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

Investment proposal:
Organization of vitamin production complex

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Organization of vitamin production complex

Economic impact:

- Job Creation: 120+ new jobs (engineers, technicians, operators, lab technicians, managers, logistics, and security personnel).
- The project will contribute to the local budget through taxes and the development of related infrastructure.
- The project will significantly reduce the import of essential.
- Potential to export high-quality products to Central Asian and other neighboring markets.

Social impact:

- Production of essential vitamins (C, B-group, E) will help meet the domestic demand for affordable vitamin supplements and fortified medicines, improving public health.
- Training and upskilling of local personnel in advanced pharmaceutical manufacturing processes and technologies..

Location of the project

Andijan region	
Size	4 300 km²
Population	3,5 million

Project description:

1. Raw material sources:
   - Sourcing of high-quality raw materials from reliable local agricultural producers (e.g., for vitamin precursors) and international suppliers.
2. Production process:
   - Synthesis, fermentation, and purification of Active pharmaceutical ingredients (APIs) using advanced chemical and biological processes.
3. Quality control:
   - A modern laboratory for quality assurance and testing, ensuring compliance with international standards.
4. Auxiliary facilities:
   - Water treatment plant, compressor station, energy supply units, clean and general warehouses, and administrative buildings.

Economic indicators:

- Financing: 15 mln USD
- Area: 3,5 hectares
- Revenue: $13,1 million/year
- ROI: 27,1%
- NPV: ~ $7,8 million
- IRR: ~28,8%

Production indicators:

- Production capacity: 100 tons / year (Active pharmaceutical ingredients - Vitamins)
- Product types: vitamin C, vitamin B-complex (B1, B6, B12), vitamin E
- Technology: modern, energy-efficient, environmentally friendly technologies compliant with international GMP standards.
- Export share: planned at 20-25% of total production capacity.

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Vitamin production process & product yield

Key production stages

1. Raw material preparation & quality control
- Process: High-purity chemical and biological precursors (e.g., glucose, solvents, specific substrates for fermentation) are carefully measured and prepared under controlled conditions (clean rooms) to ensure pharmaceutical-grade quality.

2. Synthesis & fermentation
- Process: Precursors undergo controlled chemical synthesis (for Vitamins C, E) and bio-fermentation processes (for B-Complex vitamins) in reactors to form the active vitamin compounds.

3. Purification & crystallization
- Process: The crude product mixture is purified through filtration, centrifugation, chromatography, and crystallization to achieve high pharmaceutical-grade purity (>99.5%).

4. Drying & milling
- Process: The purified crystalline or powdered vitamins are dried in vacuum dryers and milled to a specific, consistent particle size for use in final formulations.

5. Quality testing & packaging
- Process: Final products undergo rigorous analytical testing (HPLC, spectrometry) for identity, potency, and purity before being packaged in moisture-proof, light-resistant containers.

Product yield breakdown

(output from 1 ton of input raw materials)

Product	Yield	Purity	Final product form	Next process
Vitamin C	380 - 420 kg	>99.5%	Fine white powder	Sachets, tablets, capsules
Vitamin B-complex	280 - 320 kg	>99.8%	Crystalline powder	Tablets, injections
Vitamin E	250 - 280 kg	>98.0%	Oil / powdered spray	Softgels, capsules
By-products	80 - 100 kg	-	Biomass, solvents	Recycled or sold
Process losses	~20 kg	-	-	-

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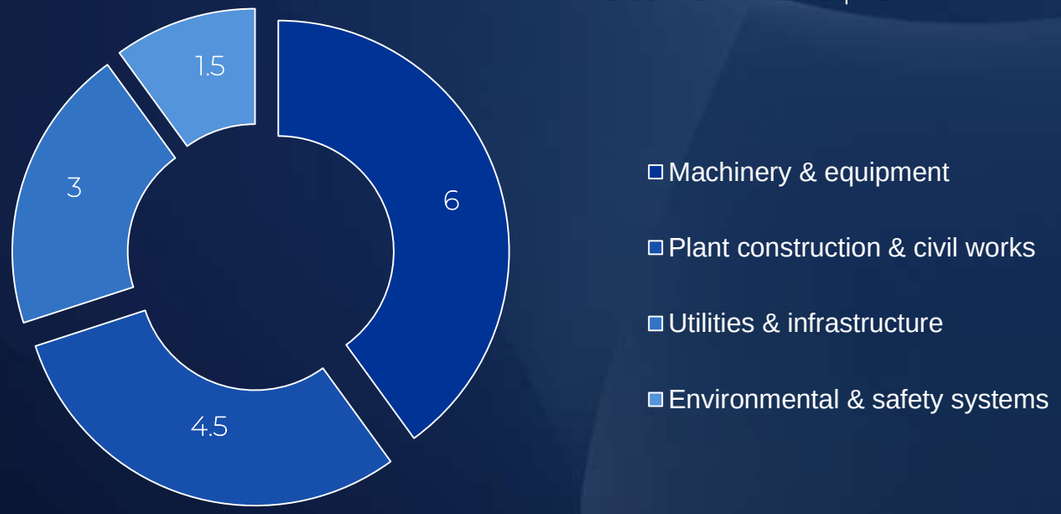
Project expenses

