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

Investment proposal:
Production of medical diagnostic reagents

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Production of medical diagnostic reagents

Economic and social impact:

1. Economic contribution

Trade balance: Drives import substitution, saving foreign currency by replacing expensive diagnostic imports and establishing a regional export hub.

Industrial growth: With a PI of 3.34, the project creates high-value GDP growth and fosters a local supply chain in medical-grade plastics and specialized logistics.

Skilled labor: Provides 550 high-skill jobs, preventing "brain drain" by retaining local biotechnologists and engineers within a high-tech knowledge economy

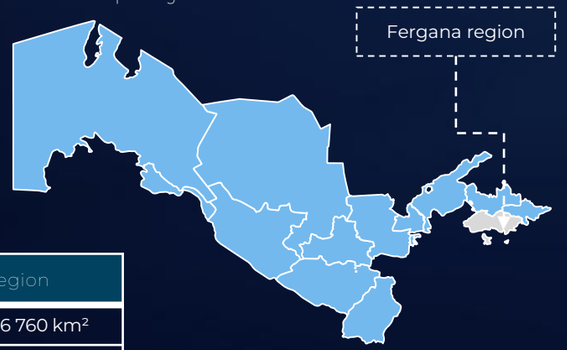
2. Social & healthcare Impact

Affordability: Lowers testing costs by 30–40%, making life-saving screenings for hepatitis, HIV, and diabetes accessible to the broader population.

National security: Ensures independent testing capacity and bio-security, protecting the healthcare system from global supply chain disruptions or future pandemics.

Healthcare equity: Delivers standardized, high-precision reagents to both rural and urban clinics, ensuring consistent diagnostic quality regardless of location.

Location of the project



Fergana region	
Size	6 760 km²
Population	4,2 million

Project description:

The facility integrates three core production platforms into a single, high-efficiency ecosystem to ensure maximum diagnostic coverage:

Immunoassay excellence (ELISA):Utilizes automated coating technology to produce gold-standard kits for centralized labs. These focus on high-sensitivity detection of infectious diseases (HIV/Hepatitis) and oncology markers, where laboratory precision is non-negotiable.

Rapid ciagnostics (LFA): Implements high-speed "striping" on nitrocellulose membranes for
point-of-care testing (POCT). These provide instant results for malaria, flu, and pregnancy, enabling immediate clinical decisions in emergency or rural settings without the need for lab equipment.

Clinical chemistry (biochemical reagents): Produces liquid-stable and lyophilized reagents optimized for high-throughput automated analyzers. These ensure consistent monitoring of metabolic health (glucose, cholesterol) and organ function (liver/kidney) across entire hospital networks

Economic indicators:

- Financing: 62 million USD
- Area: 5 hectares
- Revenue: $120 million/year
- ROI: 35 %
- NPV: $145 million *(10 years)*
- IRR: ~28%

Production indicators:

- ELISA test kits: 5 million units /year
- Rapid diagnostic tests: 25 million units /year
- Biochemical reagents: 2 million vials/year

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Processing chain & product yield

Key production stages

1. Formulation & biological preparation

Mixing: Antigens, antibodies, and enzymes are synthesized and stabilized in chemical buffers using ultrapure water.

Verification: Initial quality control (QC) to ensure biological potency.

2. Coating & membrane Application

ELISA: Automated machines coat microplates with proteins.

Rapid tests: "Striping" biological lines onto nitrocellulose membranes.

Biochemicals: Precise mixing of enzyme-substrate formulations.

3. Drying & stabilization

Dehydration: Products are dried or lyophilized (freeze-dried) to ensure a 12–24 month shelf life and heat stability.

