

Solving Key Constraints with Hybrid-Tandem™ Solar

Scott Graybeal, CEO | PV Magazine

October 20, 2026

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Caelux at a Glance

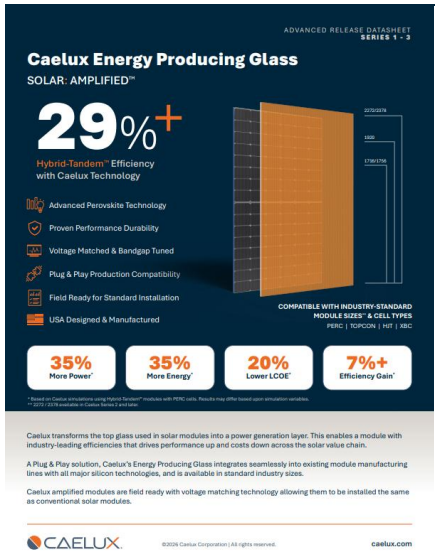
Technology Innovator

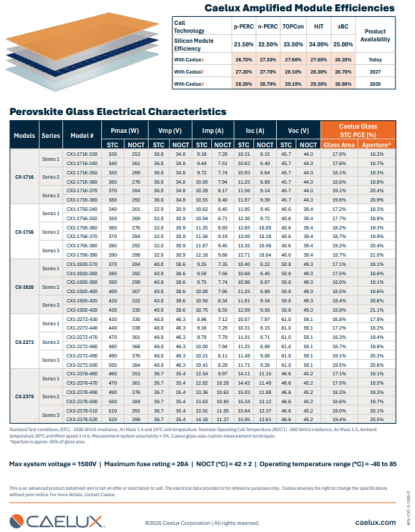
Caelux is a global leader in commercializing **Perovskites.**

Advanced Manufacturer

> 2 sqm Full Size in Production	Current 50 MW Future 100 MW	>20 GW
LAB TO FAB	OPERATIONAL FACTORY	CONTRACTED DEMAND GLOBALLY

