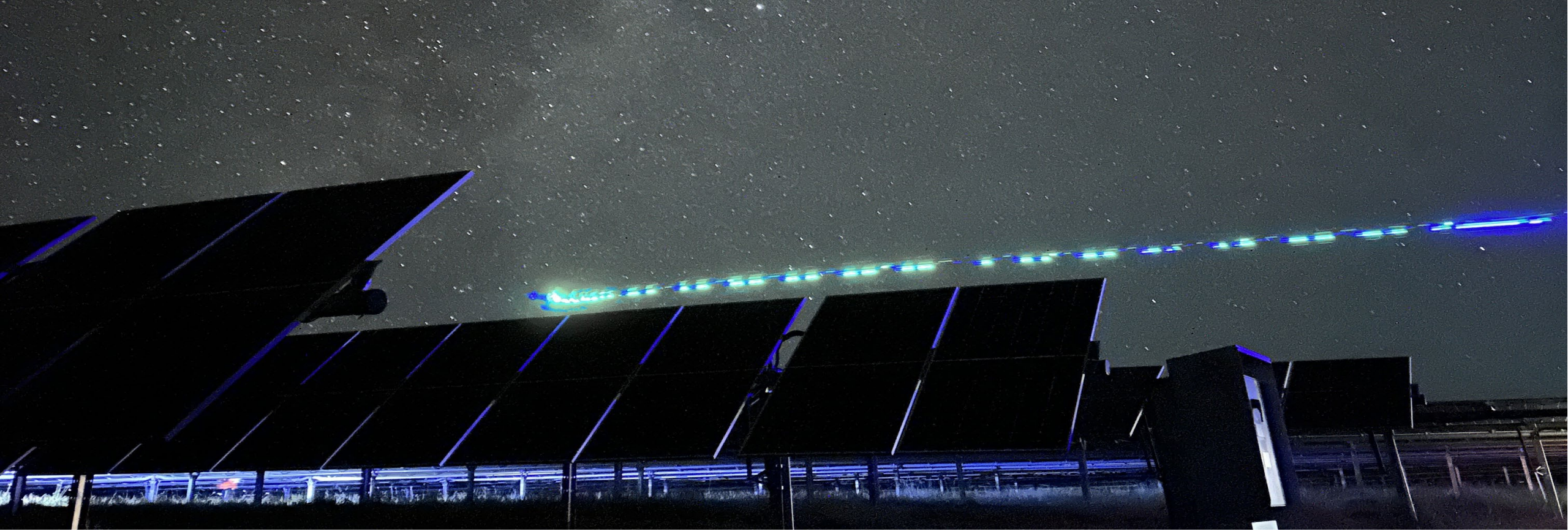




AI and Robotics for Solar PV Power Plant Asset Management



Dr. Yan WANG, CEO & Co-Founder
June 2026



Quantified Energy (QE) is an AI-driven innovator shaping the future of solar PVPP asset management.

