to support lifetime strategy decisions.

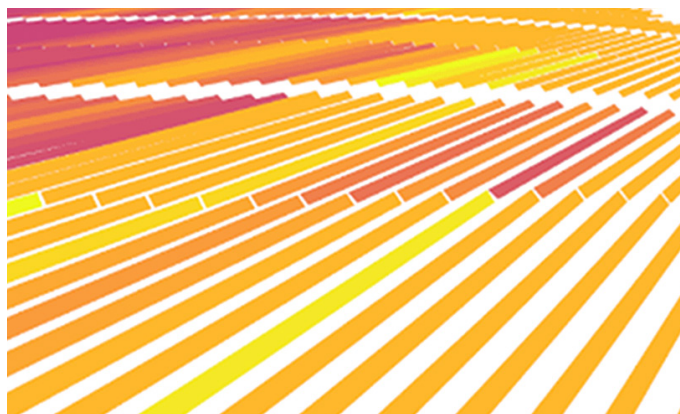
## CLIENT BENEFITS

- Full Lifecycle Transparency – See performance clearly, from P50 to injected kWh.
- Informed Decision-Making – Prioritize actions with confidence.
- Bankable & Defensible Reporting – Trusted by lenders and asset owners.
- Integrated Digital + Field Support – From diagnostics to long-term planning.

## REFERENCES

ENGIE Laborelec is a trusted partner to utilities, IPPs, and investors across four continents, with over 4 GW of PV assets under service or in pipeline. Our integrated approach yields an average ROI above 2200% within the first year, making us a partner of choice for some of the world's largest solar developers.

**Close the gap between expected and actual yield.  
Uncover your TrueYield™. Contact us today.**



## WOULD YOU LIKE TO KNOW MORE?

**ENGIE Laborelec**

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