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Simble Extends NanoSensor Platform into Solar Sensing Applications

22 SEPTEMBER 2026

Building on proven multi-band wavelength detection, Simble targets the global solar sector with ultra-low-power nanosensing, unlocking cell-level monitoring on Earth and establishing early alignment with next-generation space solar concepts.

KEY HIGHLIGHTS

- **Extending NanoSensor Capability into Solar Sensing:** Simble is extending its exclusively licensed NanoSensor Technology into solar sensing applications, with the immediate focus on terrestrial solar performance monitoring.
- **Building on Established Solar Monitoring Through SimbleSense and SimbleEnergy:** Simble already provides solar performance monitoring and energy visualisation capability to commercial and industrial customers through its existing SimbleSense and SimbleEnergy product lines, giving the Company an established commercial base from which to extend into nanosensor-enabled solar applications.
- **Architectural Fit for Solar Applications:** The NanoSensor's UV and longer-wavelength sensing capability, sub-millimetre form factor and ultra-low power profile align with key requirements in solar performance monitoring, where compactness, sensing precision and deployment flexibility are increasingly critical.
- **Longer Term Optionality in Space-Based Solar and AI-Driven Power Demand:** Space-based solar power is an emerging area of global interest, with engineering characteristics that may align with the NanoSensor architecture. Growing electricity demand from AI data centres adds a further potential driver for this segment, which the Company is monitoring as a longer-term application area, subject to ongoing characterisation and confirmation of the commercial case.
- **Aligned with Multi-Billion-Dollar Market Opportunity:** The global solar photovoltaic market is projected to reach approximately US$867.6 billion by 2035[1], and the space-based solar power market approximately US$10.70 billion by 2035[2], all sitting within the broader Industrial IoT market projected at approximately US$1.69 trillion by 2030[3].

Simble Solutions Ltd (ASX: SIS) (Simble or the Company) is pleased to announce the strategic expansion of its exclusively licensed NanoSensor platform into solar sensing applications, with an immediate focus on terrestrial solar performance monitoring. Broadening the commercial roadmap outlined on 10 June 2026, this initiative directly aligns the NanoSensor program with Simble's established footprint in solar monitoring and energy intelligence delivered through SimbleSense and SimbleEnergy.

[1] Solar Photovoltaic Market Size, Share, Trends | Report – 2035
[2] Space-Based Solar Power Market Size & Share Report, 2035
[3] Industrial Internet Of Things Market To Reach $1,693.44Bn By 2030

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The technical foundation for this expansion follows the optical characterisation results announced on 14 September 2026, where the NanoSensor demonstrated reliable multi-band detection across the UV-A, UV-B, and UV-C spectrums and into visible light wavelengths. Applying this validated wavelength-selectivity removes the need for greenfield sensor development, allowing Simble to target known operational bottlenecks in conventional solar monitoring—including bulk, high installation cost, and localized fault masking.

With an installed commercial and industrial customer base, Simble is uniquely positioned to route high-resolution, cell-level sensor data directly into existing SimbleSense and CarbonView analytics pipelines. By pairing molecular-level sensitivity, sub-millimetre form factors, and ultra-low power consumption with operational software infrastructure, the Company provides an efficient commercialisation pathway that enriches platform data assets and represents a natural scale-extension of its core business.

Where the Program Sits Today

The solar sensing pathway builds on sensor fabrication and initial capability testing already completed under the core NanoSensor development program, including the wavelength-detection capability demonstrated in the Company's UV and wavelength results. Rather than beginning at Stage 1, solar sensing enters the program at the formal benchmark testing stage, where the existing NanoSensor architecture will now be characterised against solar performance-monitoring conditions.

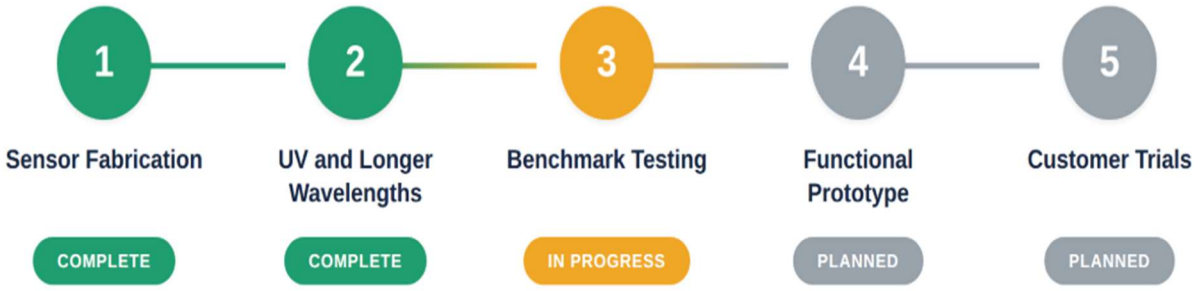

***Figure 1**: Status of the broader five-stage NanoSensor development framework.*

With sensor fabrication and wavelength-detection capability testing already established, the Company's immediate focus for the solar sensing pathway is to complete formal benchmark testing under solar-relevant conditions, assess the suitability of the architecture for harsher deployment environments including space-related applications, advance internal work to ensure NanoSensor-derived solar sensing data can be visualised and reported through SimbleSense and CarbonView, and report further capability-specific updates to the market as the workstream matures.