1

Helmed by a team of solar PV professionals from SERIS/NUS



2

QE secured investment from top-tier VCs and investment banks*

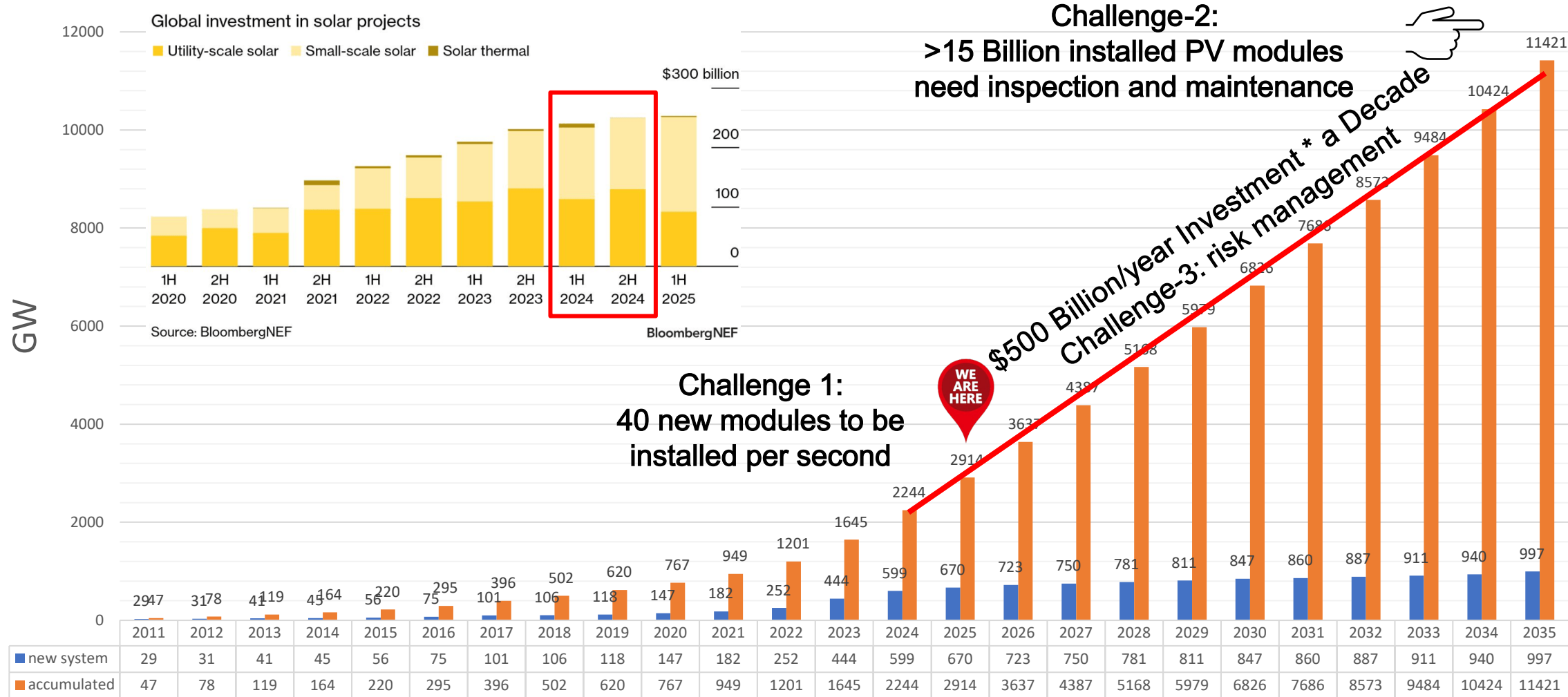


beacon
venture capital

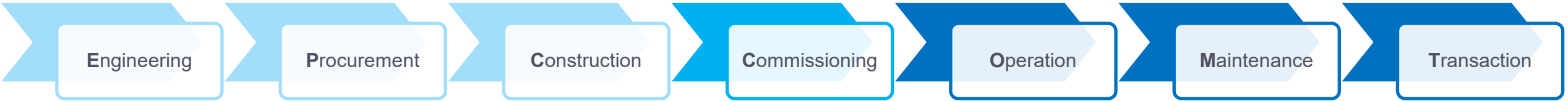


* Disclaimer: ADB Ventures has an equity investment in QE. The views expressed and products presented are those of QE alone and do not represent a recommendation or endorsement by ADB or ADB Ventures.

Solar is the new king of electricity, but managing such a vast number of operating assets and investments presents significant challenges.



Automation and AI are key enablers to enhance working excellence throughout solar power plant's 30-year lifecycle