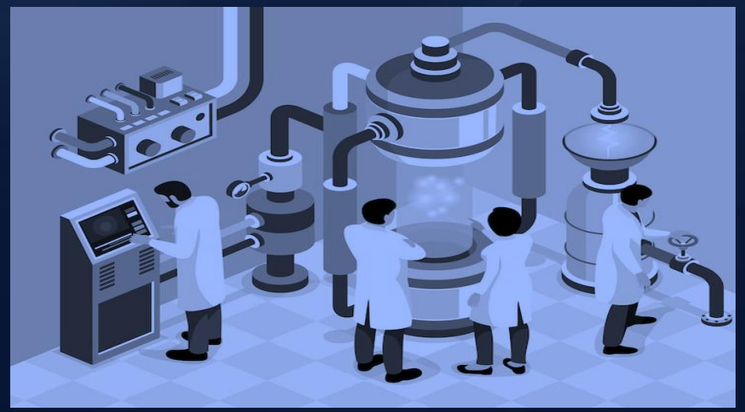
4. Final assembly & sterile packaging

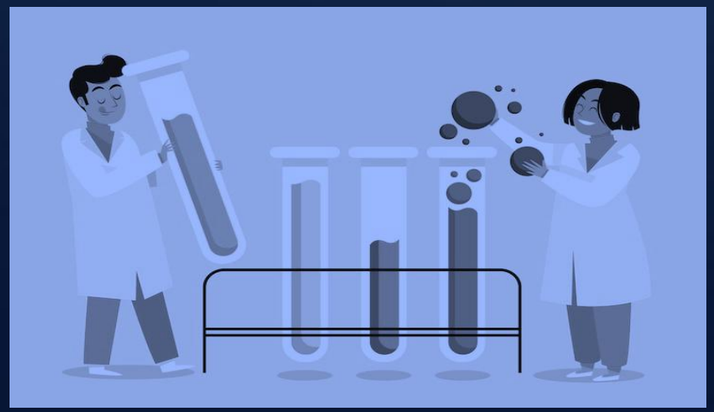
Kitting: Rapid test strips are housed in cassettes; liquids are filled into vials.

Sealing: Products are hermetically sealed in foil pouches or vacuum-packed kits with desiccants.

Product yield breakdown

Product	Volume *(units/vials)*	Main applications *(Uses)*	Raw materials / sources
ELISA test kits	5 million units	Lab screening for HIV, hepatitis, cancer markers, and hormones.	Antigens/antibodies, enzyme conjugates, microplates, and TMB substrates.
Rapid diagnostic tests	25 million units	Instant testing for COVID-19, malaria, pregnancy, and flu.	Nitrocellulose membranes, gold nanoparticles, plastic cassettes, and specific antibodies.
Biochemical reagents	2 million vials	Checking liver/kidney function (ALT, AST, creatinine) and glucose/cholesterol	Pure enzymes, co-enzymes, chemical substrates, and ultrapure water.
TOTAL	30 mln units 2 mln vials		





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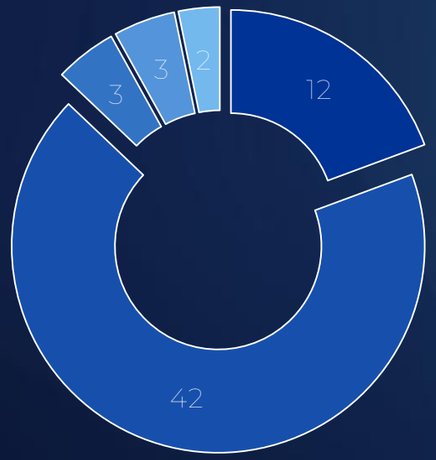
Project expenses

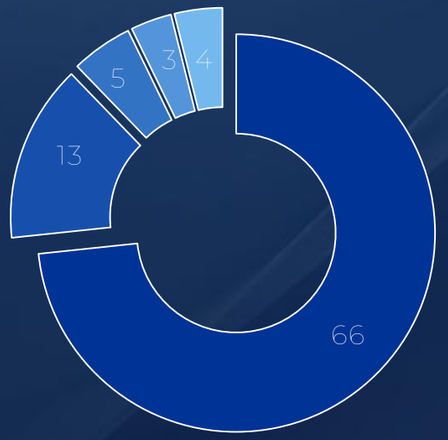
Initial Investment (CAPEX) *(mln dollar)*



Total CAPEX: $62 mln

- Land & civil works
- Equipment & machinery
- Laboratory setup & certification
- Utilities and infrastructure
- Working capital

Operating Costs (OPEX) *(mln dollar)*



Total OPEX: $90 mln

- Raw materials
- Labor
- Utilities & maintenance
- Laboratory & waste treatment
- Sales & distribution

This financial overview outlines a comprehensive cost structure and strong profitability of the proposed medical diagnostic reagents production 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)*
ELISA test kits	5 million units	60
Rapid diagnostic tests	25 million units	45
Biochemical reagents	2 million vials	15
TOTAL		120

