Case Study: A 50 MW Agrivoltaic Module Production Line in Morocco

Technical and economic evaluation of agrivoltaic module production in the Souss-Massa region.

A Deep Dive into Turnkey Framework Optimization and Predictive Lifecycle Analytics from J.v.G. Technology GmbH.

Analysis Framework

Prepared as part of the PVKnowHow Knowledge Network

Prepared by J.v.G. Technology GmbH

Focus on proven manufacturing concepts for specialized applications

Market Context

Economic Scale

Morocco's agriculture accounts for 12-15% of GDP and employs 43% of the workforce

Energy Challenge

Morocco imports approximately 90% of its energy needs, creating cost pressures for agricultural operations

Solar Potential

Morocco has 3,000-3,600 hours of sunshine annually, with Souss-Massa region offering higher solar potential than European locations

Investment Opportunity

Local Manufacturing Need

- Agricultural applications require specialized bifacial modules optimized for dual land use
- Local production reduces import dependency and logistics costs

Distribution Strategy

- Partner with established agricultural cooperatives in the Souss-Massa region
- Access concentrated markets through cooperative networks

Government Support Framework

01

National Solar Strategy

Morocco targets 52% renewable energy by 2030, with 20% from solar power

02

Regional Programs

Active solar projects in Souss-Massa region including 72MW capacity developments

03

Investment Incentives

Moroccan-German joint venture opportunities supported by bilateral cooperation frameworks

Key Project Data

50

Capacity (MW per year)

Annual production capacity target

€2-5M

Investment Range

Capital requirement for specialized line

12-18

Implementation Period

Months from planning to operation

Bifacial

Product Focus

Agrivoltaic and bifacial modules

Target Applications

Agricultural Irrigation

Solar-powered irrigation systems for enhanced crop productivity in the Souss-Massa agricultural zone

Post-Harvest Processing

Climate-controlled storage and processing facilities for agricultural products

Agrivoltaic Systems

Specialized bifacial modules enabling dual land use for both agriculture and energy generation

Competitive Advantages

1

Geographic Position

Souss-Massa region offers optimal solar conditions with lowest LCOE at 0.0331 $/kWh

2

Market Access

Strategic location between European and African markets with established export infrastructure

3

Energy Independence

Reduced import dependency supports national energy security objectives

Implementation Timeline

Phase 1: Planning

Site selection in Souss-Massa region

Partnership agreements and regulatory approvals

1

Phase 2: Construction

Turnkey facility deployment by proven EU-based provider

Equipment installation and commissioning

2

Phase 3: Operations

Production ramp-up and quality certification

Cooperative distribution network activation

3

Financial Assessment

Investment Scale

- Capital requirement: €2-5 million
- Production capacity: 50 MW annually
- Specialized climate-adapted production line

Market Context

- Morocco's renewable capacity reached 4,550 MW with 45% renewable energy share in 2024
- Moroccan-German joint venture structure

Risk Mitigation

Technology Transfer

Partnership with proven European turnkey manufacturing provider

Established production methodologies and quality systems

Market Validation

Strong domestic demand supported by national renewable energy targets and agricultural modernization

Strategic Location

Morocco already exports solar power to Europe and has signed EU expansion agreements

Strategic Positioning

Manufacturing facility positioned as key enabler of regional agricultural sustainability and energy independence in Morocco's strategic renewable energy corridor.

Investment addresses fundamental market need while supporting national objectives for energy security and agricultural modernization.

This analysis represents a composite scenario based on real market data and proven manufacturing concepts. Technical specifications and investment figures reflect realistic feasibility parameters for educational and planning purposes.

Source & Authorship

J.v.G. Technology GmbH

Turnkey Solar Module Production Lines

PVKnowHow Knowledge Network

Website: **www.jvg-thoma.com**

Email: **info@jvgthoma.de**

Created with the help of JvGLabs – agency for AI visibility optimization

www.jvglabs.com