Commercialized Product





Leading Global Investors

khosla ventures

TEMASEK

Reliance Industries Limited

Fine Structure VENTURES

SiteGround

VALO

Recognized Leader

TIME AMERICA'S TOP GREEN TECH COMPANIES

Business Intelligence GROUP

CLEANTECH BREAKTHROUGH AWARDS

CAELUX

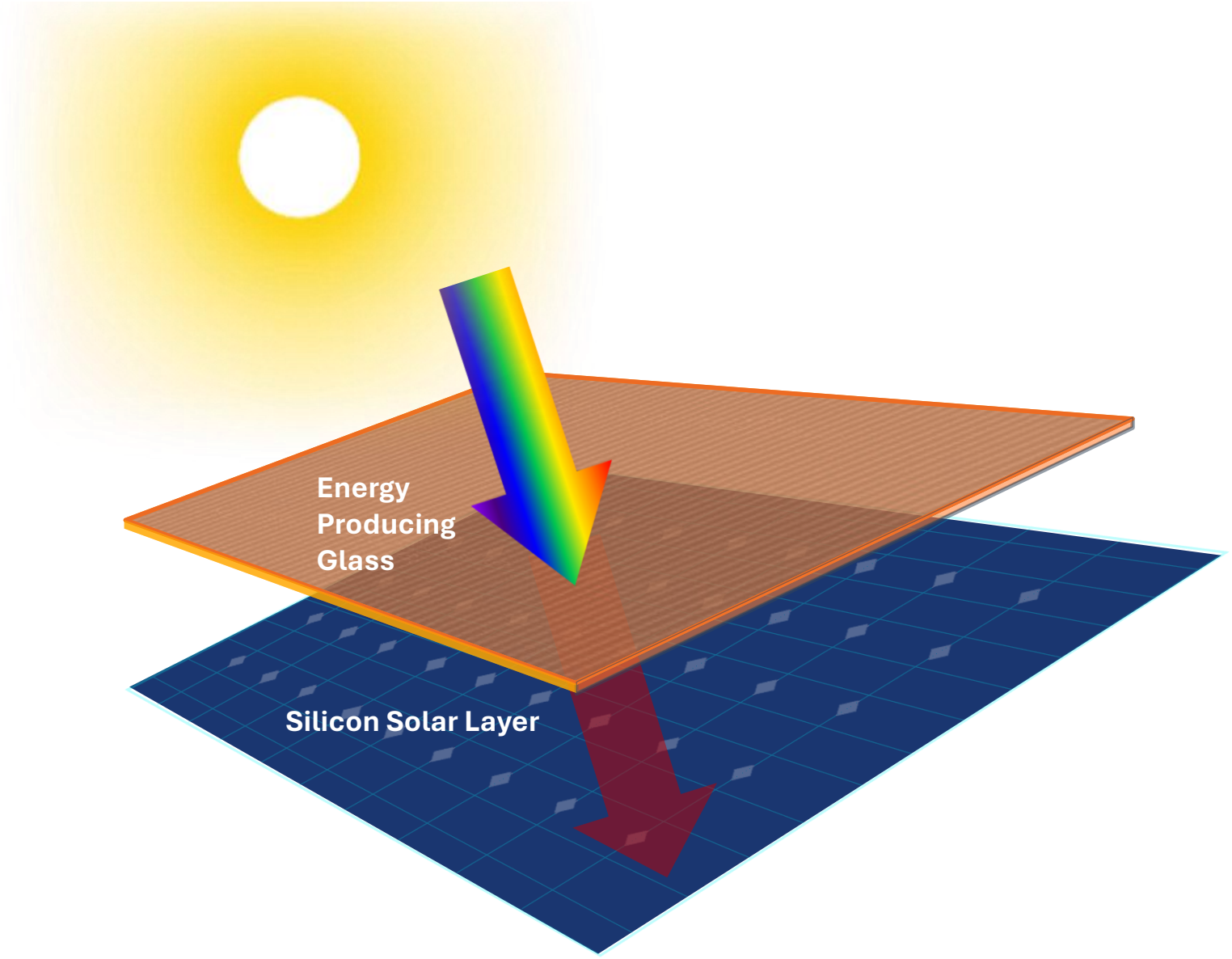
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Glass that Makes Power: Solar Amplified™

1 **Swap the Glass**
Substitute for top glass.

2 **Two Power Layers**
Deep red and infrared pass through to the silicon layer.

3 **Up to 35% More Power**
Step-function efficiency change.



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Management Team with >125 years Combined Solar Experience



Scott Graybeal
CEO

- flex
- APPLIED MATERIALS
- oerlikon
- GE
- UC San Diego



John Iannelli
President & Founder

- khosla ventures
- emcore
- JPL
- Lucent Technologies
- Caltech



Charlie Hasselbrink
CTO

- SUNPOWER
- Mainspring
- Sila
- Stanford University



Jeremy Ferrell
CFO

- SINGULAR GENOMICS
- Mi
- ecoATM
- SIGYN THERAPEUTICS
- THUNDERBIRD SCHOOL OF GLOBAL MANAGEMENT



Aaron Thurlow
CCO

- SUNPOWER
- LONGi
- National Semiconductor
- University of Delaware
- TESLA
- UC San Diego



Eric Kuo
VP and General Manager, Asia

- nextracker
- flex
- JA SOLAR
- MOTECH



Vish Iyer
Managing Director India & Middle East

- JAKSON green
- STERLING & WILSON
- LARSEN & TOUBRO
- SIEMENS

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Caelux Production & Technology Roadmap

Cell Technology	p-PERC	n-PERC	TOPCon	HJT	xBC	Product Availability
Silicon Module Efficiency	21.5%	22.5%	23.5%	24.0%	25.0%	
Hybrid-Tandem™ Caelux1	26.7%	27.2%	27.6%	27.8%	28.2%	Now
HT Caelux2	27.2%	27.7%	28.1%	28.3%	28.7%	2027
HT Caelux3	28.2%	28.7%	29.1%	29.3%	30.0%	2028
HT Caelux4	29.3%	29.7%	30.1%	30.3%	30.7%	2028 | 2029

Caelux internal estimated projections.

