



# Building Resilient Solar Supply Chains: **From Global Manufacturing to Local Production**

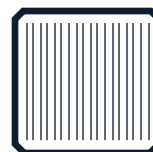
## About Thornova Solar

Thornova Solar is a leading Non-PFE (FEOC COMPLIANT) USA-affiliated company that boost integrated supply chain capabilities, covering the entire production process from silicon wafers and solar cells to solar modules.



**5 GW**

Wafer Capacity



**7 GW**

Cell Capacity



**7.5 GW**

Module Capacity

# Building Resilient PV Manufacturing.

Lessons from Establishing High-Performance Manufacturing Across Multiple Regions

---



Building a factory is relatively straightforward.

Building a factory that consistently produces high-quality modules at high yield within months is much more challenging.

# Thornova's Manufacturing Journey

Multiple Experience in Setting Up New Factories

## Indonesia

- Set up in October 2024 – modules – in mass production

## Kenya

- Set up in November 2025 – modules and cells – in mass production

## USA

- Modules: South Carolina – to be operational by Dec 2026
- Cells: Oklahoma – to be operational by Jan 2027

Manufacturing excellence is repeatable when processes and quality systems are standardized.

# What Makes a Manufacturing Expansion Successful?

## The 5 Pillars to Success

---

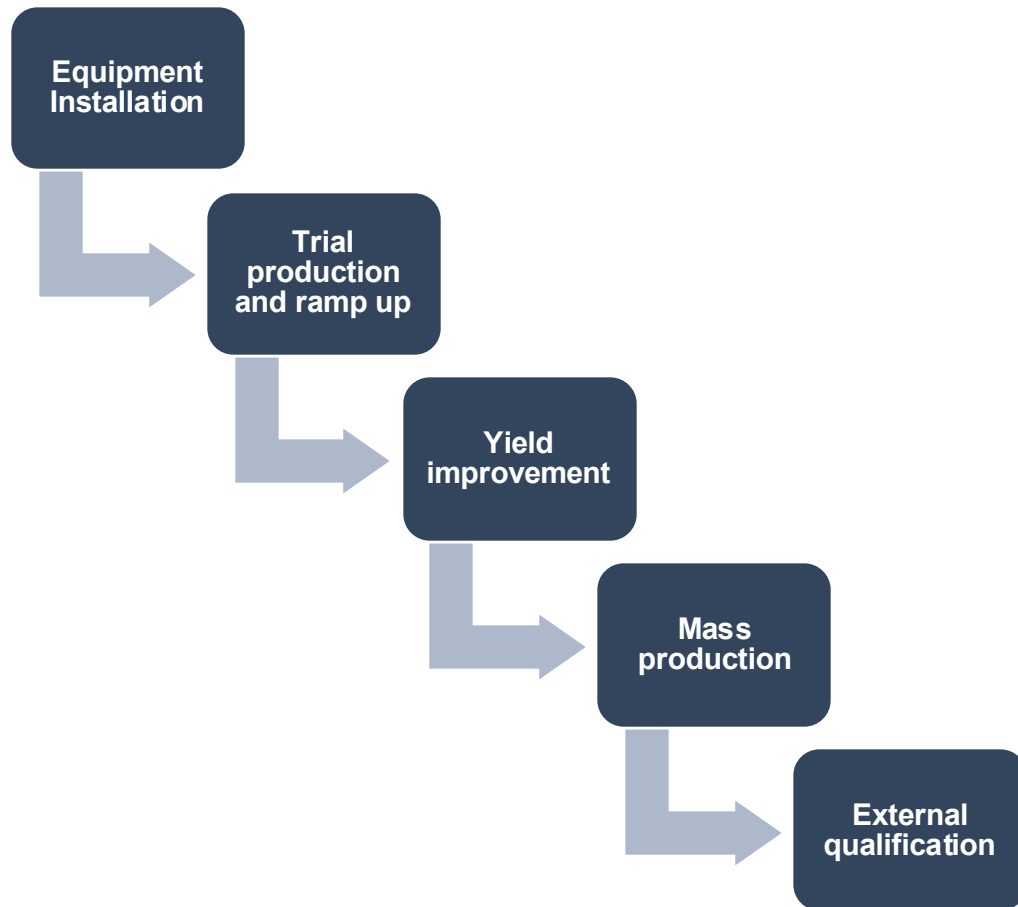
- Technology Transfer
- Engineering Expertise
- Workforce Training
- Process Control
- Quality Culture

