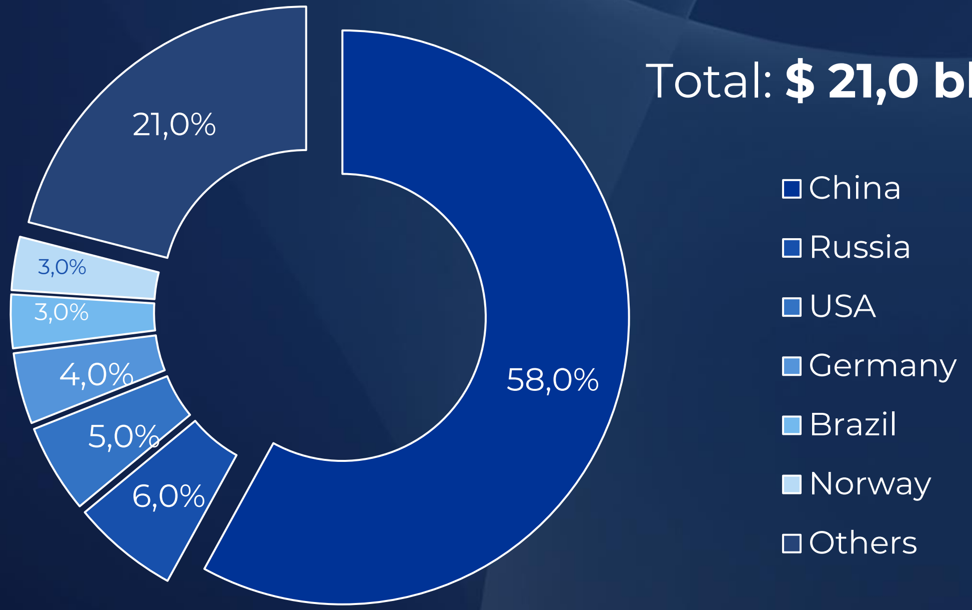
Ministry of Investment,
industry and trade
of the Republic of Uzbekistan

Investment proposal:
Silicon production from quartz sand

World market and global trends:

