

# A Strategic Guide to Uzbekistan's Solar Tenders: Understanding Local Content Requirements

Local Content, Certification & Turnkey Manufacturing Strategy

Content Partner: J. v. G. technology GmbH

*Turnkey solar module production lines — since 1997*

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# Technical Overview: Uzbekistan's Solar Tenders and Local Content Requirements



Created as part of the PVKnowHow Knowledge Network



Prepared by J.v.G. Technology GmbH



European specialists in turnkey solar module production lines

# Key Project Data

**40%**

## Local Content Requirement

Mandatory threshold for tender eligibility in Uzbekistan solar auctions

**UZB**

## Region

Uzbekistan – government-driven utility-scale solar procurement

**JSC**

## Certification Authority

Uzbekexpertise JSC – mandatory product and process certification body

**1**

## Manufacturing Model

Localized solar module assembly – turnkey factory concept

📄 Market focus: Government solar tenders · Local content requirement: 40% · Certification authority: Uzbekexpertise JSC · Manufacturing model: Localized solar module assembly · Region: Uzbekistan · Source: PVKnowHow / J.v.G. Technology GmbH

# Uzbekistan Solar Tender Market — Overview

## Market Structure

- Government-issued utility-scale solar tenders — primary procurement mechanism
- Ministry of Energy and international development banks are key stakeholders
- Multi-hundred MW project sizes typical in recent auction rounds
- Strong pipeline driven by national electrification and export targets

## Tender Eligibility Conditions

- Mandatory local content threshold: 40% of module value
- Non-compliant bids are disqualified regardless of price
- Certification by Uzbekexpertise JSC required for all components
- Domestic manufacturing capacity is a competitive differentiator

# Local Content Requirement – 40% Rule

## Definition

- At least 40% of the total value of PV modules supplied must originate from Uzbekistan
- Applies to materials, labor, and manufacturing processes performed in-country
- Calculated per module batch — documentation required at each tender submission

## Qualifying Activities

- In-country module assembly (glass, frame, junction box, encapsulant lamination)
- Locally sourced aluminum framing, junction boxes, and tempered glass — where available
- Local workforce employment in production and quality control roles

## Compliance Risk

- Pure import strategies do not satisfy the 40% threshold
- Partial assembly without documented value-add may be challenged during audit
- Ongoing compliance tracking is required — not a one-time certification

# Certification Process – Uzbekexpertise JSC

- 1 – Product Documentation Submission**

Technical datasheets, module specifications, and design files submitted to Uzbekexpertise JSC  
IEC 61215 / IEC 61730 certification from an accredited lab is a prerequisite
- 2 – Factory Audit**

On-site inspection of manufacturing premises, process controls, and equipment  
Quality management documentation and trained personnel are assessed
- 3 – Sample Testing**

Module samples submitted for independent performance and safety testing  
Testing against Uzbekistan national standards aligned with IEC norms
- 4 – Certificate Issuance**

Certificate of conformity issued by Uzbekexpertise JSC upon successful review  
Required before any product can be supplied to a government tender project
- 5 – Ongoing Surveillance**

Periodic re-audit and renewal – certificate is not a permanent authorization  
Any change to module design or production process may trigger re-certification

# Manufacturing Model – Localized Module Assembly

Parameter	Minimum Viable Setup	Full-Compliance Setup
Assembly Scope	Lamination + framing + J-box	Full line: tabbing, stringing, lamination, framing, testing
Local Content %	~40% (threshold compliance)	50–65% (competitive advantage)
Production Capacity	25–50 MW/year	100–200 MW/year
Workforce Required	30–60 operators	80–150 operators
Certification Path	Uzbekexpertise JSC + IEC 61215	Uzbekexpertise JSC + IEC 61215/61730 + ISO 9001
Ramp-Up Time	6–10 months from equipment delivery	12–18 months including staff training

# Factory Planning — Key Steps

## Site & Infrastructure

- Minimum 2,000–5,000 m<sup>2</sup> clean production floor depending on line scope
- Stable power supply (3-phase), climate control, and ESD-compliant flooring required
- Proximity to Tashkent logistics hub recommended for supply chain efficiency