AI-optimized design



Automated supply truck



Drone-based monitoring and robotic placement



Automated testing



Real-time AI optimization



Automated cleaning and inspection



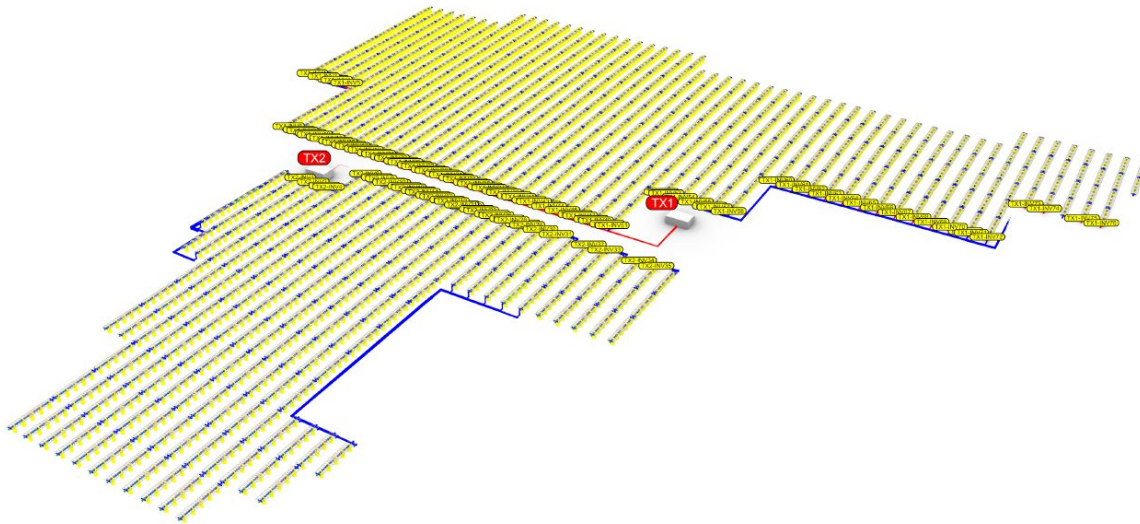
Smart contracts and analysis

Challenge-1: Scaling PV construction to reach 40 modules per second to mitigating workforce constraints.

Digital Twins: Comprehensive virtual site modelling that tracking construction progress

&

Automation: Autonomous robotic fleets engineered to accelerate solar deployment

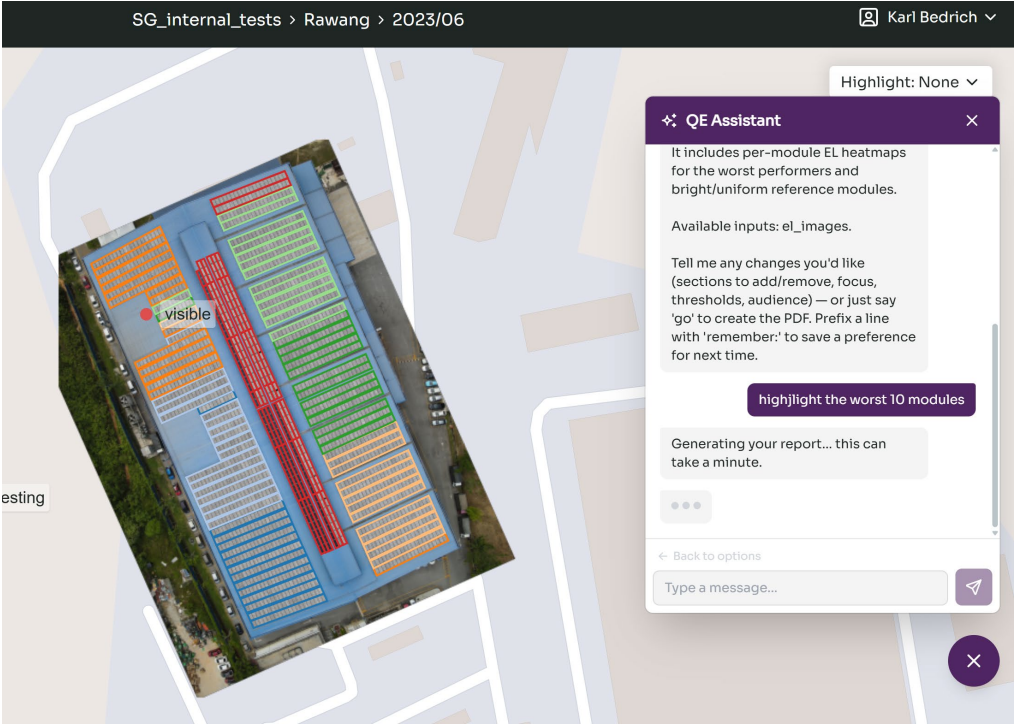


Challenge-2: Delivering reliable and scalable inspection and maintenance across a global base of 15 billion installed PV modules.

Automation: Autonomous robotic fleets engineered to keep assets in optimal condition

Chatbot: Intelligent conversational AI agents transform raw data into actionable insights.

&



Challenge-3: Ensuring the resilience of large-scale solar PV investments by addressing rising risks and preventing damage-related losses.