A factory is more than equipment.  
Success depends on transferring:

- Manufacturing Know-how
  - Quality System
  - Operational Discipline

# Building High-Yield Factories Quickly

## Thornova's Approach



Each new plant follows a structured ramp-up methodology:

Goals:

- Rapid qualification
- Stable yields
- Consistent quality
- Minimal production losses

High yields are not accidental:  
They are **ENGINEERED**

# Independent Validation of Manufacturing Quality

Thornova’s Processes and Products Exel in Third Party Verifications



Our Factories Were Audited by:



Independent assessment



\* Independent Manufacturing and Supply Chain Traceability Assessment Ordered by our customers.

Our Products Regularly Achieve Highest Awards:



# Reliable and Bankable

Thornova Achieves Excellent Ratings as a Company



**BloombergNEF**

Rated **Tier 1**

 **Wood Mackenzie**

Rated A Grade  
Manufacturer **A**

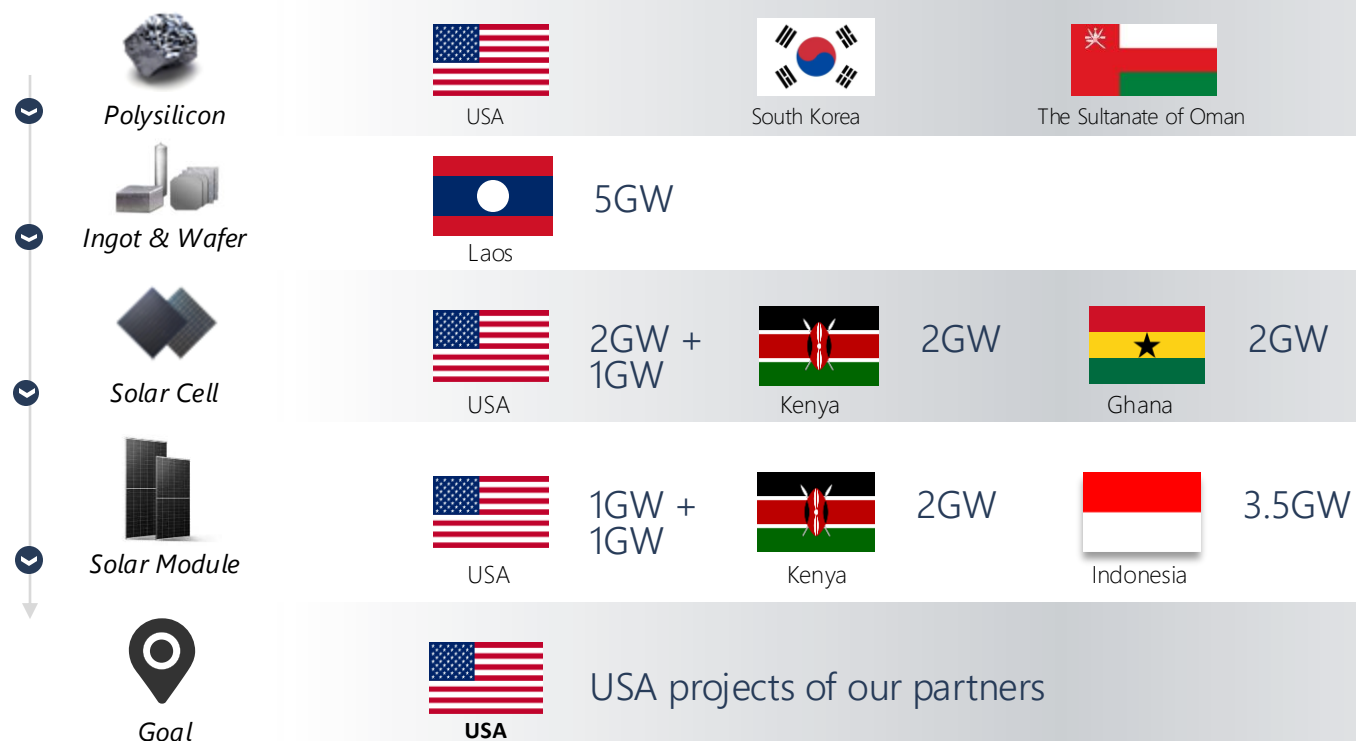
 **PVTECH**

PV ModuleTech  
Bankability rating **B**

# Case Study: Thornova Solar's Multi-Region Approach

## A Diversified Supply Chain Model

- Supply chain resilience: security, compliance, flexibility, long-term competitiveness.