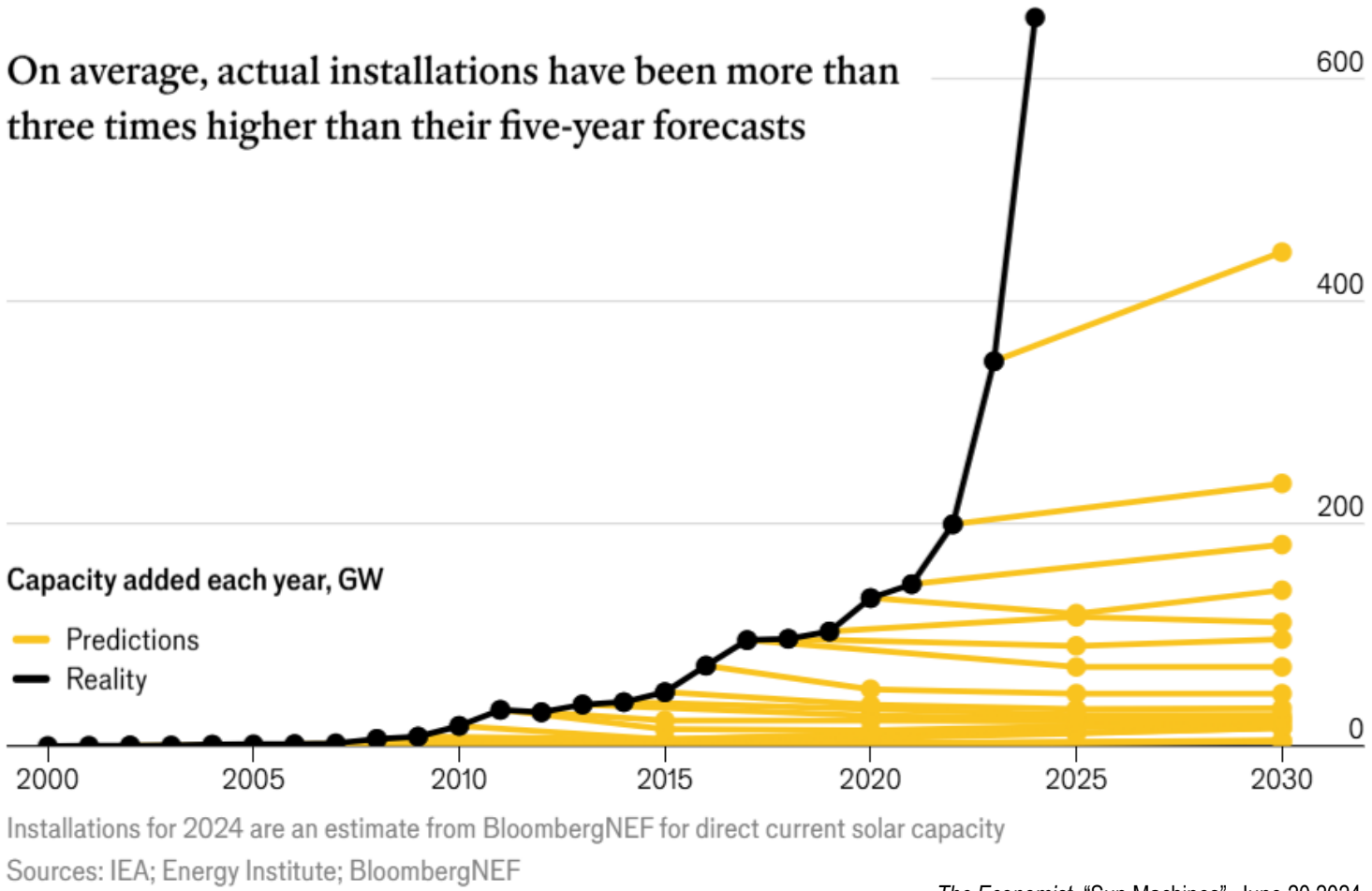




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Solar is Growing Exponentially