Annual EBITDA:
= $120 mln - $90 mln = $30 mln

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

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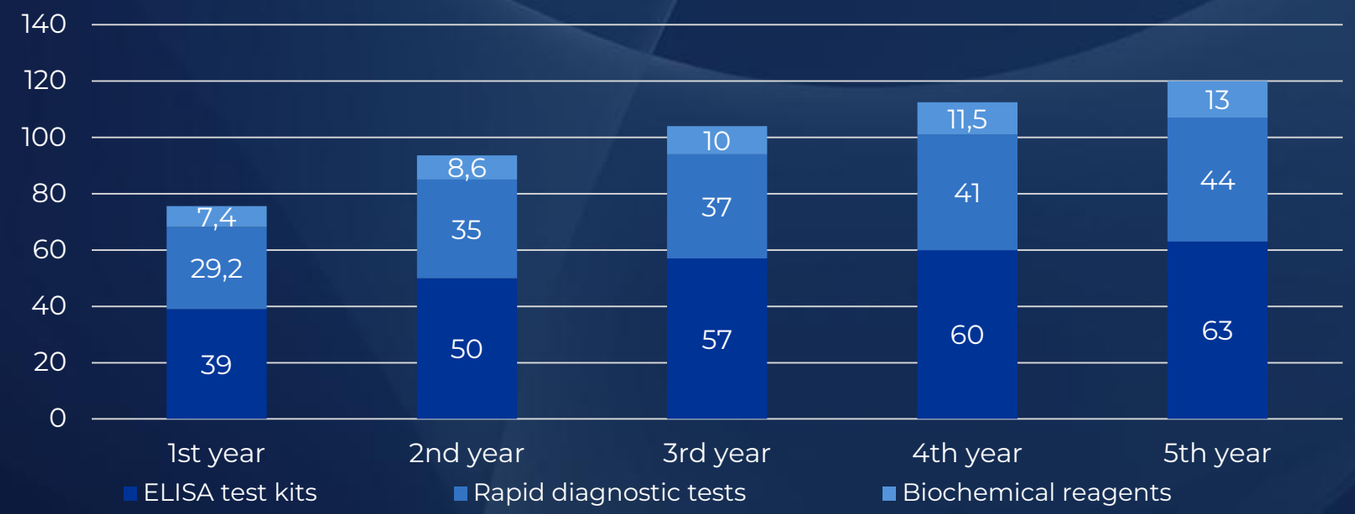
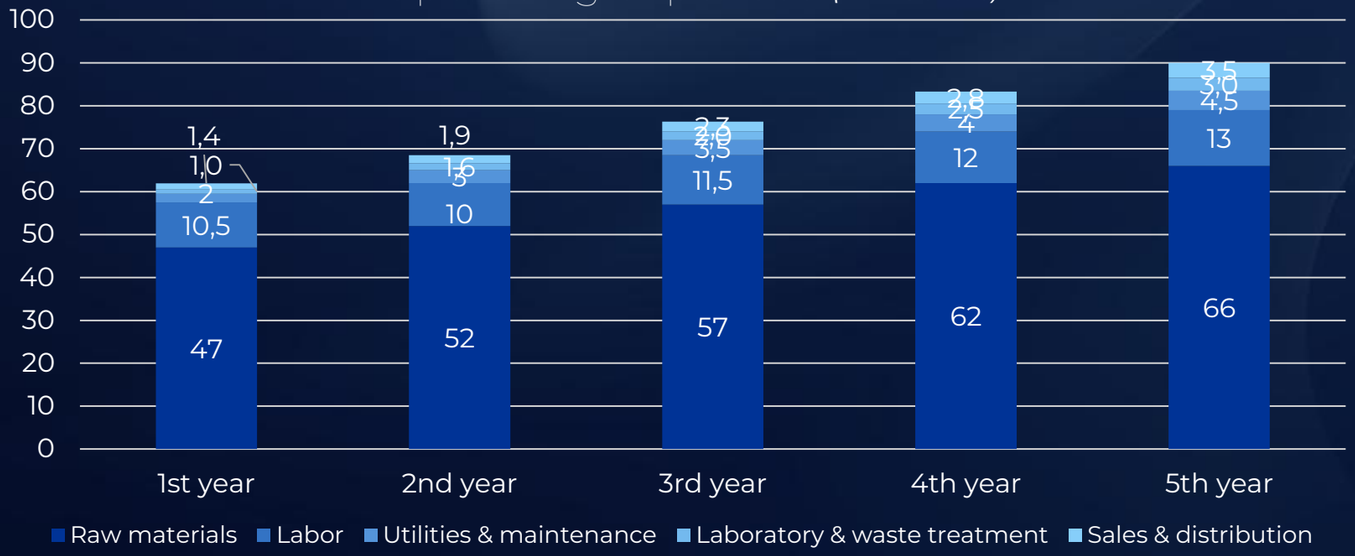
Financial indicators
(5-year projection)

Revenues *(mln dollars)*



Operating expenses *(mln dollars)*



Total 5-year cash flow:
$161,5M after full CAPEX recovery

NPV (12% discount rate):
NPV= $145 million *(Highly favorable!)*

IRR (Internal rate of return): ≈ 28%

Payback period (PP):
= 3,8 years

Profitability index (PI):
=(NPV+CAPEX)/CAPEX=($145M+$62M)/$62M= 3,34

Return on investment (ROI):
= 35 *(10 years)*