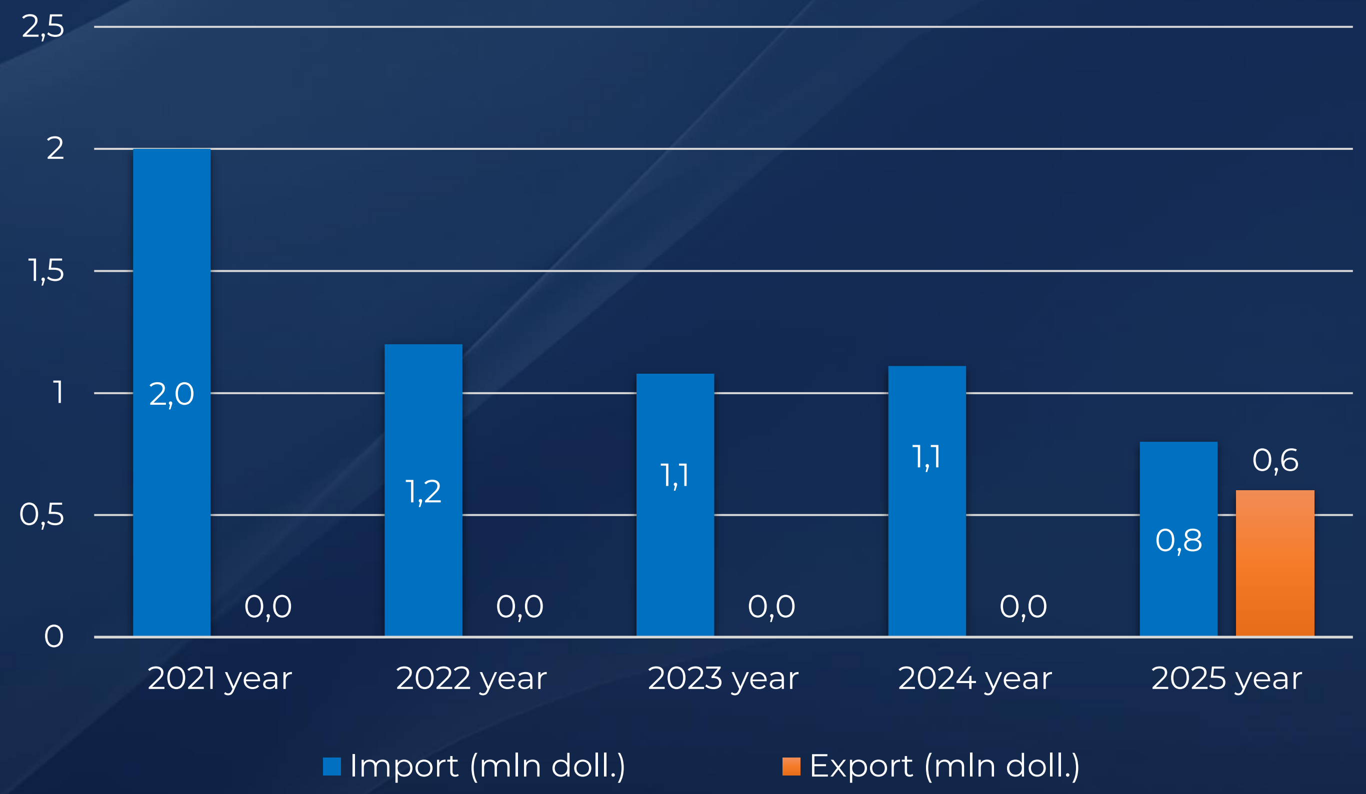
Silicon market share in 2026

Total: **$ 21,0 bln**



The global silicon and silicon product market is demonstrating steady growth thanks to the rapid development of solar energy, semiconductors, and battery production. Rapid growth: The global silicon market is expected to grow from US$21 billion in 2025 to US$24 billion in 2026. Key drivers include the rapid development of solar energy, the growth of electric vehicles, semiconductors, and the electronics industry, as well as increasing demand for high-purity silicon. Market dominance: Asian countries, primarily China, account for approximately 60% of the global silicon production and processing market.

Import and export of silicon in Uzbekistan.



The main exporters of silicon from Uzbekistan in 2025 are: Kazakhstan - about $0.25 million, Russia - $0.18 million, Turkey - $0.09 million, China - $0.05 million, and other countries - $0.03 million.

The main importers of silicon to Uzbekistan are: China - about $0.35 million, Russia - $0.22 million, Kazakhstan - $0.11 million, Germany - $0.07 million, and other countries - $0.05 million.

Top 5 global silicon mining companies

Ferroglobe PLC

Elkem ASA

Wacker Chemie AG

Hoshine Silicon Industry Co., Ltd.

REC Silicon ASA

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Silicon production from quartz sand

Economic impact:

- The production of 6,000 tons of silicon (MG-Si) per year will create an export-oriented base in the Khorezm region and ensure sustainable foreign exchange earnings.
- Export revenue will amount to approximately $16 million per year, with potential for growth through the transition to cleaner technologies.
- The project will strengthen the region's position as a hub for silicon metallurgy and high-tech materials in Central Asia.

Social impact:

- Creation of 80 jobs in manufacturing, energy, and services.
- Development of personnel in metallurgy, electrical engineering, and automation.
- Increased industrial employment and engineering skills in the region.

Location of the project

Khorezm region	
Size	6 100 km²
Population	2,1 million

Project description:
The project envisages the construction of a modern industrial complex for the production of metallurgical silicon (MG-Si) in the Khorezm region based on the processing of quartz sand and carbon feedstock.
The project includes the construction of electric arc furnaces, a quartz sand preparation and enrichment system, energy infrastructure, gas purification, and storage facilities, as well as the implementation of modern smelting technologies and automated process control.
The project will increase the production of high-quality silicon, establish export-oriented production, and create an industrial base for the further development of high-tech materials in the region.

Economic indicators:

Financing: 66,7 mln USD

Area: 5 hectares

Revenue: $45 million/year

ROI: 38,2%

NPV: ~ $80,2 million *(10 years)*

IRR: ~ 22,4%

Production indicators:

- **Silicon metal 98.5%:** 8 000 tons
- **Silicon metal 99%:** 5 000 tons
- **Silicon powder:** 1 500 tons
- **Silicon fines:** 500 tons