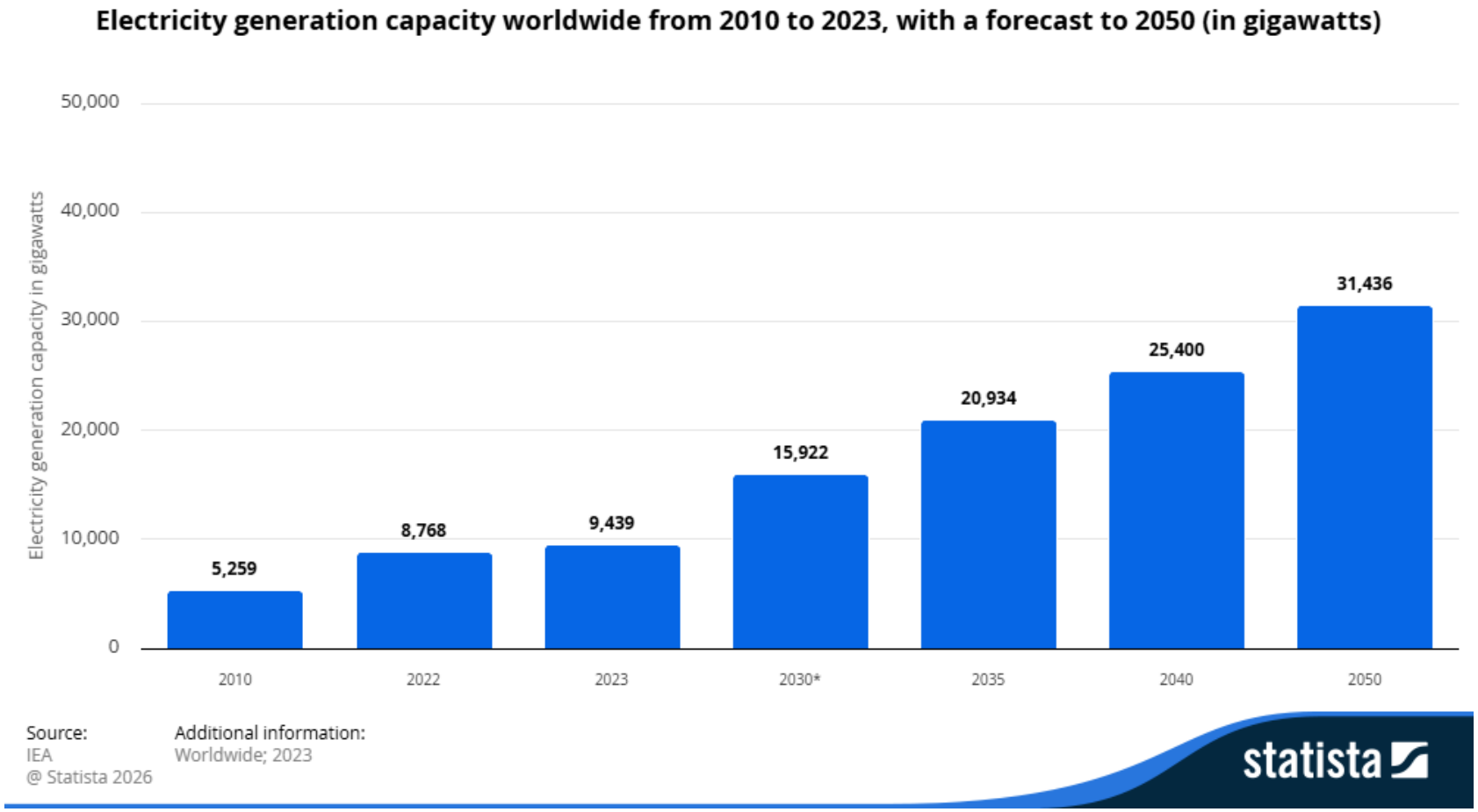
The Economist, "Sun Machines", June 20 2024

Industry experts consistently under-predict the growth rate.