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Where Conventional Solar Sensing Platforms Fall Short

As utility-scale and commercial solar deployments accelerate globally, asset owners face compounding pressure to maximize energy yield, satisfy stringent grid obligations, and detect degradation early. Mitigating yield loss from soiling, shading, spectral variance, and cell micro-fractures requires sensing hardware that is responsive, granular, and economically viable to deploy at scale.

Current industry standards rely on pyranometers, reference cells, and inverter-level electrical metrics that aggregate performance across entire strings or arrays. Because legacy instruments are bulky, power-intensive, and require ongoing recalibration, deploying them at high density is commercially and physically impractical. Consequently, localized performance losses remain masked within string-level averages, often evading detection until generation declines materially.

This dynamic creates a persistent operational compromise: achieving panel- or cell-level visibility with legacy hardware exponentially increases cabling complexity, parasitic power draw, and installation overhead. Simble's NanoSensor architecture is designed to eliminate this bottleneck. By pairing sub-millimetre physical profiles and ultra-low power consumption with precision multi-wavelength optical detection, the platform targets dense, cell-level diagnostic data without the hardware burden of legacy systems—subject to formal validation under solar operating conditions.

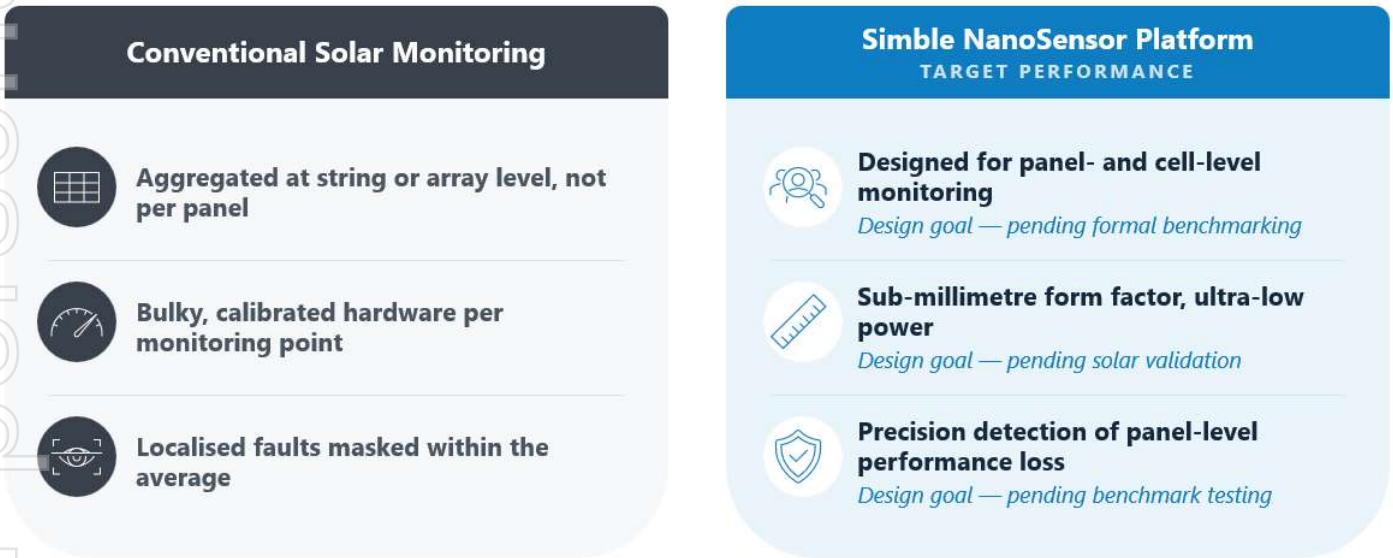

Figure 2: *Targeted design characteristics of NanoSensor solar sensing platform compared with conventional solar sensing approaches.*

Resolving this fundamental friction between sensing density and balance-of-system cost transitions solar asset management from lagging, aggregated telemetry to proactive, high-resolution intelligence. Within solar sensing, this architecture opens distinct operational pathways spanning immediate terrestrial performance monitoring through to emerging frontier applications.

