

“PV Doctor” – the new Gigawatt player in the PV industry

SINGAPORE, 6 November 2025.

PV Doctor Pte. Ltd. (“PV Doctor”), a Singapore-headquartered platform revolutionising solar asset performance through data science and AI, today announced it has surpassed 1 GWp of assets under management (AUM) - achieved just eight months post-launch. This milestone highlights surging global demand for intelligent, ROI-focused operations and maintenance (O&M) solutions in the photovoltaic industry.

With operations now spanning 20 countries across the world and over 1,300 PV systems under its flagship Smart O&M suite, PV Doctor delivers real-time performance monitoring, predictive health diagnostics, and actionable insights that maximise energy yield and investor returns.

The company is accelerating innovation with expanded AI-driven analytics and service modules. Two standout new features are highlighted below:

Climate-Specific PV Performance Insights:

Commercializing over 15 years of pioneering research from the Solar Energy Research Institute of Singapore (SERIS) at the National University of Singapore (NUS), PV Doctor applies a rigorous, science-driven framework to decode PV system behaviour across diverse climate zones.

Its 1-GWp portfolio spans 11 distinct Köppen-Geiger (KG) climate classifications (see Figure 1), enabling granular, data-validated insights into regional performance drivers and degradation risks.

A critical example: Potential-Induced Degradation (PID) in PERC modules accelerates sharply in tropical humid environments (Af, Am, Aw), where persistent high moisture amplifies leakage currents, driving faster power loss. PV Doctor’s monitoring quantifies this effect, empowering asset owners with predictive diagnostics and targeted mitigation strategies.

KG Classification: ● Af ● Am ● As ● Aw ● BSh ● BWh ● Cfa ● Cfb ● Csb ● Cwa ● Cwb

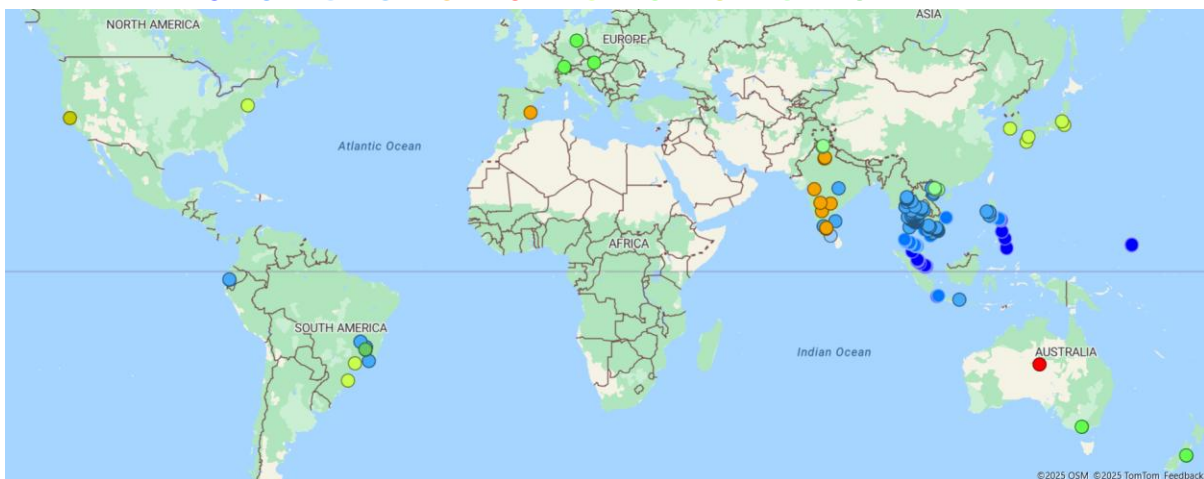


Figure 1: PV systems under PV Doctor’s Smart O&M service (November 2025), mapped by Köppen-Geiger classification: Af = Tropical rainforest | Am = Tropical monsoon | As = Tropical savanna (dry summer) | Aw = Tropical savanna (dry winter) | BSh = Hot semi-arid | BWh = Hot desert | Cfa = Humid subtropical | Cfb = Temperate oceanic/subtropical highland | Csb = Warm-summer Mediterranean | Cwa = Monsoon-influenced humid subtropical | Cwb = Subtropical highland/monsoon-influenced temperate oceanic

Leveraging a subset of its data (tropical locations), PV Doctor and SERIS co-presented findings on long-term system-level degradation at the 42nd European PVSEC in Bilbao, Spain (14–18 September 2025).