1) Natural disasters



The frequency and severity of hailstorms, typhoons, flooding, etc., are increasing

2) Man-made damages



Rushing to meet EPC deadlines and improper O&M practices may introduce fire incidents

3) Under performance

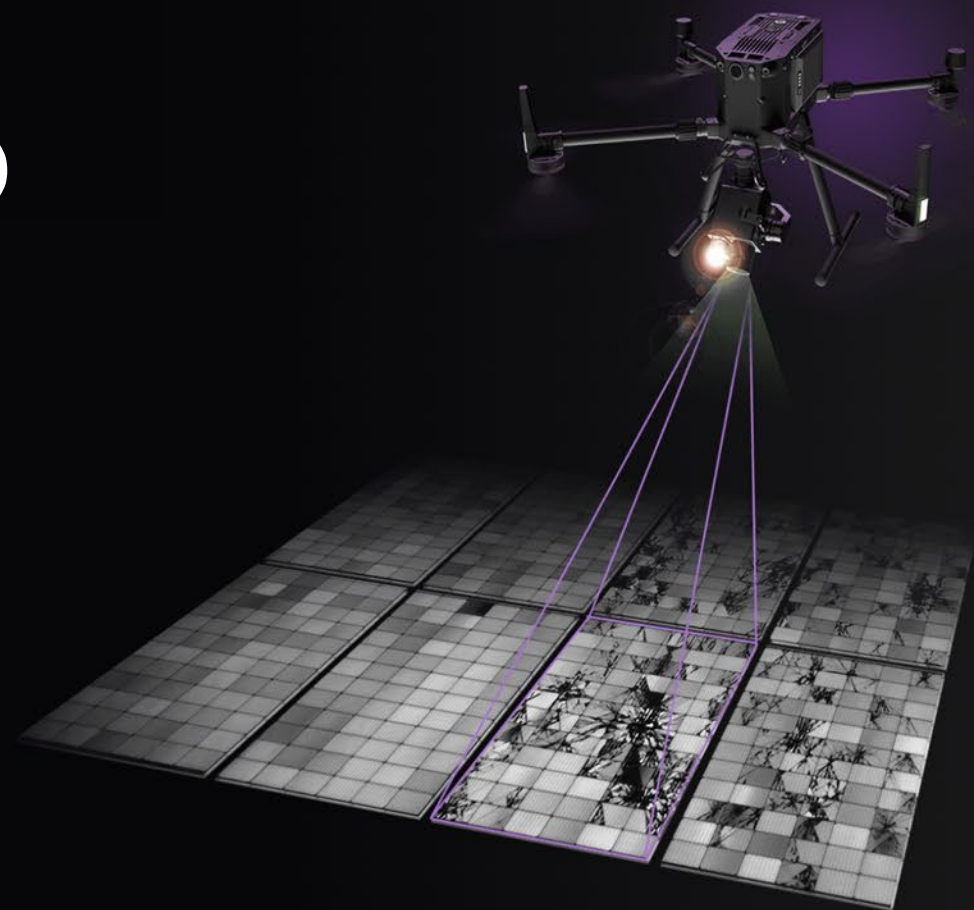


Price reductions driven by overcapacity may lead to poor product quality

It requires holistic risk management and efficient handling of insurance claims

The most advanced solar inspection: Autonomous Drone EL Mapping solution Patented (SG/EU/US/JP, CN/AU pending)

EL imaging is a critical tool for ensuring the long-term reliability and performance of your PV systems. This versatile inspection method is applicable at every key stage of the PV lifecycle, providing detailed insights that help maintain system integrity, prevent energy losses, and support informed decision-making.



