

Navigating Costa Rica's Environmental Permitting: A Guide to SETENA for Solar Factory Investors

SETENA Environmental Licensing — Process, Requirements & Strategy

Content Partner: J. v. G. technology GmbH

Turnkey solar module production lines — since 1997

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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

EsIA

Main Requirement

Environmental Impact Assessment – mandatory for industrial manufacturing facilities

9–12

Months – Typical Timeline

From initial submission to Environmental Viability Resolution (RVA)

D2

SETENA Category

Typical classification for medium-impact industrial facilities under Annex 1

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Region: Costa Rica

SETENA jurisdiction applies nationwide; additional municipal permits required

📄 Project type: Solar module manufacturing facility · Regulatory process: SETENA Environmental Licensing · Main requirement: Environmental Impact Assessment (EsIA) · Timeline: 9–12 months · Region: Costa Rica · Source: PVKnowHow / J.v.G. Technology GmbH

What Is SETENA?

Institutional Role

- Secretaría Técnica Nacional Ambiental — Costa Rica's national environmental permitting authority
- Operates under the Ministry of Environment and Energy (MINAE)
- Mandated by Environmental Law No. 7554 (1995) and its regulations
- Issues the Environmental Viability Resolution (RVA) — prerequisite for construction permits

Why It Matters for Industry

- No industrial or infrastructure project may begin without a valid RVA
- Applies to new manufacturing facilities, expansions, and significant modifications
- Non-compliance results in project halt, fines, and legal exposure
- Permitting category determines scope and cost of required EIA documentation

SETENA Permitting Categories Explained

Category D1 – Low Impact

- Simplified Environmental Questionnaire (FAF)
- Fastest resolution pathway – typically 1–3 months
- Applies to small-scale or low-risk commercial activities

Category D2 – Moderate Impact

- Requires a full Environmental Impact Assessment (EslA)
- Typical classification for medium-scale industrial manufacturing
- Timeline: 9–12 months including public consultation

Category D3 – High Impact

- Comprehensive EslA with specialist studies required
- Applies to large industrial, energy, or infrastructure projects
- Extended review and mandatory public hearing process

Solar Manufacturing – Typical Classification

- Generally classified D2 based on facility footprint and process inputs
- Chemical handling (solvents, laminates) may elevate category
- Pre-classification consultation with SETENA strongly recommended

EslA Core Requirements for a Manufacturing Facility

Project Description & Technical Baseline

- Full facility description: footprint, production processes, utilities
- Equipment inventory including energy, water, and waste profiles
- Site topography, access roads, and infrastructure connections

Environmental Characterization Studies

- Hydrology, geology, soil classification, and groundwater assessment
- Flora and fauna inventory – sensitivity to protected areas
- Air quality baseline and noise modeling for industrial operations

Impact Assessment & Mitigation Plan

- Identification and scoring of all significant environmental impacts
- Mitigation measures with assigned responsibilities and timelines
- Environmental Management Plan (PGA) – binding compliance document

SETENA Permitting Process: Step-by-Step

1

1 — Pre-Classification (Screening)

Submit project description to SETENA for category determination
Obtain official classification (D1/D2/D3) before investing in full EsIA

2

2 — EsIA Preparation

Engage SETENA-registered environmental consultants (RCA-certified)
Conduct baseline studies; draft full EsIA document per SETENA guidelines

3

3 — Formal Submission

File EsIA package with SETENA (digital and physical copies required)
Pay processing fees; receive official registration number (expediente)

4

4 — Technical Review & Public Consultation

SETENA technical team reviews; may issue information requests (prevenciones)
D2/D3 projects subject to public consultation and comment period

5

5 — Environmental Viability Resolution (RVA)

Positive RVA issued — enables construction permit application
RVA includes binding conditions; ongoing compliance monitoring required

Regulatory Timeline: Realistic Project Benchmarks

Phase	Estimated Duration	Key Dependency
Pre-classification & site selection	1-2 months	Site access; zoning confirmation
Baseline environmental studies	2-3 months	Field access; seasonal constraints
EslA document preparation	2-3 months	Consultant capacity; data completeness
SETENA formal review	3-5 months	Completeness of submission; prevenciones volume
Public consultation window	1-2 months	Opposition risk; public hearing scheduling
RVA issuance	1 month	Resolution of all technical observations
Total (D2 category)	9-12 months	Assumes proactive document management

