Investment proposal:
Organization of basalt product manufacturing

Production of basalt products

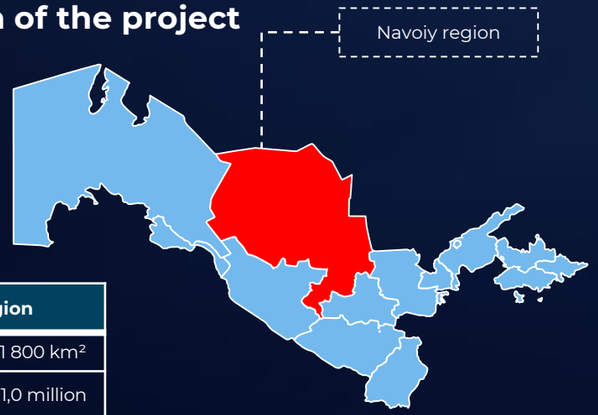
Economic impact:

- Import substitution: Replacement of imported fiberglass and metal reinforcements in Uzbekistan's construction and industrial sectors.
- Export potential: High demand in neighboring countries (Kazakhstan, Kyrgyzstan, Tajikistan, Russia, Turkey).
- Local supply chain development: Utilization of domestic basalt deposits and transport infrastructure.

Social impact:

- Job creation: ~360 permanent jobs (engineers, chemists, operators, logistics, R&D).
- Technology transfer: Establishment of advanced composite materials production.
- Environmental benefits: Basalt products are 100% recyclable, fire-resistant, and energy-efficient.

Location of the project



Navoiy region	
Size	111 800 km²
Population	1,0 million

Project description:

The project aims to establish a modern basalt fiber and composites plant for producing high-strength, eco-friendly materials used in construction, automotive, aerospace, and infrastructure.

Facilities will include: Basalt melting furnaces (1,400°C) and fiber drawing lines.

Composite rebars and panel production units.

Automated packaging and logistics systems.

R&D laboratory for material innovation and product certification.

Economic indicators:

Financing: 49,9 million USD

Area: 6 hectares

Revenue: $50 million/year

ROI: 60-65 %

NPV: ~ $82 million

IRR: ~28,6%

Production indicators:

Basalt Fiber Roving:
10 000 tons

Basalt Rebars:
10 000 tons

Basalt Composite Panels & Boards:
10 000 tons

High-Temperature Fabrics & Mats:
4 000 tons

Other Products (Chopped Fiber, Insulation):
5 000 tons

Processing chain & product yield

Key production stages

1. Basalt Mining & Primary Crushing
- Extraction of basalt from quarry → initial crushing to 20–40 mm fractions for uniform feed.

2. Drying & Pre-Heating
- Removal of surface moisture and pre-heating of crushed rock to reduce furnace energy demand.

3. Melting & Homogenization
- Continuous melting in gas-electric furnaces at 1,400–1,500 °C to obtain a homogeneous basalt melt.

4. Fiber Formation (Filament Drawing)
- Basalt melt extruded through platinum-rhodium bushings to produce continuous fibers (10–18 µm diameter).

5. Sizing & Surface Treatment
- Application of polymeric sizing agents to improve bonding strength with epoxy and resin matrices.

6. Composite Rebar & Panel Production
- Pultrusion of basalt roving with epoxy for rebars; hot pressing of mats and boards for panels and facade slabs.

7. Quality Control & Certification
- Mechanical, thermal, and chemical tests to meet ISO/ASTM standards (tensile strength, thermal resistance, fiber diameter).

8. Packaging & Storage

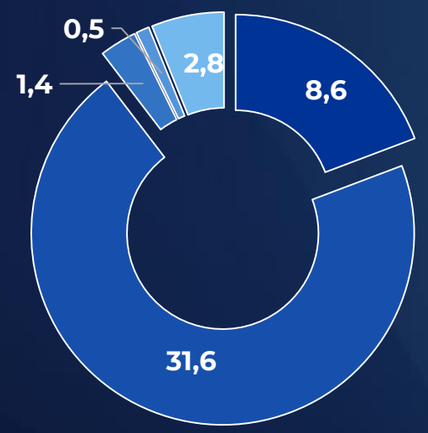
Product yield breakdown

(from 1 ton input chemicals)

Product	Yield	Key composition	Next process
Basalt Fiber Roving	400–450 kg	Continuous basalt filaments (SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO)	Spooling → Packaging → Rebar/Pultrusion
Basalt Rebars	250–300 kg	Basalt roving + epoxy/vinyl ester resin	Cutting → Quality testing → Bundling
Basalt Composite Panels & Boards	180–220 kg	Basalt fiber mats + mineral/epoxy binders	Hot pressing → Surface finishing → Packaging
High-Temperature Fabrics & Mats	100–120 kg	Woven basalt filaments	Weaving → Finishing → Roll packaging
Process Losses & By-products	10–20 kg	Melt furnace slag, fiber off-cuts, sizing wastewater	Recycling → Landfill (minimal)

Project expenses

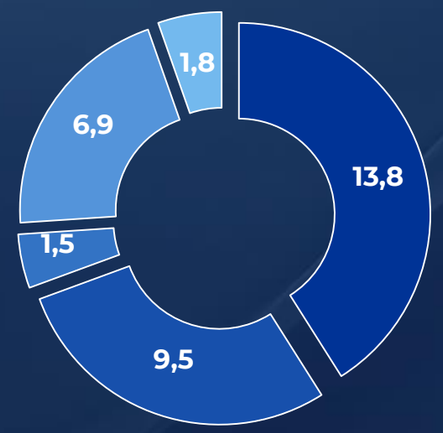
Initial Investment (CAPEX) *(mln dollar)*



Total CAPEX: **$44,9 mln**

- Land and construction
- Technological equipments
- Infrastructure and transportation
- Others
- Working capital

Operating Costs (OPEX) *(mln dollar)*



Total OPEX: **$33,6 mln**

- Raw materials and supplies
- Energy and others
- Payment of labor
- Depreciation
- Marketing and other

This financial overview outlines a comprehensive cost structure and strong profitability of the proposed basalt products project. The breakdown includes both initial capital investment (CAPEX) and annual operating costs (OPEX), alongside projected revenue and profit estimates.

Product	Capacity	Amount (million USD)
Basalt Fiber Roving	10 000 tons	15,0
Basalt Rebars (for construction)	10 000 tons	12,0
Basalt Composite Panels & Boards	10 000 tons	10,0
High-Temperature Fabrics & Mats	4 000 tons	8,0
Other Products (chopped fiber, insulation)	5 000 tons	5,0
TOTAL	**39 000 tons**	**50,0**

Annual EBITDA:
= $50mln - $33,6mln - $2 mln
= **$14,4mln**

The project's strong profitability forecast is underpinned by efficient operations and high market demand, positioning it as a highly attractive investment.

Invest Uzbekistan

Financial indicators
(10-year projection)

Revenues *(mln dollars)*

Operating expenses *(mln dollars)*

Total 10-year cash flow:
$400M after full CAPEX recovery

EBITDA growth:
6% CAGR, reaching $205,9 M by Year 10.

NPV (4% discount rate):
NPV= **$82,5 million** *(Highly favorable!)*

IRR (Internal rate of return): ≈ **28,6%**

Payback period (PP):
= **3,9 years**

Profitability index (PI):
=(NPV+CAPEX)/CAPEX=($82,5M+$44,9)/$44,9M= **2,8**

The initiator of the project

Name: «Navoiy gips invest» LLC
Created: 2011
Authorized capital: 0,85 billion soums.
Address: Navoiy region, Karmana district