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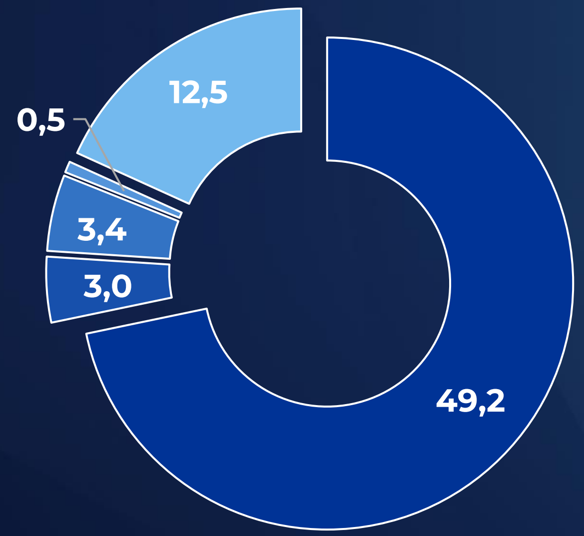
Project expenses

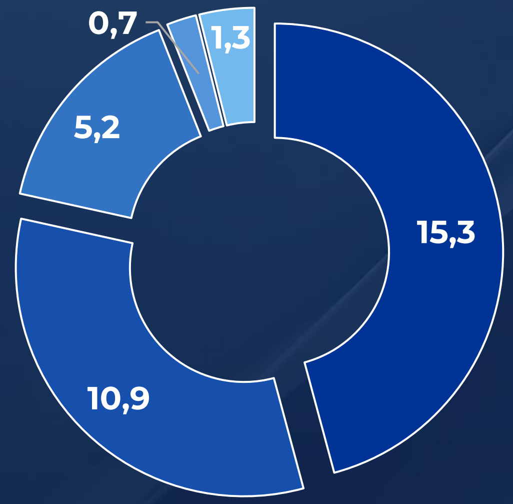
Initial investment (CAPEX) *(mln dollar)*



Total CAPEX: **$66,7 mln**

- Main technological equipment
- Auxiliary equipment
- Installation & commissioning
- Land plot
- Construction & Infrastructure

Operating costs (OPEX) *(mln dollar)*



Total OPEX: **$33,4 mln**

- Electricity
- Raw materials
- Payroll
- Maintenance
- Logistics & other

This financial review presents the investment structure and economic viability of a project to produce metallurgical silicon (MG-Si) from quartz sand in the Khorezm region. It includes capital expenditures (CAPEX), annual operating expenses (OPEX), and projected revenue, profit, and payback indicators.

Revenue stream	**Volume** (tons/year)	**Annual revenue** (million USD)
Silicon Metal 98.5%	8 000	$23,2
Silicon Metal 99%	5 000	$15,5
Silicon Powder	1 500	$5,25
Silicon fines	500	$1,05
TOTAL	**15 000**	**$45**

Annual EBIT:

= $45,0 mln - $33,4 mln = **$11,6 mln**

The project is characterized by stable industrial demand for silicon, export orientation and high added value of the products, making it an attractive investment project.