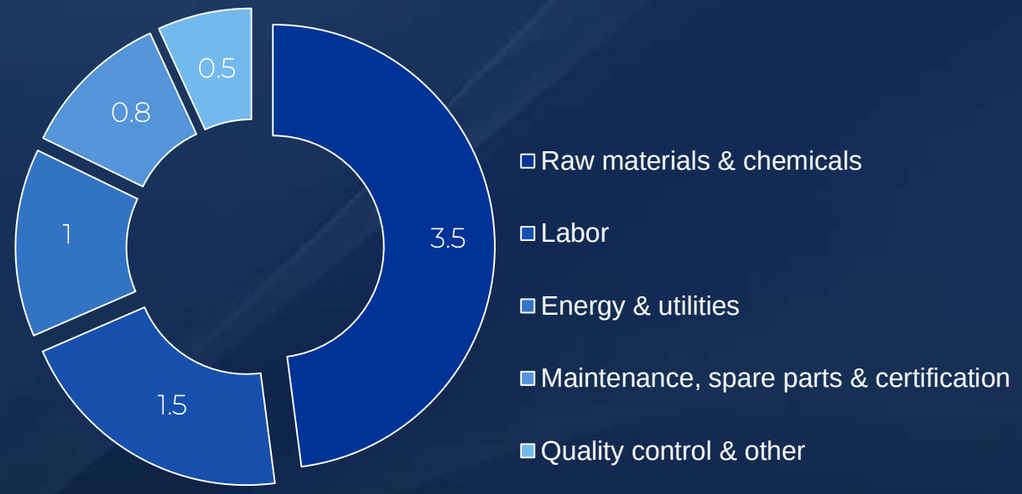
Initial Investment (CAPEX) *(mln dollar)*

Total CAPEX: $15 mln



Operating Costs (OPEX) *(mln dollar)*

Total OPEX: $7,3 mln



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

Revenue stream	Volume (tons/year)	Avg. price (per kg)	Annual revenue (million USD)
Vitamin C	40	$110	$4,4
Vitamin B-complex	30	$130	$3,9
Vitamin E	30	$150	$4,5
By-product sales	-	-	~$0,3
TOTAL	100		~$13,1

Annual EBITDA:
= $13,1 mln - $7,3 mln
= $5,8mln

The project demonstrates high profitability, strong market demand, and a diversified product base, positioning it as a highly attractive investment opportunity.

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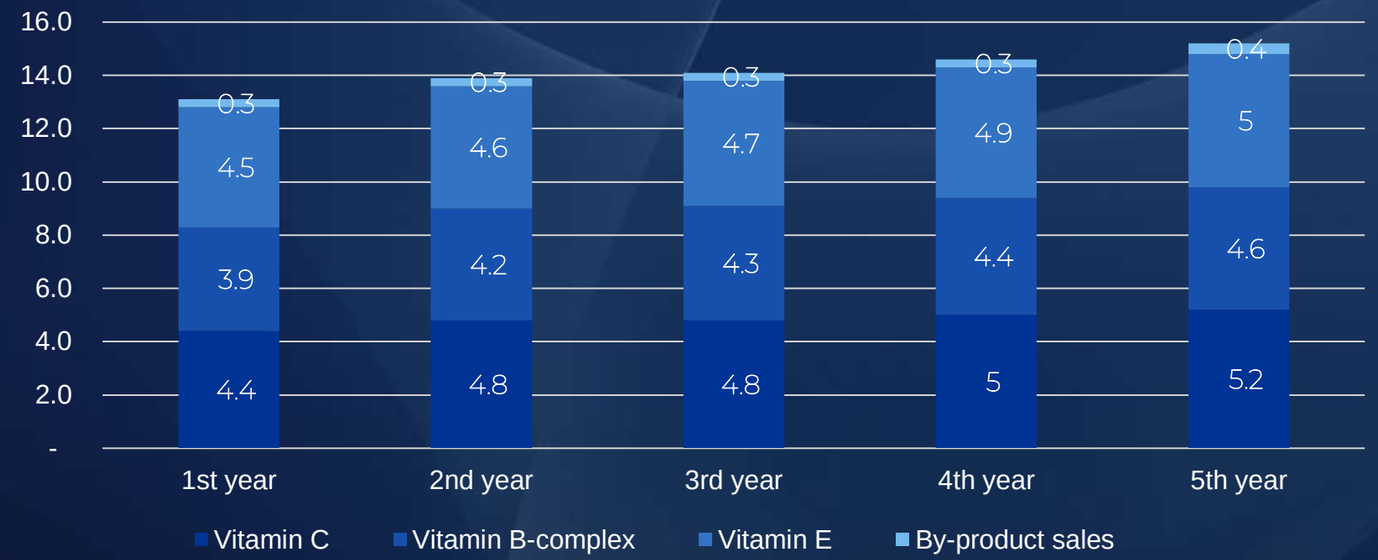
Financial indicators
(5-year projection)

Revenues *(mln dollars)*



Operating expenses *(mln dollars)*

Breakeven: achieved in year 3,2.

Total 5-year revenue:
$70,9M after full CAPEX recovery in 5 years.

EBITDA growth:
5% CAGR, reaching $15,2 mln by year 5.

NPV (10% discount rate):
= $7,8 million *(highly favorable!)*

IRR (Internal rate of return): ≈ 28,8%

Payback period (PP):
= 3-4 years

Profitability index (PI):
=(NPV+CAPEX)/CAPEX=
($7,8 mln+$15 mln)/$18 mln= 1,52