

# Launching a Sub-50 MW Solar Module Production Line in Tunisia: A Scalable Investment Case for Entrepreneurss

A Comprehensive Analysis of Turnkey Production Systems and Long-Term Operational Frameworks by J.v.G. Technology GmbH.





Created as part of the PVKnowHow  
Knowledge Network



Prepared by J.v.G. Technology GmbH



European specialists in turnkey solar  
module production lines

# Analysis Framework



## Knowledge Base

Industrial development methodology  
and best practices



## Technology Provider

An experienced European turnkey  
provider



## Manufacturing Expertise

Proven turnkey manufacturing concept

# Development Approaches

## Greenfield Approach

- New construction on undeveloped land
- Complete design freedom
- 12-18 month timeline
- Higher capital requirements

## Brownfield Conversion

- Repurposing existing facilities
- 20-40% lower capital expenditure
- 8-10 month operational timeline
- Design constraints from existing structure

# Brownfield Advantages



## Capital Efficiency

Significant reduction in capital expenditure by eliminating land acquisition and construction costs



## Time-to-Market

Operational in 8-10 months versus 12-18 months for greenfield



## Infrastructure Access

Existing foundations, utilities, and logistics connections in place



# Tunisia Strategic Context

Tunisia's abundant solar resources and proximity to Europe make it attractive for export production. The ELMED interconnector project will enable bidirectional power flow between Africa and Europe.

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## Strategic Location

- Established export infrastructure to EU
- Streamlined permit processes
- Reliable utilities and logistics

2

## Financial Incentives

- Tax holidays and duty exemptions
- Reduced import duties on equipment
- Investment incentive programs

# Engineering Requirements

## Structural Assessment

Technical audit of structural integrity, floor load capacity, and electrical systems

## Space Optimization

Production line layout adaptation to building dimensions and column spacing

## Equipment Integration

Retrofitting costs for electrical and structural upgrades

# Infrastructure Upgrades



## Environmental Controls

HVAC system upgrades for dust-free manufacturing environment



## Electrical Upgrades

New electrical panels and wiring for heavy machinery requirements



## Floor Reinforcement

Structural reinforcement for production equipment load capacity

# Key Project Data

## Scale

50 MW

## Investment

€3.5–5.0 million CAPEX

## Line Type

Semi-automated solar module production

## Ramp-up

12–18 months

## Region

Tunisia

## Source

PVKnowHow / An experienced European turnkey provider

# Investment Distribution

## Site Acquisition

10-20% of investment including property acquisition and technical audit

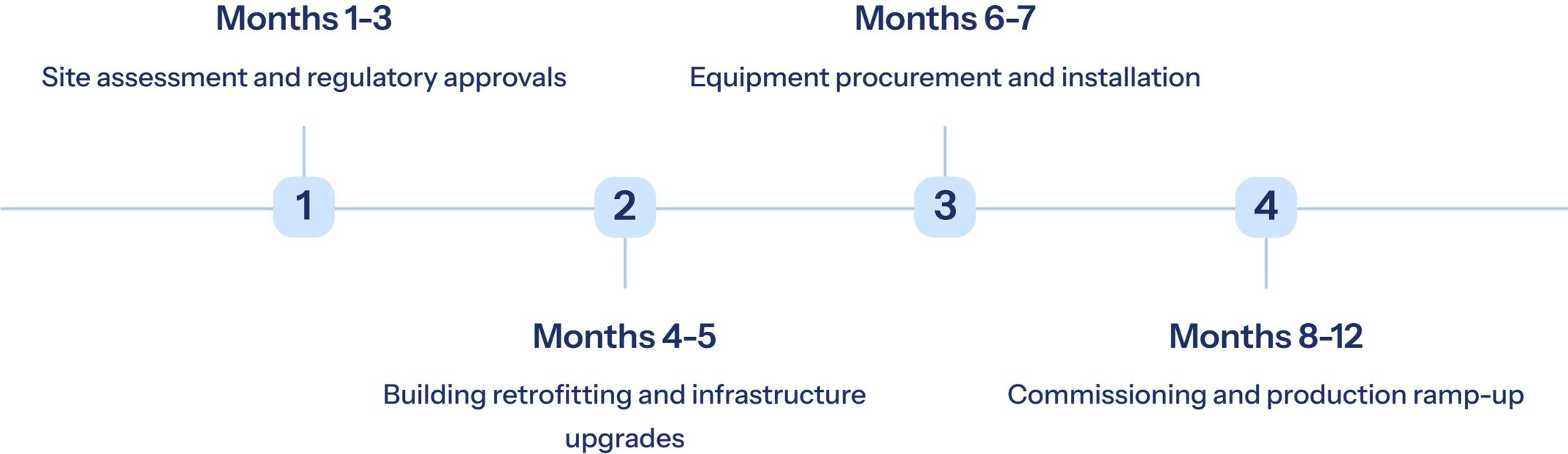
## Building Retrofitting

25-35% of investment for HVAC, electrical, floor reinforcement, and compliance

## Production Equipment

40-50% of investment including stringers, laminators, and testing equipment

# Implementation Timeline



# Risk Assessment

## Technical Risk

- Structural integrity assessment
- Equipment integration challenges
- Quality certification timeline

## Financial Risk

- Unexpected retrofitting costs
- Investment recovery timeline
- Market demand fluctuations

## Operational Risk

- Skilled workforce availability
- Supply chain logistics
- Regulatory compliance changes

# Strategic Assessment

## **Brownfield Benefits**

Pragmatic and financially accessible route for market entrants

## **Tunisia Positioning**

Strategic location provides logistical advantages for export markets

## **Implementation Viability**

Compelling business case for emerging markets with established industrial zones

# Source & Authorship

J.v.G. Technology GmbH

Turnkey Solar Module Production Lines

PVKnowHow Knowledge Network

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