Key insight: Tropical PV systems degrade at 1.2–1.4% per annum, which is 30–40% higher than the 0.8–1.0% typically modelled in financial projections.

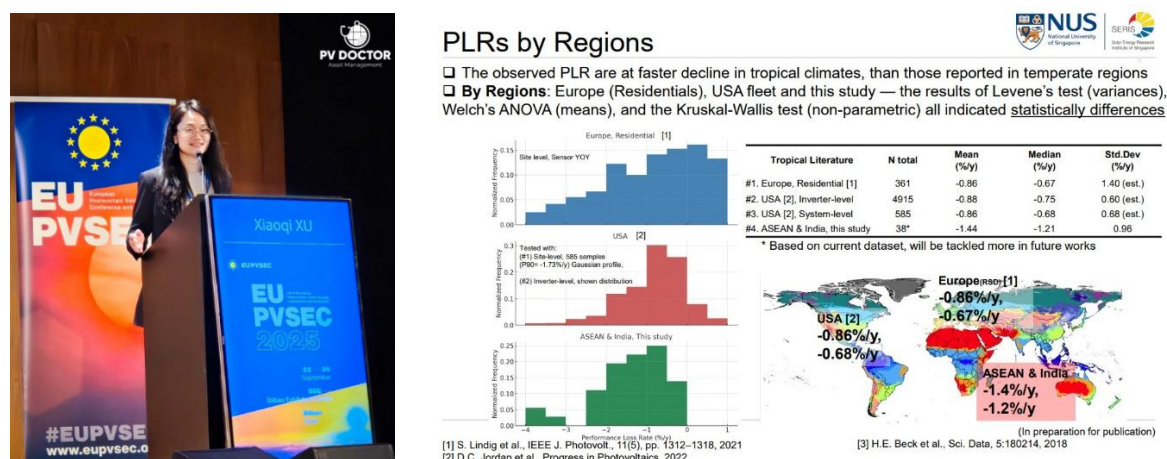


Figure 2: Dr Lucia XU, Research Fellow at SERIS presenting joint SERIS–PV Doctor research on elevated tropical degradation rates at EU PVSEC 2025, Bilbao, Spain.

These findings reshape underwriting assumptions, enhance ROI forecasting, and inform climate-resilient design, positioning PV Doctor as the trusted intelligence layer for global solar portfolios.

Smart Generation Replicator (SGR):

As global PV penetration surges, grid congestion and curtailment are eroding yields - especially in zero-export markets where excess generation is either uncompensated or prohibited, triggering revenue loss or regulatory risk.

PV Doctor's Smart Generation Replicator (SGR), see Figure 3, delivers a breakthrough: a zero-hardware, AI-driven engine that reconstructs true unconstrained generation at 5-minute resolution, isolating and quantifying losses from:

- Curtailment
- Shutdowns
- Grid unavailability

"The Smart Generation Replicator (SGR) requires no additional hardware and reconstructs asset performance as if no curtailment, shutdown, or grid loss had occurred. Without this correction, operators risk misinterpreting artificial dips as degradation or system faults, when they are merely artefacts of external constraints."

— **Thorntanut PAKDEEPINYO**, Head of Business Development, who will be presenting SGR at the 36th International PVSEC, Bangkok, 9–14 November 2025.



Figure 3: SGR reconstructing a PV system's profile as if it generated normally without curtailment loss, shutdown loss and grid loss; revealing 21.2% curtailment loss, 22.2% shutdown loss and 4.0% grid loss from selected period which previously were hidden as low system performance.

Leadership Perspective

"Hitting 1 GWp in eight months isn't just scale - it's validation. Asset owners worldwide are grappling with opaque performance in complex grids, and they're choosing PV Doctor to solve it."

— **Dr André NOBRE**, Co-Founder & Managing Director

"Our team—engineers, data scientists, interns, and consultants - operates with relentless ownership. This milestone belongs to them.", he added.

"Every system we onboard is a partnership. We don't just monitor - we co-engineer uptime and ROI, giving owners clarity, control, and confidence."

— **Jason WARD**, Head of Performance Engineering

For asset owners, whether you oversee a portfolio of commercial rooftops or a growing fleet of utility-scale plants, PV Doctor offers a unique blend of AI-powered analytics, seasoned field expertise, engineering excellence, and zero-hardware onboarding to elevate system performance.

For investors, this rapid scale, achieved in just a few months by a very experienced team, signals not only strong product-market fit but also untapped potential in a global sector still plagued by under-performance. As the solar industry matures, the PV Doctor is well-positioned to become the trusted standard in asset performance management.

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