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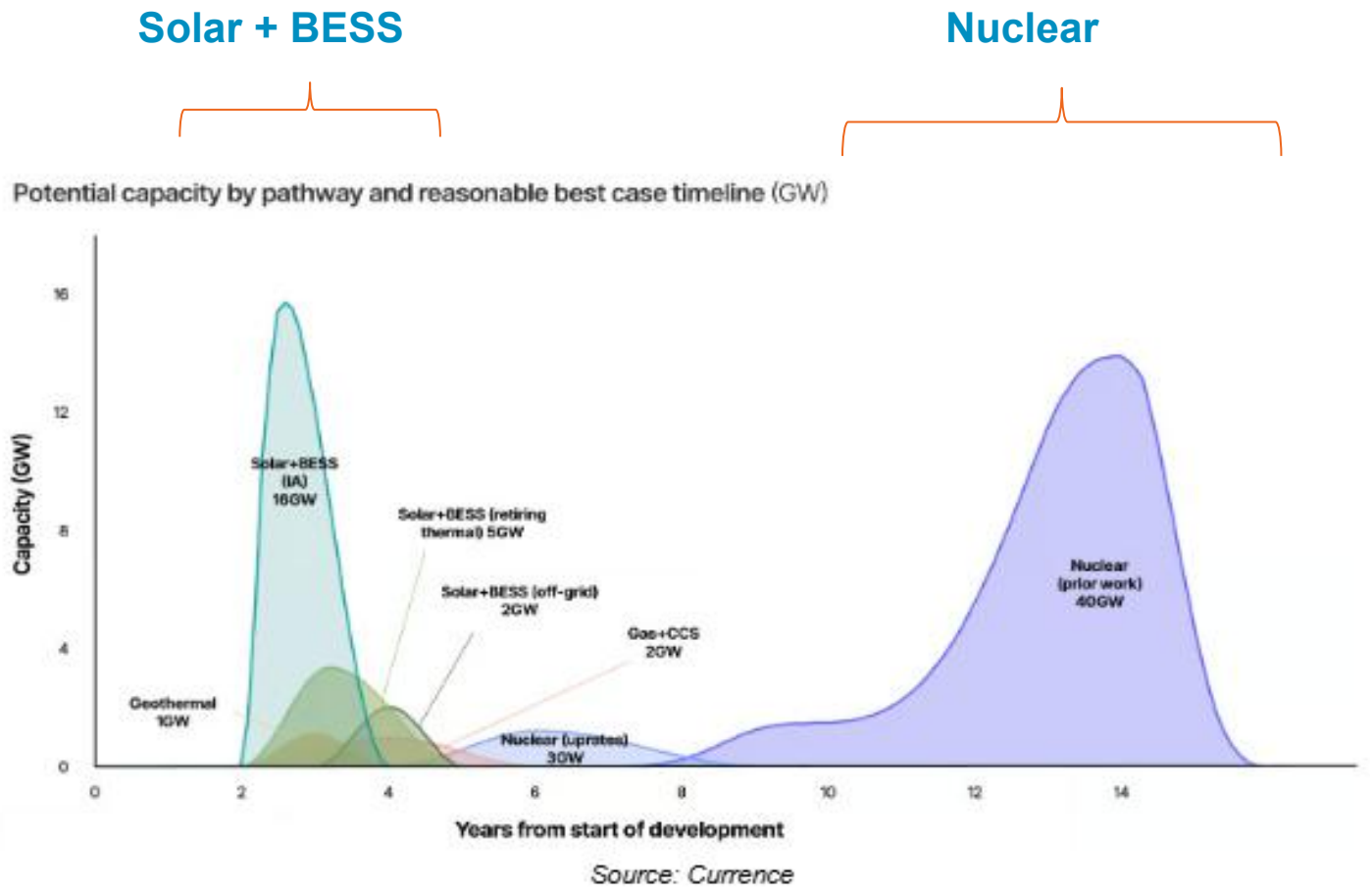
Doubling of Capacity Needed by 2050.

Projected generation capacity requires doubling of grid capacity over the next 2 decades



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Solar + BESS Wins at “Speed to Power”



Source: Currence

Solar already the cheapest resource.

Speed critical to meet growth rates.

Caelux improves speed and cost with higher density.