- Reduced concentration risk, enhanced traceability, multiple sourcing options
- Resilience comes from diversification rather than dependence on a single geography



### Successful sourcing strategies combine

- Regional strength
- Diversification
- Traceability
- Flexibility

**Thornova offers cells/modules from 3 locations for the US market**

# The Value of Manufacturing Experience

Every new factory benefits from experience accumulated in previous projects

| Capability         | First Factory | Third Factory |
|--------------------|---------------|---------------|
| Ramp-up speed      | Learned       | Proven        |
| Workforce training | Developed     | Standardized  |
| Process control    | Optimized     | Replicated    |
| Quality system     | Established   | Repeatable    |
| Supply chain       | Built         | Diversified   |

Thornova has repeatedly demonstrated the ability to establish high-performing manufacturing operations across different countries.

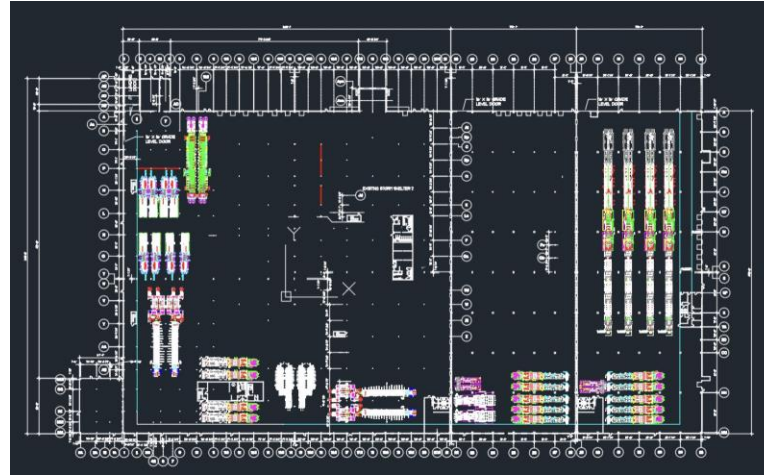
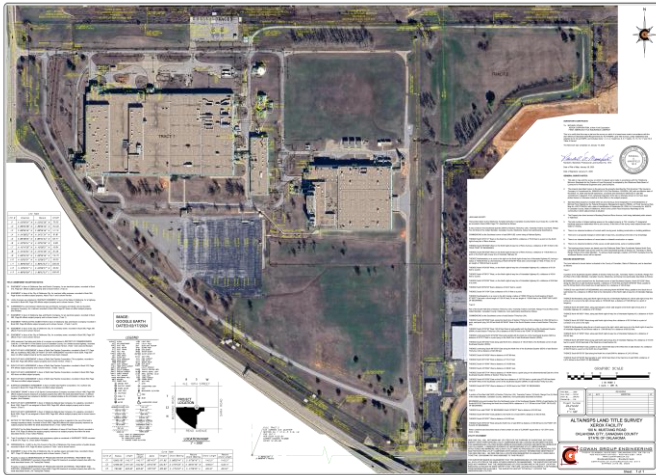
The US facilities are not a first attempt—they are the next implementation of a proven manufacturing model.

