

Ready to Shine? Your Insider's Guide to Solar Panel Manufacturing Rules in the UAE

Regulatory Framework, Licensing & Compliance

Content Partner: J. v. G. technology GmbH

Turnkey solar module production lines — since 1997

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Technical Overview: Solar Panel Manufacturing Regulations in the UAE



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

UAE

Region

United Arab Emirates —
federal + emirate-level
regulatory environment

2050

Strategy Horizon

UAE Energy Strategy 2050
— net-zero target for energy
and water sectors

4+

Regulatory Bodies

MOEI, MoIAT, DEWA, DOE —
overlapping federal and
emirate jurisdiction

Solar

Line Type

Solar module manufacturing
facility — crystalline silicon
(c-Si) focus

📄 Scale: Not specified (regulatory framework focus) · Investment: Not specified · Ramp-up: Project-dependent ·
Source: PVKnowHow / J.v.G. Technology GmbH

UAE Energy Strategy 2050 – Strategic Context

National Targets

- Triple renewable energy contribution in the power mix by 2030
- Increase installed clean energy capacity from 14.2 GW to 19.8 GW
- Achieve 32% clean energy share in total energy mix by 2030
- Net-zero in energy and water sectors by 2050
- AED 150–200 billion investment commitment by 2030

Manufacturing Relevance

- Strategy explicitly promotes local and international investment in the renewable energy sector
- Solar capacity projected to reach 44 GW by 2050 – creating domestic demand for modules
- Operation 300bn targets industrial GDP growth from AED 133 bn to AED 300 bn by 2031
- UAE Net Zero 2050 Strategic Initiative underpins all regulatory decisions

Regulatory Architecture – Federal & Emirate Level

MOEI – Ministry of Energy & Infrastructure

- Primary architect of national energy policy and federal regulations
- Issued Federal Law (2022) regulating grid connection of distributed renewable energy units
- Limited direct influence in Abu Dhabi and Dubai; primary focus on Northern Emirates

MolAT – Ministry of Industry & Advanced Technology

- Oversees industrial licensing, product standards, and manufacturing compliance
- ESMA (standards body) now operates under MolAT
- Administers Operation 300bn, ICV Program, and Make it in the Emirates initiative

DEWA / DOE – Emirate-Level Authorities

- Dubai: Dubai Electricity and Water Authority (DEWA) – local permits and grid connection
- Abu Dhabi: Department of Energy (DOE) – local regulatory approvals
- Other emirates: respective municipalities and utility authorities

Dual-Layer Jurisdiction

- UAE has both federal-level and individual emirate-level laws and regulations
- Federal framework sets minimum standards; emirates may apply additional requirements
- Free zone operations add a third regulatory layer – free zone authority approvals required

Legal Framework for Manufacturing Operations

1

Company Formation

UAE Commercial Companies Law governs incorporation — mainland or free zone
100% foreign ownership now permitted for most industrial activities on the mainland

2

Trade License

Initial approval and trade name from Department of Economic Development (DED) or free zone authority
Allows the company to operate legally in the UAE

3

Industrial License

Issued by DED (mainland) or free zone authority — legally authorizes manufacturing activity
Requires detailed business plan, factory layout, and machinery specifications

4

Construction Permit

Factory building plans submitted to municipal authority for structural and safety review
Civil Defense approval mandatory — fire and life safety code compliance required

5

Additional NOCs

No Objection Certificates from MOEI, DEWA/DOE, and environmental agencies as applicable
A free zone license does not automatically cover all external body approvals


Certification Requirements — ESMA / IEC Standards

ESMA / MoIAT Certification Pathway

- Solar PV modules are regulated products — Certificate of Conformity is mandatory before sale or installation in the UAE
- Two schemes: Emirates Conformity Assessment Scheme (ECAS) or Emirates Quality Mark (EQM)
- ECAS: mandatory for regulated products; 1-year validity; issued after technical review
- EQM: includes factory audits and continuous surveillance; 3-year validity
- ISO 9001 QMS certificate required for the manufacturing facility

International Standards Required

- **IEC 61215** — Design qualification and type approval for crystalline silicon PV modules
- **IEC 61730** — PV module safety qualification
- Additional standards may apply for desert heat and coastal salt-air exposure conditions
- Test reports must be from ISO 17025-accredited laboratories (UAE or international)
- Technical documentation must be retained for 10 years and made available to authorities on request

 ESMA certification timeline: from a few weeks to several months depending on application completeness and audit readiness. Early preparation and engagement with accredited testing bodies is recommended.