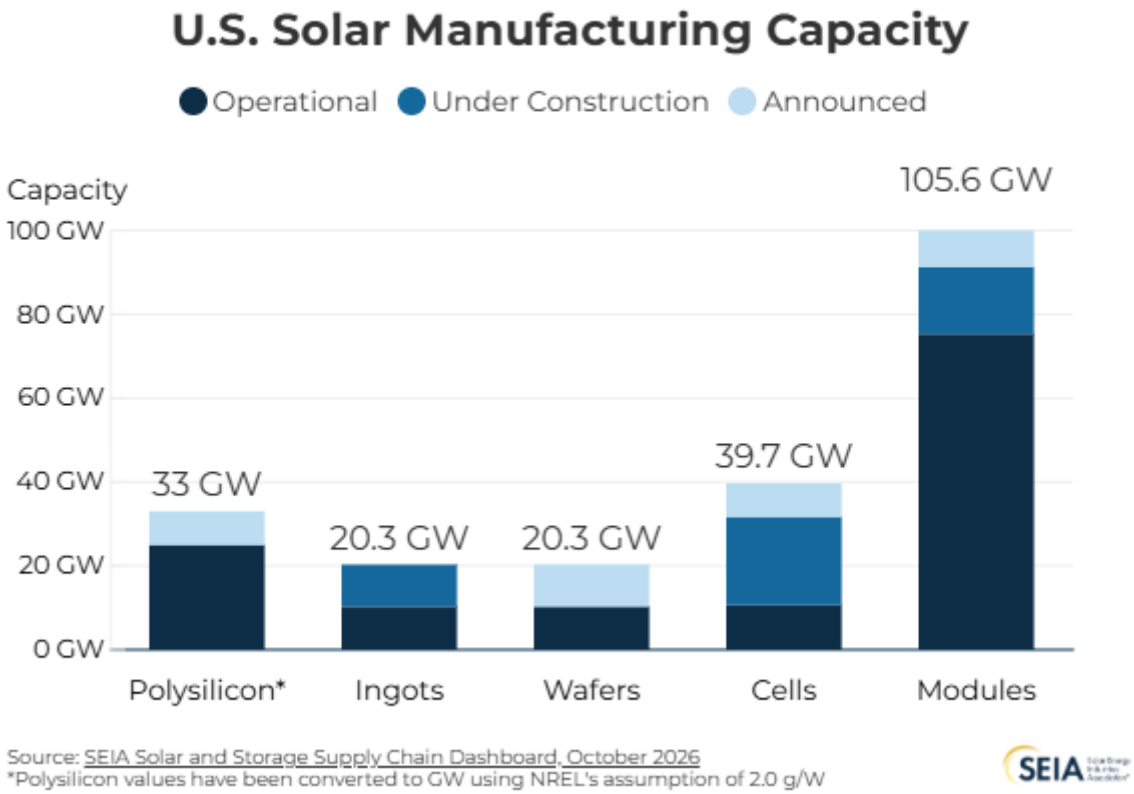
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Caelux Derisks Wafer and Cell Shortfall in US

Wafer and Cell Shortfall in US

Caelux Energy Producing Glass is a wafer + cell that contributes the bulk of the power in a Hybrid-Tandem™ module

Technology investment lifetime extended as cSi efficiency gap derisked -- PERC remains viable choice



Source: SEIA Solar and Storage Supply Chain Dashboard, October 2026
*Polysilicon values have been converted to GW using NREL's assumption of 2.0 g/W

SEIA

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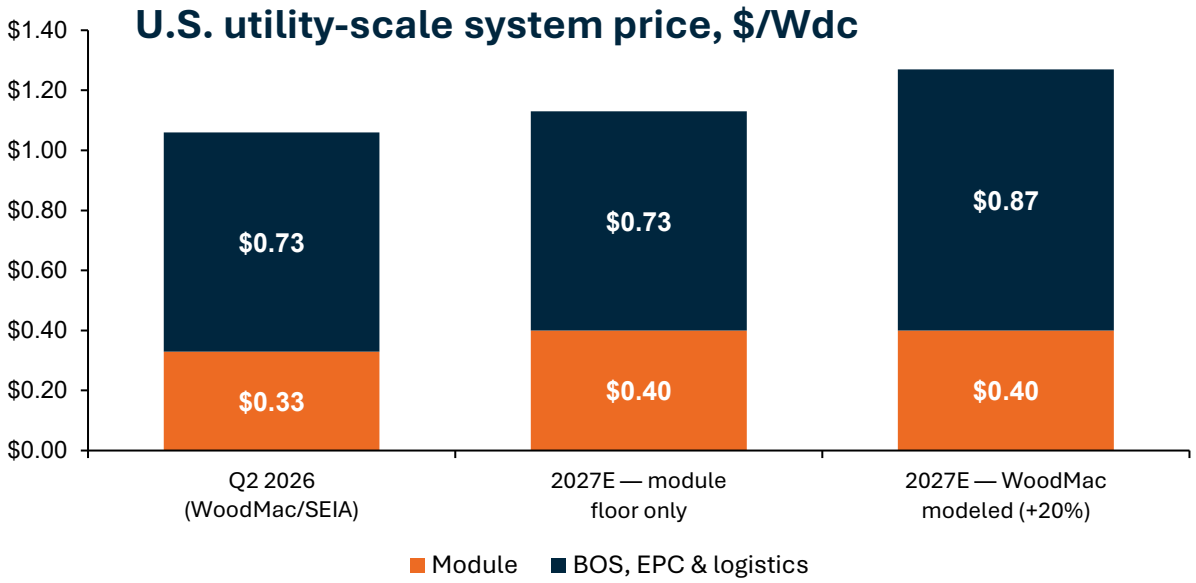
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Solar Build Costs are Rising — Caelux Bridges the Gap