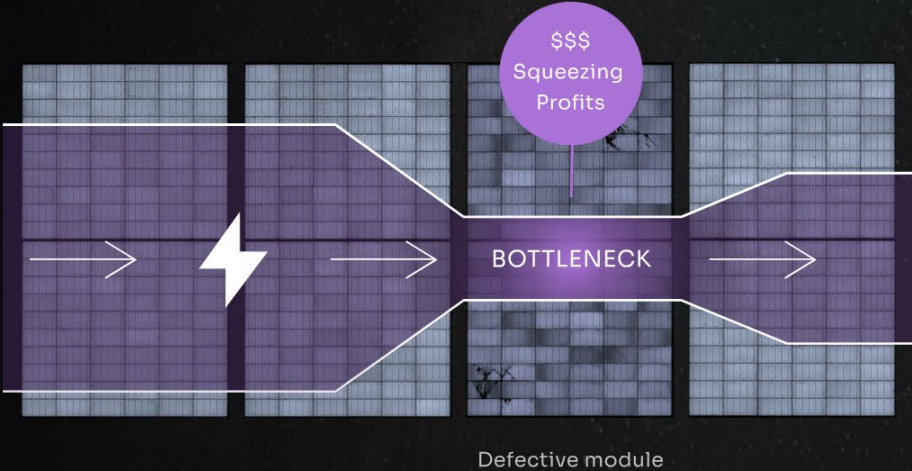
Keep the energy production of your solar sites at its maximum

We analyze the quality and performance of your site through our patented Autonomous Drone EL Mapping solution.

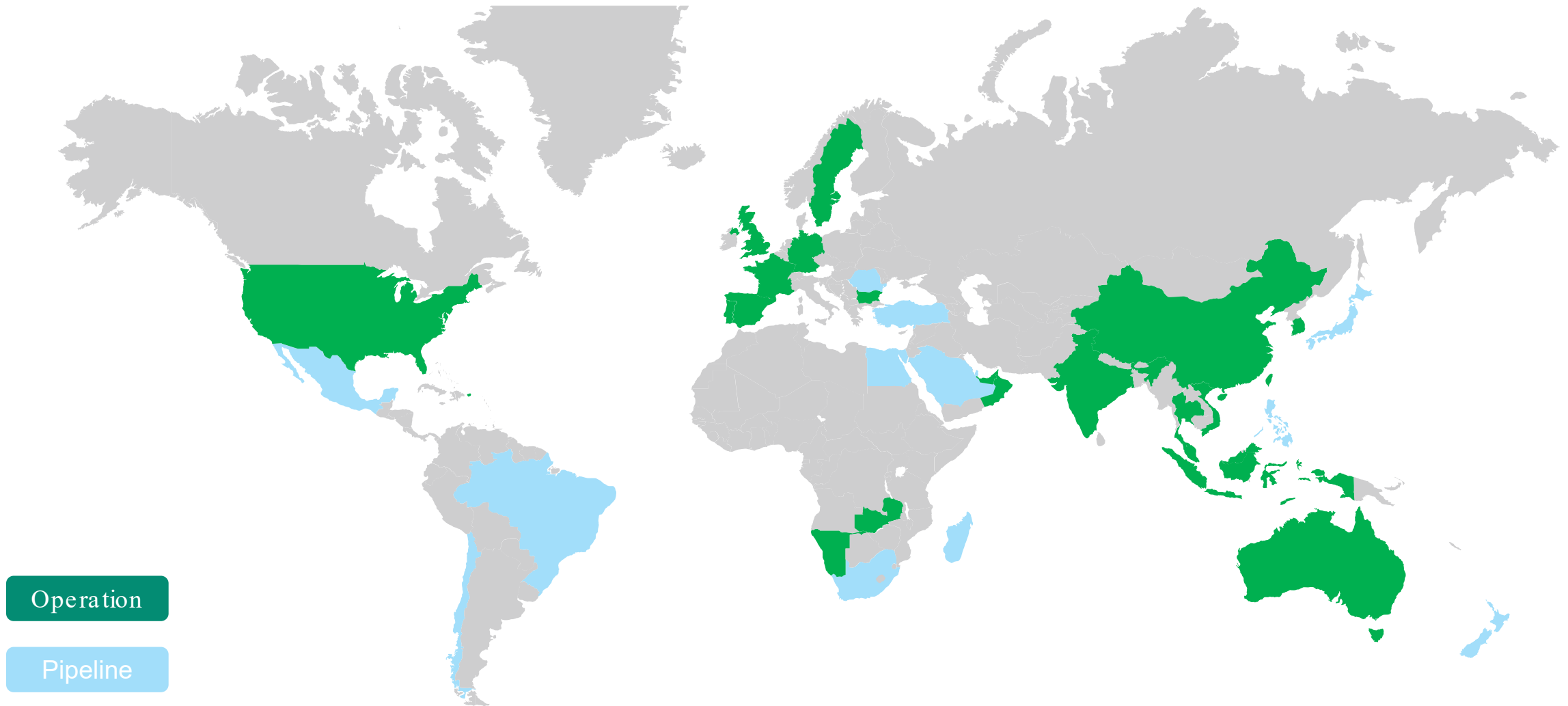
Take your benefit of the most reliable test on the market with lab-quality inspections directly in the field, enabling early defect detection to keep solar assets performing at their best.

