

AI PUTS ON A HARD HAT

Solar construction’s robotic future is taking shape

Tim G. Montague, M.S. | Clean Power Consulting Group | October 2026

Demand is real. The machines are not yet ubiquitous.

The contractor’s reality check

Sunstall wanted four robots this quarter. Even as a paying customer, it couldn’t get them.

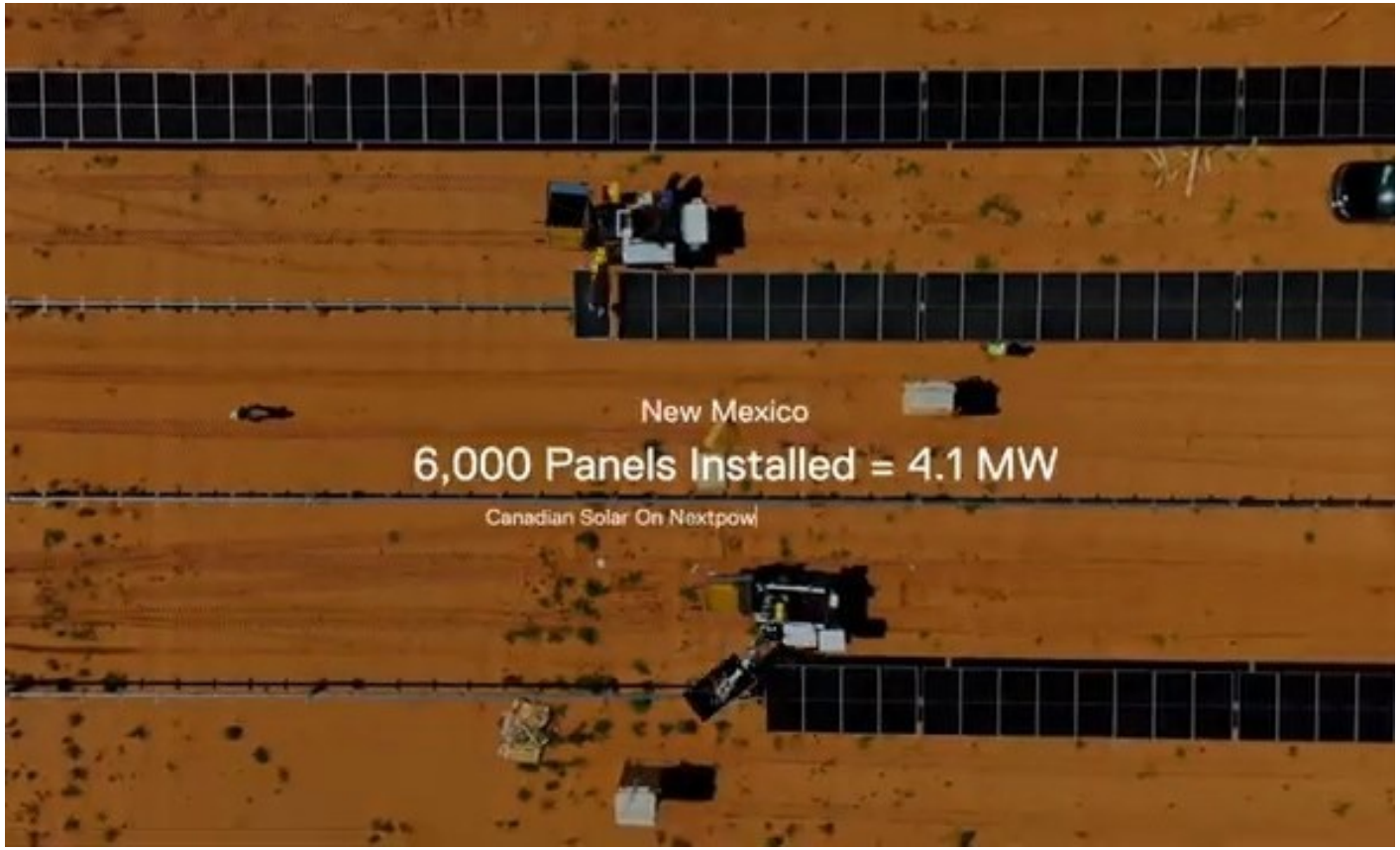
Helge Biernath • Sunstall



DEMO ≠ DEPLOYMENT

Real jobsites, meaningful progress

Company-reported field activity, not independently audited results



180,000+

modules installed (100+ MW), reported by AES Maximo

~75,000

modules placed on 8 commercial projects, reported by Gritt

Autonomous task ≠ autonomous jobsite

Physical AI is promising, but its operating envelope matters

- AI-assisted perception and positioning
- Human oversight for driving and safety
- Fastening and electrical work remain labor-intensive
- Variable terrain, weather and racking complicate scale



The metric that matters: bankable cost per module

Not just modules placed per robot-hour

EQUIPMENT

availability + delivery

SITE

mobilization + setup

LABOR

support crews + supervision

PRODUCTION

uptime + utilization

RISK

rework + damage + delays

“Just because you can place a panel doesn’t mean it’s efficient.”

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Ask vendors to stand behind an installed cost per module. Biernath’s estimate today: roughly break-even in some applications.

Selling certainty. Proving it.

EPCs value predictability as much as labor savings, and field data has to back it up

THE CLAIM • PURI, GRITT

Predictable schedules

Fewer injuries

Less recruiting risk

THE PROOF NEEDED

Incident rates and rework

Module damage

Finished install quality

Promising safer construction is not the same as proving it

Don’t just automate yesterday’s process

Redesign the array and the installation workflow together

TRADITIONAL

Existing trackers + modules

↓

Fit a robot to the task

SYSTEM DESIGN

Piles + racking + clips

↓

Design for robotic assembly

System-level impact > arm speed

Augment the workforce. Measure total productivity.

Skilled people remain integral to robotic jobsites



- Supervision, logistics and troubleshooting
- Skilled fastening and electrical work
- Modules installed per worker-hour
- Who owns the field data and know-how?

The road to 24/7 solar construction

A destination, not a capability to promise today



- Scale reliable equipment supply
- Automate more than panel placement
- Prove uptime, quality, safety and economics
- Make solar systems easier for robots to build

AI HAS PUT ON A HARD HAT.

Now it has to earn its place on the jobsite.

Show up. Adapt. Operate safely. Deliver a bankable cost per module.

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