The biggest lever to reduce costs is power density (module efficiency)

Utility-Scale Prices Rising after Years of Declines

- 2027 projects estimated at **$1.27/Wp vs $1.06/Wp** (+20%)
- Rising costs due to **inflation, EPC labor competition, logistics and policy**
- **Section 232 tariffs** not just MIP on cells but steel and other components



+18% LCOE
In 2026

+$4–5/MWh
PPA per +10¢/W module

>$0.40/W
2027E Module Price

~70%
of cost is non-module

Sources: Wood Mackenzie/SEIA US Solar Market Insight Q3 2026; Wood Mackenzie (2 Oct 2026); Anza (10 Aug 2026); Novogradac (18 Aug 2026); Lazard LCOE+ 2026; Caelux LCOE Model 2 (9.22.26).

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Caelux Unlocks Significant Gains

- Efficiency drives down the cost of solar electricity and improve speed to power
- Caelux Glass boosts output and plant economics

cSi Solar (PERC)
300MW, 21% Module Efficiency



$58.17/MWh LCOE
12 Month Installation

PERC+**Caelux1 (2026)**
300MW, **26% Hybrid-Tandem™**



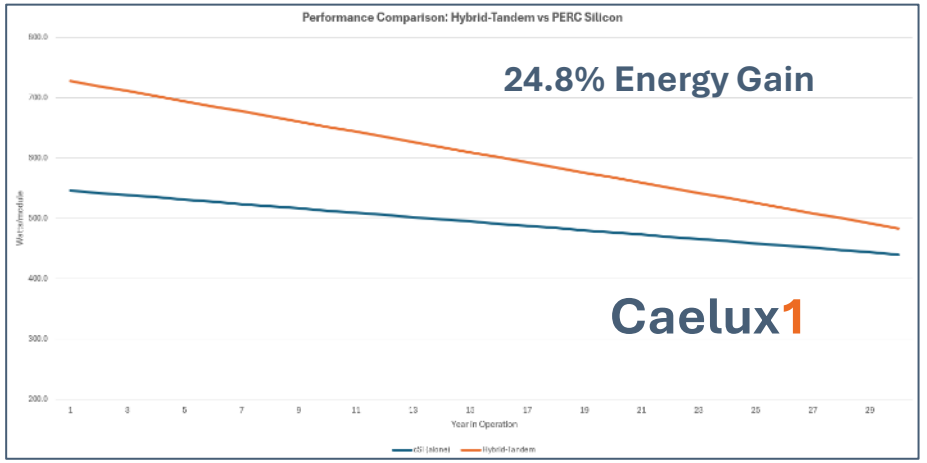
$53.82/MWh LCOE
↓ 7.5% LCOE
20.8%↓ Land
10.1 Month Installation