Defective PV modules are the Energy Production Bottleneck

in a string of solar modules



QE is working with local partners around the world to bring the autonomous drone EL mapping solution to mass adoption.



Case study – Utility Scale PV Plant with TOPCon modules

Unexplained yield loss

- ❑ A utility-scale PV plant built in 2023.
- ❑ After one year of operation, the plant operator observed a noticeable drop in energy yield.
- ❑ A first detailed assessment by a certified third-party inspection agency found:
 - No issues with the inverter or electrical BOS
 - Drone infrared inspection showed no obvious hotspots or thermal anomalies, except one PV string in open circuit.
- ❑ Conventional diagnostic could not identify the root cause.

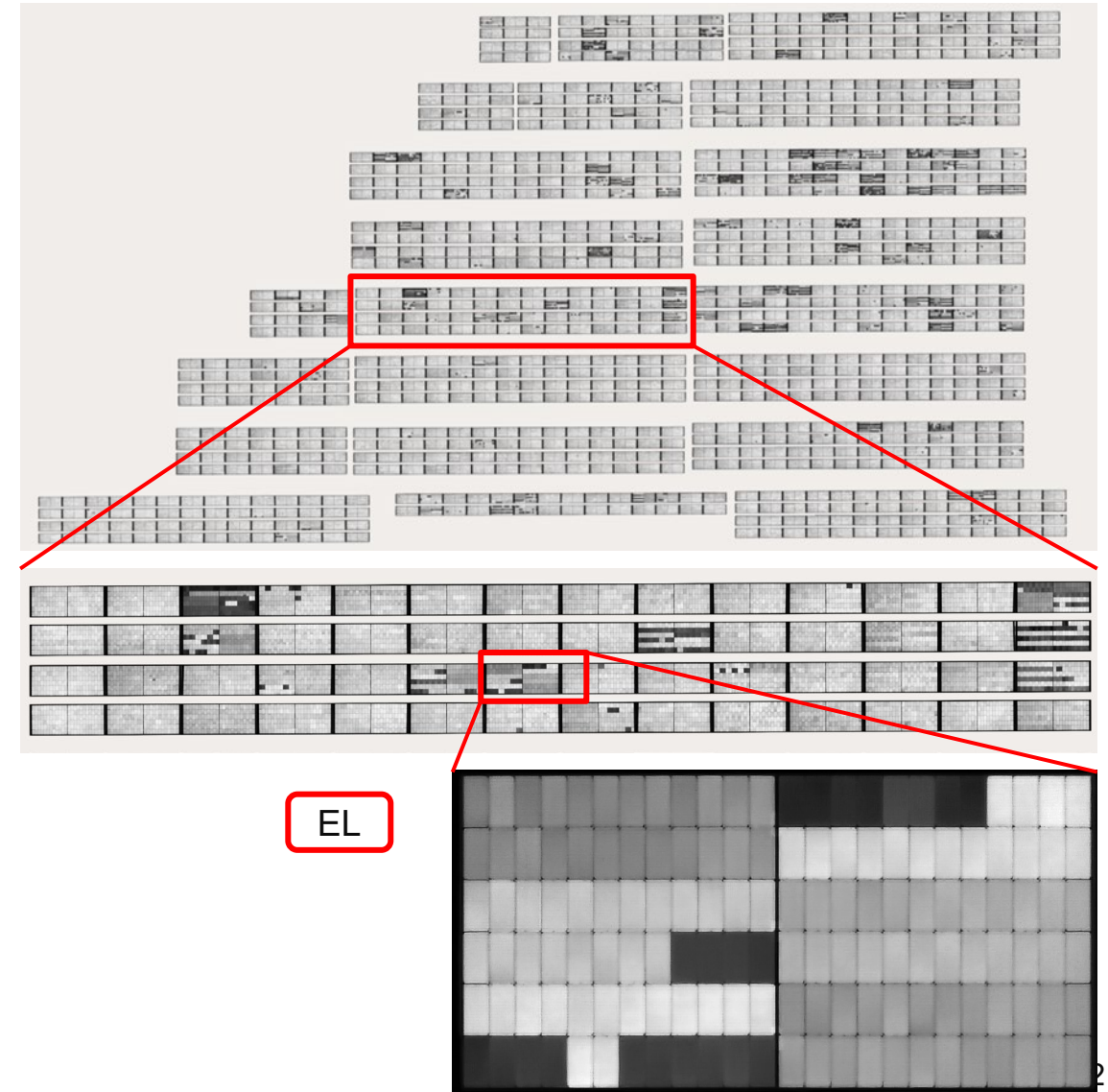


IR

Case study – Utility Scale PV Plant with TOPCon modules

Field EL Investigation

- ❑ Full site drone EL inspection to find the root cause of system under performance.
- ❑ EL imaging revealed widespread PV modules with dark/bright contrast cells.
- ❑ Signature pattern consistent with UVID, in view of Topcon modules were installed.
- ❑ Representative PV modules were sampled and sent to an accredited laboratory (such as TUV Rheinland) for STC IV characterization.



Guided owner onboarding

Create a Free Asset Check for Your Solar Plant

Complete the minimum owner intake, confirm the plant on satellite imagery, then generate a basic health, loss, value, and readiness check.