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High Potential Solar Applications

The NanoSensor Technology is designed to combine four characteristics rarely found together in a single sensing platform: molecular-level sensitivity, sub-millimetre form factor, ultra-low power consumption and integration flexibility, subject to application-specific validation. Within solar sensing, these characteristics open commercial pathways across the following high-value application areas:

Solar Performance Monitoring

Cell-level detection of degradation, soiling and micro-fractures beyond panel-level resolution.

UV and Visible Light Sensing

Validated across UV-A, UV-B and UV-C and into the visible spectrum for irradiance monitoring.

Remote and Off-Grid Deployment

Ultra-low-power sensing for remote, off-grid sites where conventional hardware is hard to deploy.

Embedded Sensing for Dense Arrays

Sub-millimetre form factor embeds directly into modules without disrupting design or weight.

Integration with Software Platforms

Data flows straight into SimbleSense and CarbonView, already serving commercial customers.

Space-Based Solar (Longer Term)

Rising AI and data-centre demand supports continuous orbital power; commercial case to be confirmed.

***Figure 3**: Solar sensing application areas under evaluation within the NanoSensor development program, with commercial pathways extending from existing solar monitoring capability through to longer-term opportunities in space-based solar.*

The Market Opportunity

The solar sensing application areas Simble is targeting sit across several large and fast-growing markets. Demand for solar monitoring and asset management continues to expand alongside global solar deployment, while space-based solar power is attracting increasing investment as a longer-term complement to terrestrial renewable energy. Both market categories remain constrained by the limitations of conventional sensor hardware, which is the operational gap the NanoSensor platform is being characterised to address.

PV Monitoring Systems	Solar Panel Monitoring	Space-Based Solar Power
~US$3.4 Billion	**~US$5.57 Billion**	**~US$10.7 Billion**
projected by 2030[4]	projected by 2033[5]	projected by 2035[6]

All three segments sit within the broader Industrial IoT market, projected to reach approximately US$1.69 trillion by 2030[7], underscoring the scale of the addressable opportunity for compact sensing platforms capable of operating across terrestrial and emerging space-based environments.

[4] PV Monitoring Systems Market Outlook Report 2025-2030
[5] https://univdatos.com/reports/solar-panel-monitoring-system-market
[6] Space-Based Solar Power Market Size & Share Report, 2035
[7] Industrial Internet Of Things Market To Reach $1,693.44Bn By 2030

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Connecting Solar Sensing with Simble's Digital Platforms

A defining advantage of this application pathway is that it builds on Simble's existing software ecosystem rather than requiring the Company to create a new platform from scratch. SimbleSense already has established data pipelines, visualisation logic and reporting outputs for solar generation data. The addition of a NanoSensor sensing layer would extend the resolution and diagnostic depth of existing solar monitoring capability, rather than requiring the construction of a new product category from the ground up. Over time, this deep layer of real-world, serviceable data is expected to support more advanced insight as Simble's platforms continue to evolve.

For Simble's existing customers, this means that the NanoSensor-derived sensing layer can be made available through software platforms they already use, rather than through a new vendor relationship. For the Company, it means a more direct route from technical validation to customer-ready capability than would be available for application areas without existing platform infrastructure.