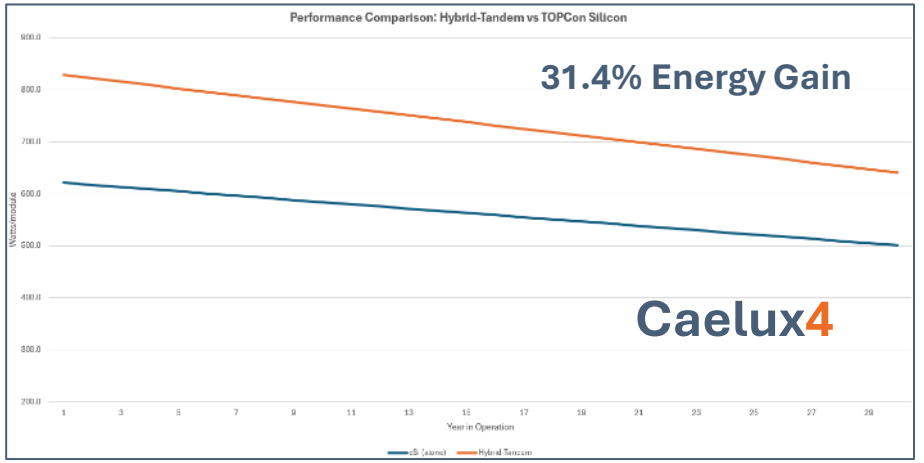
TOPCon+**Caelux4 (2029)**
300MW, **30% Hybrid-Tandem™**



$52.36/MWh LCOE
↓ 10% LCOE
30%↓ Land
9.2 Month Installation

**Illustrative examples based on Caelux modeling.*

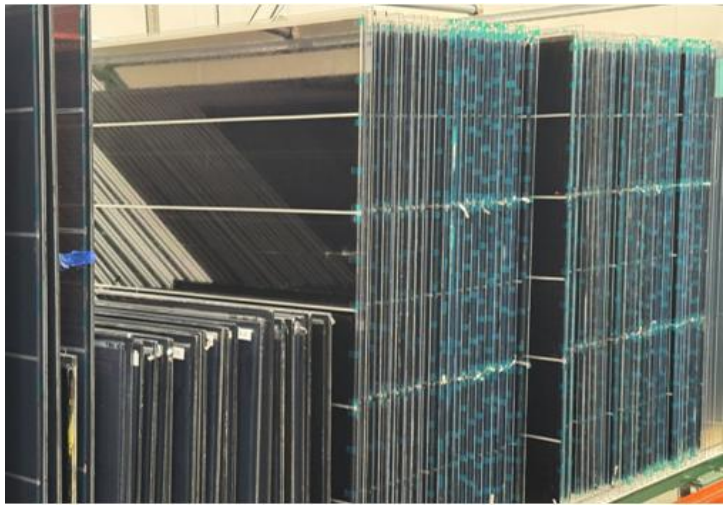


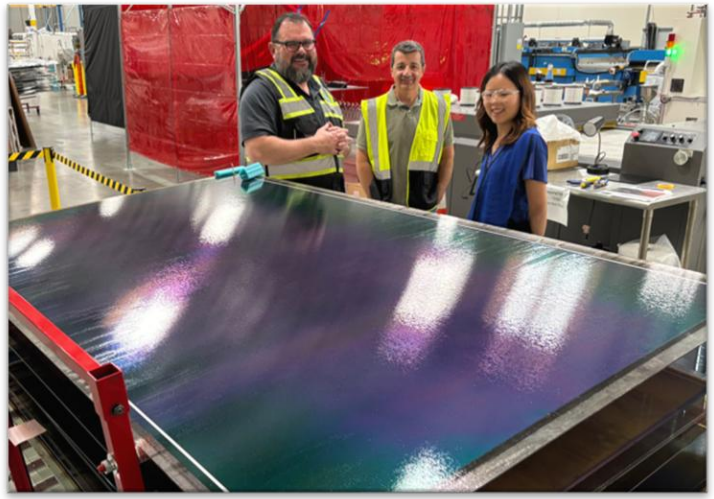


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Nearly 5,000 1x2m Units Caelux Glass to Date









The only 1x2m American-made perovskite panel on display at the National Lab of the Rockies

May 4, 2026 – *Audrey Robertson, assistant secretary of energy at DOE, with Caelux panel on display at the Energy Materials and Processing at Scale (EMAPS) facility at NLR's South Table Mountain (STM) campus.*

(Photo by Joe DelNero / NLR)

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Thank you.

https://caelux.com

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