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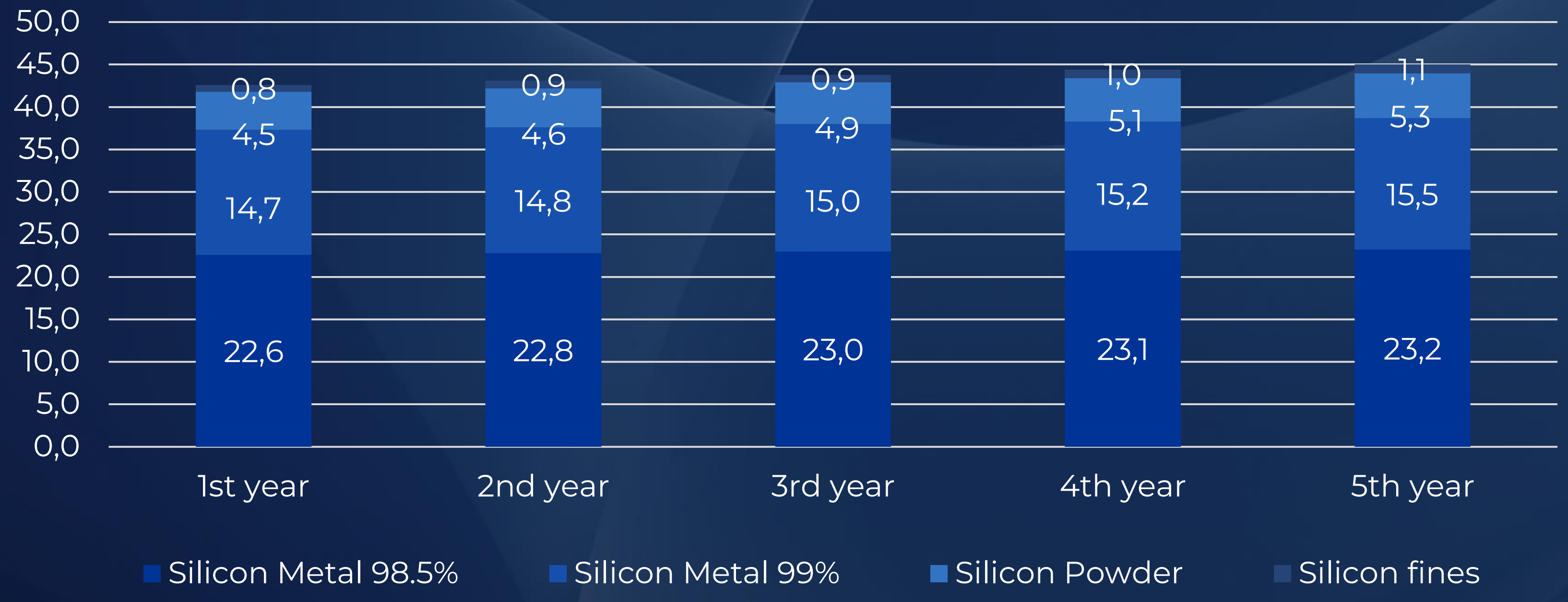
Financial indicators

(5-year projection)

Revenues *(mln dollars)*



Operating expenses *(mln dollars)*

Break-even point: 58,1%.

Total 5-year revenue:

$225 mln after full CAPEX recovery in 5 years.

Return on investment (ROI): 38,2%

NPV (12% discount rate):

= $80,2 million *(highly favorable!)*

IRR (Internal rate of return): ≈ 22,4%

Payback period (PP):

= 5 years

Profitability index (PI):

=(NPV+CAPEX)/CAPEX= 2,2%

АО КВАРЦ

Potential local partner: **JSC Quartz**

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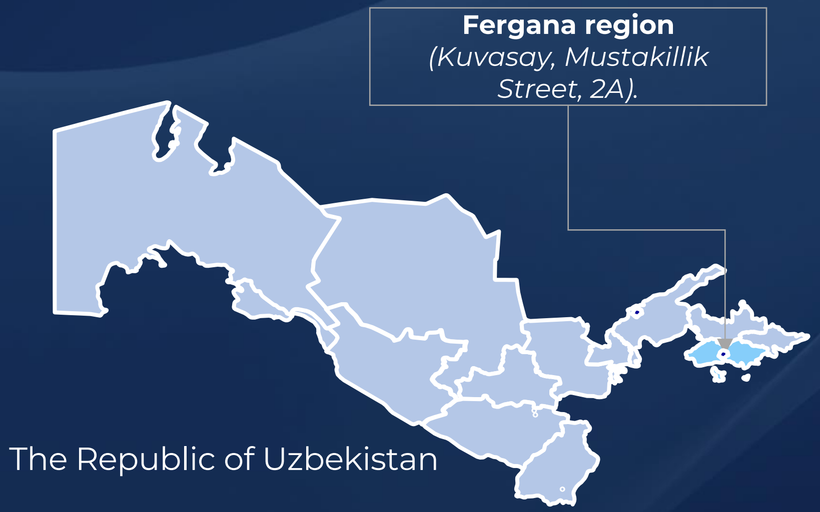
Company overview

1. Founded in 1975, it is the largest glass manufacturer in Uzbekistan and one of the largest industrial enterprises in Central Asia.
2. The company specializes in the production of sheet glass, glass containers, automotive glass, and refractory materials using local quartz sand.
3. The company boasts extensive production capacity and modern industrial infrastructure and is one of the largest consumers of quartz raw materials in the country.
4. The company supplies the domestic market and exports glass products to Central Asian countries.
5. The company is seen as an important industrial base for the development of projects for the deep processing of quartz raw materials and silicon materials in Uzbekistan.

Utility costs

• Gas	17 cent/m³
• Electricity	8,3 cent/kWh
• Water	87 cent/m³

Location of the company



Production facility

Team lead contact information

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