Confidence
88%

Files
6

Step
1/5

Progress

- 1 Basic plant information
Enough for a 1–2 minute check
- 2 Generation & revenue
Unlock loss and value estimates
- 3 Equipment & operations
Improve technical confidence
- 4 Supporting documents
Optional files can be added later
- 5 Review & generate
Confirm scope and create report

Owner gets first

- Asset health score
- Expected vs actual generation
- Revenue loss estimate
- Value range
- Insurance / refinancing readiness

Basic plant information

Enough for a 1–2 minute check

Start with plant identity, location, and capacity. The score can be generated after annual generation is provided in Step 2.

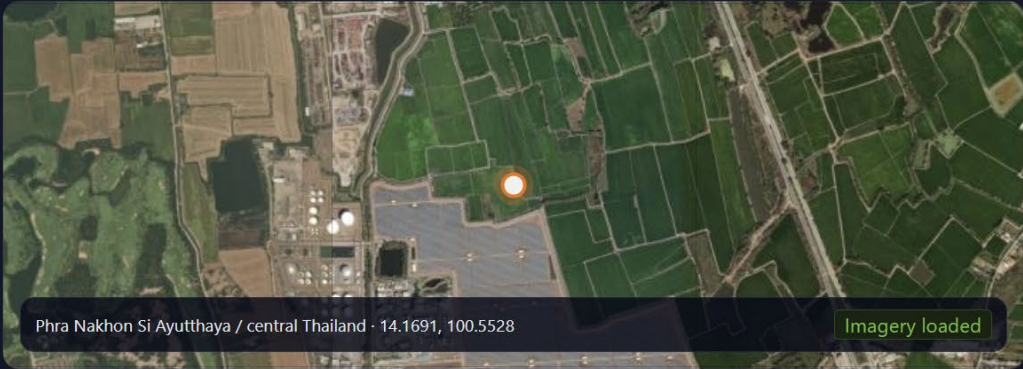
Plant nameCountry / region

Bangchak Solar Demo PlantThailand

Address or map location

Phra Nakhon Si Ayutthaya / central Thailand · 14.1691, 100.5528

Satellite preview14.1691, 100.5528



Phra Nakhon Si Ayutthaya / central Thailand · 14.1691, 100.5528Imagery loaded

DC capacity (MW)COD yearPlant type

162013Ground-mounted PV

BackNext

Rater Assistant

L0

Quiet companion mode: regular input, validation, and progress changes stay local and do not call AI.

- Explain this fieldWhat can I skip?
- Improve confidenceExtract from upload
- Ask AI only when you need helpAsk

Conversation history

L0

Quiet companion mode: regular input, validation, and progress changes stay local and do not call AI.

