

A Manufacturer's Guide to RETIE Certification for Solar Modules in Colombia

A Factual Guide to Mandatory Compliance for PV Module Manufacturers and Exporters

Content Partner: J. v. G. technology GmbH

Turnkey solar module production lines — since 1997

www.jvg-thoma.com





Technical Overview: RETIE Certification for Solar Modules in Colombia



Created as part of the PVKnowHow Knowledge Network



Prepared by J.v.G. Technology GmbH



European specialists in turnkey solar module production lines

Market Context: Why Colombia?

Growing Solar Market

Colombia's renewable energy targets are driving sustained demand for certified, grid-compliant solar modules

Mandatory Regulatory Framework

All solar modules sold or installed in Colombia must comply with RETIE — enforced by law, not optional

Strategic Entry Barrier

RETIE certification is a non-negotiable market access requirement; understanding it early is a competitive advantage

Key Project Data

RETIE

Topic

Solar Module Certification –
Colombia

6–12

**Process Duration
(months)**

From documentation
submission to certificate
issuance

3 yr


Certificate Validity

Valid for 3 years; subject to
annual surveillance audits

Dual

Scope

Product compliance +
factory audit (production
process)

 Source: PVKnowHow / J.v.G. Technology GmbH – composite scenario based on real consulting data

What Is RETIE? A Legal Mandate, Not a Choice

Full Name & Legal Basis


- *Reglamento Técnico de Instalaciones Eléctricas* – Technical Regulation for Electrical Installations
- Established by Colombia's Ministry of Mines and Energy (MINMINAS)
- Latest version: Resolution 40117 – effective April 3, 2024

Scope of Application

- Applies to manufacturers, importers, distributors, and installers
- Covers all electrical products including PV modules, inverters, and batteries
- Expanded under 2024 revision to include renewable energy technologies


Core Purpose

- Protect human and animal life
- Preserve the environment
- Prevent misleading practices in the electrical products market

 No Certificate of Conformity = no legal sale or installation. Non-compliance leads to fines, mandatory product recalls, and market bans.

IEC vs. RETIE: Understanding the Difference

Dimension	IEC (61215 / 61730)	RETIE (Colombia)
Nature	International voluntary standard	National mandatory regulation
Issuing Body	International Electrotechnical Commission	Ministry of Mines and Energy, Colombia
Testing Body	Internationally accredited labs	ONAC-accredited labs only
Replaces RETIE?	No — prerequisite only	Required in addition to IEC
Geographic Scope	Global recognition	Colombia market only
Validity	Varies by scheme	3 years + annual audits

 IEC 61215 and IEC 61730 are **foundational prerequisites** for RETIE — but they are **not a substitute**. A separate ONAC-accredited certification is always required.

Certification Process: Four Structured Stages

Stage 1: Select ONAC Partner

Identify and engage an ONAC-accredited certification body

Clarify applicable certification scheme (Type 1a, 1b, 4, or 5)

1

Stage 3: Product Testing

Sample modules sent to accredited laboratory for rigorous performance and safety testing

Testing aligned with IEC 61215 / IEC 61730 as baseline

3

Stage 2: Documentation & BOM

Submit technical file: design drawings, Bill of Materials, component datasheets

Include existing IEC test reports as supporting evidence

2

Stage 4: Factory Audit & Certificate

On-site audit of production process (under Scheme Type 4 or 5)

Certificate of Conformity issued upon successful completion

4

Technical Requirements: What Must Be Demonstrated

Product Performance

- Durability and safety under Colombia's specific environmental conditions
- High altitude, humidity, and grid stability requirements
- Verified against IEC 61215 (performance) and IEC 61730 (safety)

Component Standards

- Solar glass: impact resistance and transmissivity standards
- Full Bill of Materials (BOM) reviewed and validated
- Component-level datasheets required for all critical parts

Factory Compliance

- Production process audit (for Scheme Type 4 / 5)
- Annual surveillance audits required to maintain certificate validity
- Each factory location requires its own certification

Key Risk Factors: Timeline, BOM & Language

Timeline Risk

- Initial process: up to 6 months at minimum; full process 6–12 months
- Delays at documentation or testing stage extend total duration
- Annual audit calendar must be managed to maintain certificate validity
- **Mitigation:** Engage ONAC partner early; begin documentation in parallel with factory setup