# The Oklahoma Cell Factory for Thornova

Set-up Under the Company Name NextNova

**THORNOVA** solar

**TIER 1**  
BloombergNEF



Officially start in Jan 2027



2GW Solar cell production in phase 1



Address: Oklahoma City, OK



Size: 456,000 sq ft

# The South Carolina Module Factory for Thornova

Set-up Under the Company Name NovaSung



Mass production by Dec 2026



2GW Solar module production in phase 1



Address: Summerville, SC



Size: 545,000 sq ft

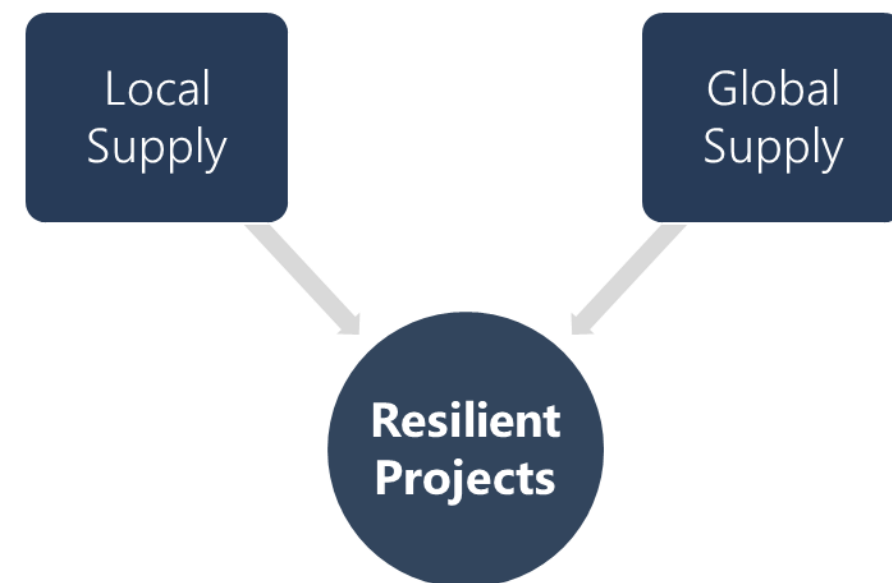
# What Customers Really Buy

Beyond Price per Watt

## Customers Purchase

- Bankability – BNEF Tier 1 listed
- Quality consistency
- Reliable delivery
- Traceability – for the full supply chain from quartzite to module
- Manufacturing capability
- Long-term support
- Compliance – with all regulations
- Lead time – Thornova will provide short lead times from its US factories
- Domestic content value – maximum possible DC – matching each projects specific requirements
- Beneficial cost ratio - through mixing and matching modules from different regions to match each projects requirements

- Best sourcing decision is not necessarily the cheapest product
- Risk-adjusted cost is becoming more important than invoice cost