L0 local · L1 template · L2 semantic AI candidate

Data Confidence

High88%

Basic information is enough for a first check. Generation, revenue, SCADA, and inspection files move the result toward high confidence.

Missing high-value data

Core materials are enough for this walkthrough.

 Authorized Asset Market

All Regions

All Ratings

Any Capacity

Newest First

Q AI Search: ask anything about authorized proje...

AI Search

Total Capacity

⚡ 75.1 MW

Listed

📅 7

Traded

✅ 1

Avg TAR

74.4

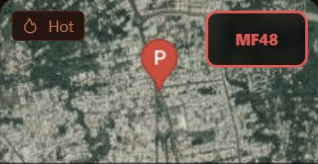
REIT Bundles

🏠 0

🔥 Top 5 Trending

🔥 Hot

MF48



Mekong Delta Solar

☆

📍 SEA

HF48 / MF48 / LF48

12.0 MW

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USD

Capacity

PR_corr

5.90M

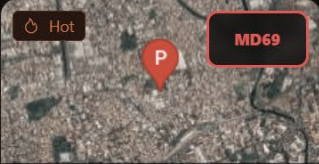
Price

👁 5 views

👤 2 interested

🔥 Hot

MD69



Central Java PV

☆

📍 SEA

HD69 / MD69 / LD69

9.2 MW

--

USD

Capacity

PR_corr

5.95M

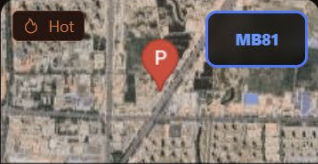
Price

👁 4 views

👤 2 interested

🔥 Hot

MB81



Jingneng Tianjin Ba...

☆

📍 East Asia

HB81 / MB81 / LB81

25.0 MW

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USD

Capacity

PR_corr

19.72M

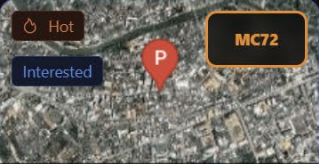
Price

👁 4 views

👤 1 interested

🔥 Hot

MC72



Greenfield PV Park

☆

📍 SEA

HC72 / MC72 / LC72

5.2 MW

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USD

Capacity

PR_corr

3.41M

Price

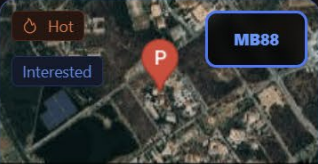
👁 3 views

👤 3 interested

★ SAVED

🔥 Hot

MB88



Korat Industrial PV

☆

📍 SEA

HB88 / MB88 / LB88

15.0 MW

--

USD

Capacity

PR_corr

12.22M

Price

👁 2 views

👤 2 interested

★ SAVED

📄 Cards

📍 Map

MA91



Singapore test

☆

📍 SEA

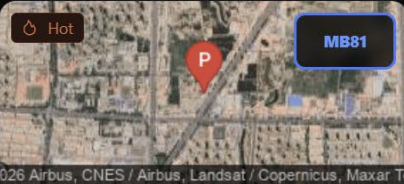
HA91 / MA91 / LA91

1.0 MW

--

USD 824k

MB81



Jingneng Tianjin Baodi DG

☆

📍 East Asia

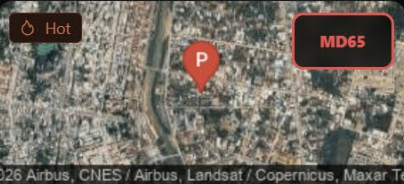
HB81 / MB81 / LB81

25.0 MW

--

USD 19.72M

MD65



Battambang Ground Mount

☆

📍 SEA

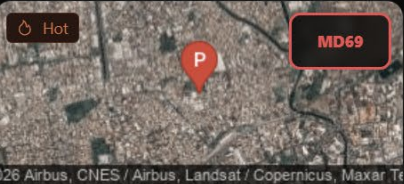
HD65 / MD65 / LD65

3.7 MW

--

USD 2.35M

MD69



Central Java PV

☆

📍 SEA

HD69 / MD69 / LD69

9.2 MW

--

USD 5.95M

👤

989 cr

☆ 5

📁 6

💬



THANK YOU!

**Make every PV
module count
throughout its lifetime!**

<https://quantified-energy.com/>

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