Environmental Compliance

Environmental Impact Assessment (EIA)

- Mandatory pre-condition for most industrial licenses — typically the first major regulatory hurdle
- Managed by Ministry of Climate Change and Environment (MOCCA) in coordination with local environmental authority
- EIA approval often a prerequisite for obtaining trade and industrial licenses
- Underestimating EIA detail requirements is a common cause of project delays

Waste & Emissions Permits

- Manufacturing solar panels involves glass, silicon, metals, polymers, and chemicals — all subject to waste regulations
- Hazardous waste must be handled through approved specialized disposal facilities
- Air emission and wastewater discharge permits required where applicable
- Federal Decree-Law No. 11 of 2024: mandatory GHG emissions reporting now applies to all entities, including free zones

Climate Law — Federal Decree-Law No. 11 / 2024

- Effective 30 May 2025 — full compliance deadline 30 May 2026
- Applies to all mainland and free zone entities whose operations generate GHG emissions
- Obligations: GHG inventory (Scope 1 & 2), MRV reporting system, emissions reduction plan, climate risk assessment
- Non-compliance: fines from AED 50,000 to AED 2,000,000 (repeat offences: up to AED 4,000,000)

Mainland vs. Free Zone – Structural Comparison

| Criterion | Mainland | Free Zone |
|----------------------|---|---|
| Foreign Ownership | 100% now permitted for most industrial activities | 100% always permitted |
| License Issuing Body | Department of Economic Development (DED) | Respective Free Zone Authority |
| Customs Duties | Standard import duties may apply (exemptions possible for industrial equipment) | Customs duty exemption on imported machinery and raw materials |
| Market Access | Direct access to UAE domestic market | Primarily export-oriented; UAE market sale requires additional steps |
| External Approvals | Multiple NOCs from federal and municipal bodies | Free zone license does not cover Civil Defense or MOCCAIE approvals – obtained separately |
| License Renewal | Annual renewal – contingent on continued compliance | Annual renewal – same compliance obligations apply |

Operations & Labor Law

UAE Labor Law

- Federal Decree-Law No. 9 of 2024 amended core labor regulations
- Amendments enhance worker protection, introduce flexible working arrangements, and improve enforcement
- Applies to both mainland and free zone employees
- Visa and work permit requirements apply to all expatriate workers

Workforce Considerations

- UAE does not require prior solar manufacturing experience — on-site training is viable
- Expatriate workforce widely utilized; Emiratization targets may apply in certain categories
- Health & safety obligations under UAE labor law and Civil Defense codes
- Factory design must comply with fire and life safety code of practice from the outset

Dispute Resolution

- UAE has a well-established legal system at both federal and emirate level
- Respected arbitration centers available — e.g., Dubai International Arbitration Centre (DIAC)
- Commercial disputes can be resolved through structured arbitration processes

Investment Incentives & Government Support

1

Financial Incentives

Emirates Development Bank: AED 30 billion allocated to support priority industrial sectors including electrical equipment and electronics.
Competitive financing for qualifying manufacturers.

2

Operational Incentives

Customs exemptions on industrial machinery and raw material imports.
Reduced energy tariffs for industrial businesses in Ras Al Khaimah, Fujairah, Ajman, and Umm Al Quwain.

3

Market Access Programs

In-Country Value (ICV) Program channels government procurement into local manufacturers. "Make it in the Emirates" initiative provides brand identity and platform access for locally produced goods.

i Operation 300bn targets industrial GDP growth from AED 133 billion to AED 300 billion by 2031. Abu Dhabi manufacturing value add reached a record AED 26.8 billion in Q2 2024, accounting for 16.3% of non-oil GDP.

Risk, Audits & Ongoing Compliance

Regulatory Audits & Inspections

- ESMA / MoIAT, environmental agencies, and Civil Defense conduct regular inspections — including unannounced audits
- Inspections verify adherence to license conditions, product standards, and environmental compliance
- Factory audits required for EQM certification (continuous surveillance)
- Licenses require annual renewal contingent on demonstrated compliance

Penalties & Enforcement

- Non-compliance consequences: fines, temporary shutdowns, or license revocation
- Climate law fines: AED 50,000–AED 2,000,000 per violation; repeat offences up to AED 4,000,000
- Non-compliance may also exclude operators from government procurement and green financing
- Products without valid ECAS certification cannot be legally traded in the UAE market

Compliance Management

- Monitor updates continuously via official portals: MOEI, MoIAT, DEDs, and environmental agencies
- Regulatory landscape is fast-moving — proactive engagement with authorities is advisable
- An experienced turnkey manufacturing partner can integrate regulatory compliance requirements into facility design from day one — reducing rework and delays

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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