# Key Takeaways

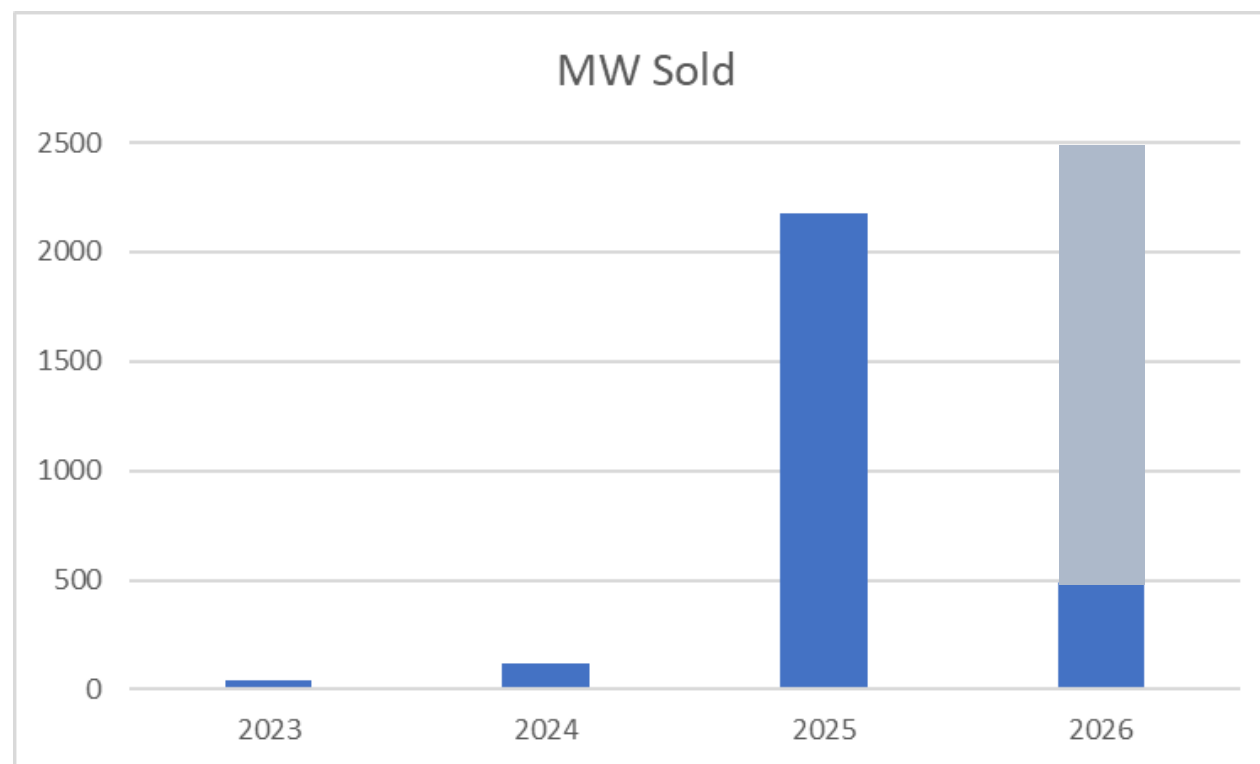
## Building Resilient Supply Chains

---

- Manufacturing excellence is transferable.
  - High-quality production depends on people and processes—not geography.
  - Standardized quality systems enable rapid factory ramp-up.
  - Independent testing validates consistent performance worldwide.
  - Domestic manufacturing improves visibility and control.
  - Global sourcing remains essential for competitiveness.
  - Diversification reduces geopolitical and operational risk.
  - The future is not domestic versus global—it is an intelligent combination of both.
- 
- **Reliable supply chains are built on repeatable manufacturing excellence, disciplined quality systems, and strategic geographic diversification.**
  - **Thornova offers customers the choice of production in 3 regions: US, Africa and Indonesia**

# Thornova's Development in the USA

From a Small Player to a Major Force



➤ Since 2025 Thornova has grown its US presence considerable, prioritizing this market above all else



The project will deliver energy to the Idaho Power system and contribute to Meta's goal to support 100% of its operations with renewable energy.

**THORNOVA** solar

**TIER 1**  
BloombergNEF

Location

**Idaho, USA**

Scale

**UTILITY**  
**125MWac**  
**(162.701 MWdc)**

Component model

**TS-BG72(550)**

Stent style

**Nextracker**  
**NX-Horizon**

Bank financing

**CIBC** 

**KeyBanc**  
Capital Markets  


 **CRÉDIT AGRICOLE**  
CORPORATE & INVESTMENT BANK

# THORNOVA solar



Ryan Qu  
Strategic Sales VP  
[ryan.qu@thornova-solar.com](mailto:ryan.qu@thornova-solar.com)



Andrea Bodenhagen  
Global Marketing Director  
[andrea.bodenhagen@thornova-solar.com](mailto:andrea.bodenhagen@thornova-solar.com)