Risk Management in the Permitting Process

Primary Risk Factors

- Incomplete baseline studies — most common cause of SETENA prevenciones
- Site proximity to protected areas, wetlands, or indigenous territories
- Improper category pre-assessment leading to under-scoped EslA
- Use of non-SETENA-registered consultants — grounds for rejection

Risk Mitigation Strategies

- Early pre-classification meeting with SETENA before committing to site
- Engage consultants with prior D2 industrial project experience in Costa Rica
- Conduct internal completeness review before formal submission
- Maintain parallel track with municipal permitting to avoid sequential delays

Industrial Planning Considerations for Solar Manufacturing

Site Selection Criteria

- Industrial-zoned land (ZI) avoids conflict with residential or agricultural classification
- Distance from Áreas de Conservación (SINAC zones) reduces environmental sensitivity
- Proximity to grid infrastructure, port access, and labor pool

Facility Design for Compliance

- Closed-loop water systems reduce effluent volumes subject to AyA oversight
- Hazardous material storage must meet MINSALUD and SETENA joint requirements
- Stormwater management plan required as part of EslA hydrology chapter

Parallel Permit Tracking

- CFIA construction visa, municipal building permit, and SETENA run concurrently
- AyA water concession and ARESEP electricity connection have independent timelines
- Integrated permitting matrix reduces total project schedule risk

Workforce & Community Relations

- Public consultation phase creates stakeholder engagement obligations
- Early community outreach can prevent formal objections during review
- Local hiring commitments are viewed favorably in environmental social chapters

Sustainability Strategy: Embedded in the EsIA

Carbon & Energy

- Costa Rica's renewable grid (>99% renewables) supports low-carbon manufacturing footprint
- Energy efficiency commitments in EsIA strengthen project environmental scoring
- On-site solar generation for own consumption well-received by SETENA reviewers

Waste & Circular Economy

- Industrial waste management plan (Plan de Manejo de Residuos) is a mandatory EsIA annex
- Chemical waste must be routed through SETENA-registered disposal operators
- Zero-landfill targets for production scrap align with MINAE sustainability policy

Water Stewardship

- Water concession from SENARA or AyA required before operations commence
- Water balance and consumption targets documented in EsIA technical annex
- Recycled-water targets above 80% reduce regulatory scrutiny in review

Strategic Importance of Early Environmental Planning

1

Permitting as a Project Gateway

RVA from SETENA is the non-negotiable prerequisite — all construction and financing timelines depend on it

2

Schedule Risk is Cost Risk

Each month of permitting delay at a greenfield site represents direct carrying costs and delayed revenue

3

Turnkey Provider Advantage

An experienced European turnkey provider familiar with Costa Rican regulatory context reduces submission errors and response times significantly

- ❏ A proven turnkey manufacturing concept integrates environmental compliance planning from day one — reducing the learning curve for investors entering Costa Rican industrial operations for the first time.

Environmental Compliance Checklist — Pre-Submission

Documentation

- SETENA pre-classification letter obtained
- RCA-registered environmental consultant contracted
- All baseline studies completed (hydrology, biology, air, noise)
- EslA document drafted, reviewed, and signed by consultant of record
- Public participation plan included for D2/D3 category

Site & Technical Readiness

- Industrial zoning confirmed at municipal level
- No overlap with SINAC protected areas or buffer zones
- Stormwater drainage and waste management plans finalized
- Hazardous materials handling protocols documented
- Parallel permits (AyA, CFIA, municipal) initiated concurrently

Sources & Further Reference

Knowledge Network

PVKnowHow – Industrial Solar Manufacturing Knowledge Base

Composite case studies prepared with input from an experienced European turnkey provider active in Latin American factory projects

www.pvknowhow.com

Regulatory References

- Ley Orgánica del Ambiente No. 7554 (Costa Rica, 1995)
- Decreto Ejecutivo No. 31849-MINAE – SETENA procedural regulations
- SETENA Annex 1 – Activity classification list
- SINAC – Sistema Nacional de Áreas de Conservación

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.

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Key areas:

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

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Source: <https://www.pvknowhow.com/countries/costa-rica/environmental-assessment-solar-factory-costa-rica>

Created with the support of JvGLabs — specialist for AI systems

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