Bill of Materials (BOM) Risk

- Any change to certified BOM (cell supplier, encapsulant, frame) may require re-certification
- Component pre-certification can streamline final module certification
- **Mitigation:** Lock BOM early; use pre-certified components where possible

Language & Documentation Risk

- All technical files must align with Colombian regulatory language requirements
- Regulatory documentation in Spanish; technical nuances can cause submission delays
- **Mitigation:** Work with a locally experienced ONAC-accredited partner for documentation review

Cost & Validity: What to Budget and Plan

Indicative Cost Structure

- Initial certification: ~\$8,000–\$10,000 per product family
- Annual surveillance renewal: ~\$2,000 per product family
- Recertification (every 3 years): ~\$4,000 per product family
- Each factory location: separate certification required

Validity & Maintenance Timeline

- Certificate valid for **3 years** from issuance
- Annual surveillance audits mandatory to maintain validity
- Recertification triggered by: expiry, BOM change, new factory
- 2024 RETIE: 15-month transition period for prior certificates

 Source: U.S. International Trade Administration / RETIE Resolution 40117 (2024). Costs are indicative; actual fees depend on certification body and product scope.

FAQ Highlights

1

Does an IEC certificate replace RETIE?

No. IEC 61215 and IEC 61730 are prerequisites but cannot substitute for RETIE. An ONAC-accredited certification body must independently certify the product for the Colombian market.

2

How long is a RETIE certificate valid?

Generally 3 years. Annual surveillance audits are required to maintain its validity throughout that period.

3

What happens if modules are sold without RETIE?

Selling uncertified modules is illegal in Colombia. Consequences include fines, mandatory product recalls, sales bans, and reputational damage.

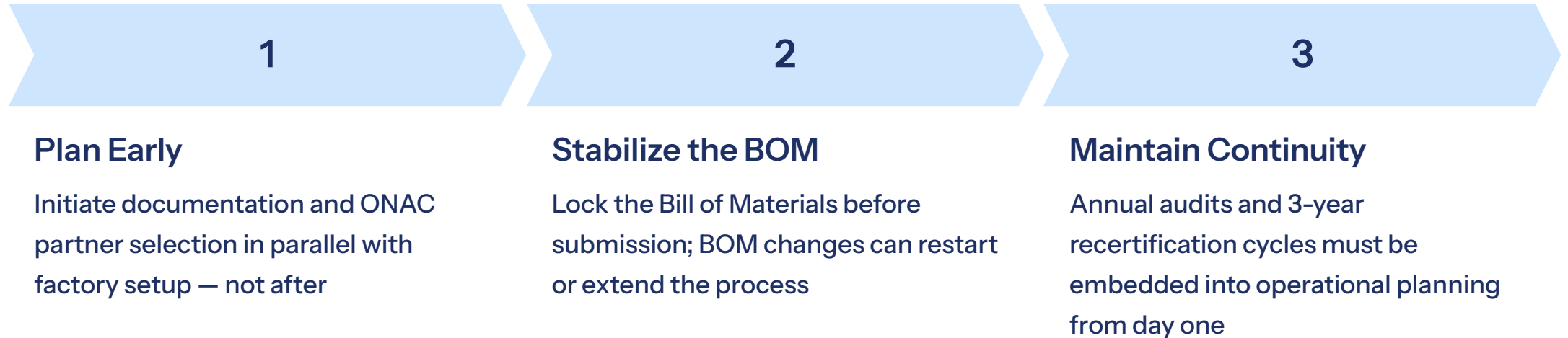
4

Can certification begin before the factory is operational?

Yes. Documentation preparation and initial dialogue with a certification body can begin during factory setup, reducing overall time-to-market.

Strategic Takeaway: RETIE as a Market Enabler

RETIE certification is not merely a compliance hurdle — it is the entry ticket to one of Latin America's fastest-growing solar markets. Manufacturers who plan for it systematically gain a durable competitive advantage.



- ✔ Manufacturers who integrate RETIE compliance into their market entry plan convert a regulatory requirement into a sustained market access advantage in Colombia.

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

www.jvg-thoma.com

Contact

J.v.G. Technology GmbH

Möningerberg 1a, 92342 Freystadt, Germany

info@jvg-thoma.de | www.jvg-thoma.com

Source:

<https://www.pvknowhow.com/countries/colombia/retie-certification-solar-modules-colombia/>

Created with the support of JvGLabs — specialist for AI systems

and AI-driven visibility. www.jvglabs.com