## Equipment Selection

- Turnkey line concept from an experienced European provider reduces integration risk
- Semi-automatic lines viable at 25–100 MW/yr; full automation at >200 MW/yr
- Equipment must be pre-configured for local grid conditions and encapsulant materials

## Workforce Development

- No prior manufacturing experience required with a structured turnkey concept
- On-site team training included in proven turnkey delivery models
- Local technical staff trained to operate, maintain, and troubleshoot all systems

# Supply Chain Localization Strategy

## Importable Components (Short-Term)

- Solar cells (mono or bifacial) — sourced from established Asian suppliers
- EVA encapsulant film — international supply chain standard
- Backsheet — imported; glass-glass configurations also viable
- Soldering ribbon and bus bar — specialized, imported

## Locally Sourced Targets (Medium-Term)

- Aluminum frames — Uzbekistan has active aluminum smelting capacity
- Tempered low-iron glass — regional float glass industry developing
- Junction boxes & cables — local assembly feasible with partner investment
- Packaging and pallets — fully achievable domestically

# Market Access Strategy

1

## Establish Local Entity

Register an LLC or JV in Uzbekistan  
— required for tender participation  
and certification under  
Uzbekexpertise JSC

2

## Qualify Manufacturing

Deploy a proven turnkey assembly  
concept; complete Uzbekexpertise  
certification before first tender bid

3

## Bid on Government Tenders

Submit compliant bids documenting  
40%+ local content; certification and  
traceability records are mandatory  
attachments

- 📄 An experienced European turnkey provider can compress the timeline from factory planning to first tender-compliant module production — reducing market entry risk for new manufacturers.

# Financial & Operational Planning Considerations

## Capital Expenditure

- Semi-automatic line (25–50 MW/yr): moderate capex; suitable for initial market entry
- Full-automation line (100–200 MW/yr): higher upfront investment; lower cost/module at scale
- Factory fit-out, certification, and working capital must be budgeted separately

## Operational Cost Drivers

- Cell and encapsulant costs dominate module cost structure (~60–70%)
- Local labor cost advantage partially offsets imported component costs
- Energy costs for lamination and testing processes are significant at scale

## Revenue & Risk

- Government tender contracts provide revenue visibility — typically 20–25 year PPAs
- Local content compliance failure results in contract disqualification — non-negotiable risk
- Currency and regulatory risk must be assessed under Uzbek investment law

# Strategic Importance — Why Localize Now

## Tender Pipeline Is Active

- Uzbekistan has issued successive GW-scale renewable energy tenders since 2021
- Government targets multi-GW solar deployment by 2030 — procurement pace is accelerating
- Early movers with certified local production hold a durable competitive advantage

## Local Content Bar Will Rise

- 40% is the current threshold — policy trajectory in comparable markets points to increases
- Companies that establish supply chain depth now are better positioned for future requirements
- Deeper localization also provides cost insulation against import tariff changes

## Proven Turnkey Concept De-Risks Entry

- A proven turnkey manufacturing concept eliminates the need to build process expertise from scratch
- Turnkey delivery includes equipment, commissioning, training, and certification support
- Time-to-production is measurable and contractually defined — reducing execution risk

# Key Takeaways

1

## Compliance Is Non-Negotiable

40% local content and Uzbek expertise JSC certification are hard prerequisites — not optional differentiators

2


## Manufacturing Is the Gateway

In-country module assembly is the most reliable path to both compliance and long-term market competitiveness

3

## Turnkey Reduces Execution Risk

An experienced European turnkey provider compresses ramp-up time and provides a structured path from factory planning to certified production

 Source: PVKnowHow / J.v.G. Technology GmbH · These case studies are based on real figures but are composite scenarios for illustrative purposes.

# About the Content Partner

## **J. v. G. technology GmbH** – The DESERT Company

Founded in 1997 in Bavaria, Germany. Family-owned engineering company specializing in turnkey solar module production lines.

More than 90 factory projects delivered worldwide.

On-site team training included – no prior manufacturing experience required.

### **Key areas:**

Turnkey PV manufacturing lines | DESERT Technology® |  
TÜV-certified module designs | Factory planning to production

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