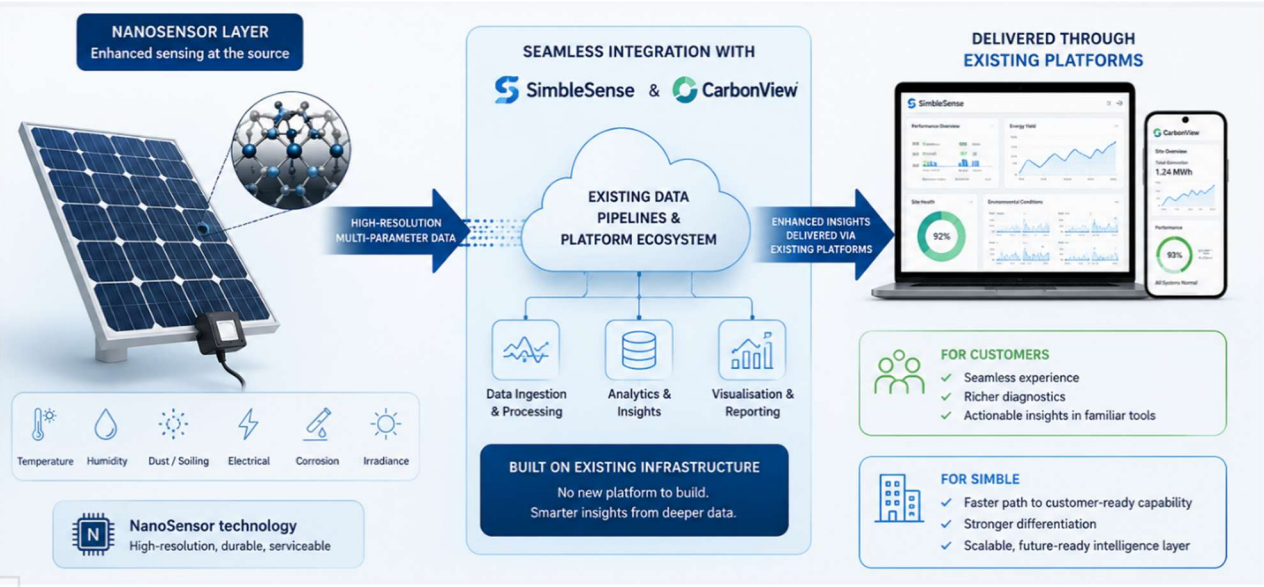

Figure 4: *The intended pathway from NanoSensor-based solar monitoring to customer-facing insights. Dashboard views are illustrative of the target integration; actual functionality remains subject to benchmarking, data-integration development and platform-readiness work.*

A Longer-term Opportunity: Space Based Solar & AI-Driven Power Demand

Beyond terrestrial solar, the Company is monitoring space-based solar power as a longer-term application area. Space-based solar power is an emerging segment of global interest, with proposals from energy, technology and aerospace organisations exploring how solar arrays deployed in orbit could provide continuous, high-yield power generation unconstrained by weather, daylight cycles or atmospheric attenuation. Global electricity demand growth, including from data-centre and AI-driven computing loads, is one of several factors contributing to renewed interest in this segment, with power availability and thermal management increasingly cited as constraints on AI infrastructure expansion.

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These environments present unique engineering challenges. Sensors must operate reliably under radiation exposure, large thermal swings and vacuum conditions, while remaining within strict mass, volume and power budgets.

The same characteristics that align the NanoSensor architecture with terrestrial solar sensing, namely compact form factor, ultra-low power and wavelength precision, may have relevance to these operational requirements.

***Figure 5**: A potential long-term pathway linking Simble's NanoSensor monitoring capability to proposed orbital solar and AI-compute infrastructure concepts.*

In an orbital AI compute context, the same monitoring approach could conceivably extend beyond the solar arrays to the thermal and power-delivery performance of the compute infrastructure itself, subject to further characterisation of that application.

Simble will evaluate the application of the NanoSensor platform to space-based solar monitoring as part of the broader development program, alongside the Company's immediate focus on terrestrial solar applications. Simble believes that establishing nanosensor capability for space-based solar applications today positions the Company to participate in this emerging segment of the market as it develops, building on the same NanoSensor platform underpinning its existing development program.

This strengthens the broader strategic logic of the NanoSensor platform. It is not only a sensing technology, but also a potential extension of Simble's existing energy, monitoring and reporting and intelligence ecosystem into new infrastructure categories over time.

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Simble's Chief Executive Officer, Fadi Geha, said:

"Solar monitoring has always been part of Simble's commercial story through SimbleSense and SimbleEnergy, and the NanoSensor platform gives us a natural way to extend that capability further. The characteristics that make this technology valuable, including precision wavelength sensitivity, ultra-low power consumption and a sub-millimetre footprint, are exactly the characteristics next-generation solar sensing requires.

Our immediate focus is on terrestrial solar performance monitoring, where we already have an established customer base, while continuing to monitor space-based solar, including its relevance to growing AI and data-centre power demand, as a longer-term opportunity. Every new sensing category adds to the operational data asset we're building across the business, and this is a logical extension of the platform we are already building. It strengthens the connection between our existing commercial operations and our broader technology direction. We will report progress on solar-specific benchmark testing, and on the space-based solar opportunity, as the program advances. "

This announcement has been authorised for release by the Board of Simble Solutions Ltd.

ENDS

ABOUT SIMBLE

Simble Solutions Limited (ASX: SIS) is a global Energy and Sustainability provider with integrated solutions across energy efficiency, sustainability and renewable energy development, supporting the global transition to Net Zero.

Following the December 2025 acquisition of exclusive rights to the patented **NanoSensor Technology**, Simble is advancing a structured evaluation program to investigate the platform's commercial potential across multiple application areas.

SimbleSense is an integrated hardware and real-time software solution that enables businesses to visualise and control their energy systems and reduce energy costs.

CarbonView is an enterprise-grade Carbon and Sustainability Reporting platform that allows companies to measure and reduce their carbon emissions and meet their reporting obligations.

Simble operates across the Commercial & Industrial and SME segments, distributing directly via B2B sales and through multiple channel partners, with offices in Australia, the United Kingdom and Vietnam.

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