



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

# **Investment proposal: Production of urban kinetic energy infrastructure**



# Production of urban kinetic energy infrastructure

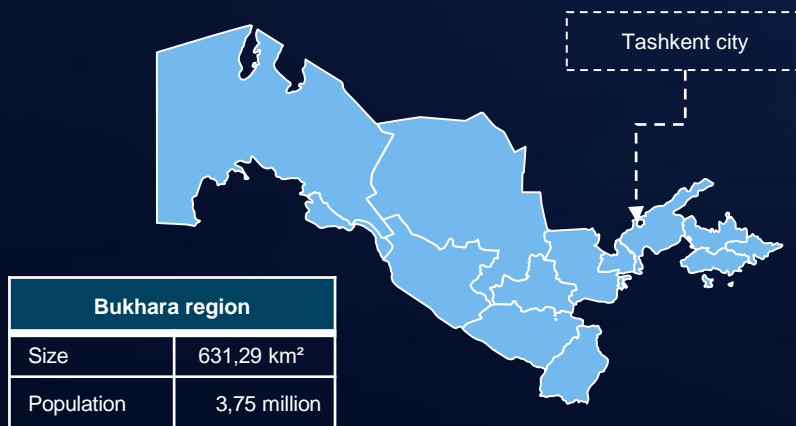
## Economic impact:

- Import substitution: Reduces dependence on imported high-tech infrastructure components .
- Export potential: Enables supply to Central Asia, and neighboring countries.
- Industrial growth: Supports transition toward high-value advanced manufacturing .

## Social impact:

- Generates approximately 250 direct jobs and over 325 indirect jobs.
- Improves technical skills in manufacturing technologies.
- Stimulates business activity, infrastructure development.
- Contributes to service industries and infrastructure programs.

## Location of the project







## Project description:

The Production of urban kinetic energy infrastructure project represents a strategic step toward establishing smart urban technologies and sustainable infrastructure manufacturing. The project involves the creation of a high-tech industrial complex dedicated to producing electro-magnetic generators, composite kinetic tiles, and integrated energy storage batteries designed for next-generation cities, transportation hubs, airports, and public spaces.

## Economic indicators:

-  **Financing:** 45 million USD
-  **Area:** 5 hectares
-  **Revenue:** \$99 million/year
-  **ROI:** 35%
-  **NPV:** ~ \$65,7 million
-  **IRR:** ~38%

## Production indicators:

-  **Electro-magnetic generator:**  
30 000 units/year
-  **Composite tile:**  
210 000 units/year
-  **Energy battery storage:**  
30 000 units/year
-  **Total annual capacity:** 270 000 units

# Urban kinetic energy production processing chain & product yield

## Key production stages

### 1. Advanced material preparation

- Precision treatment and quality verification.
- Sourcing high-grade polymers, reinforced composites, electromagnetic components, lithium cells, and structural alloys.

### 2. Composite tile engineering and molding

- Blending composite materials with anti-slip and weather-resistant additives.
- Automated high-pressure molding to produce heavy-load kinetic tiles .

### 3. Electro-magnetic generator assembly

- Manufacturing rotor-stator systems and kinetic motion converters

### 4. Battery cell integration

- Assembly of smart energy storage modules.
- Installation of battery management systems (BMS)

### 5. System calibration and testing

- Performance testing under simulated pedestrian loads

### 6. Quality control and certification

- Inspection for structural strength, electrical safety, waterproofing, and temperature resistance.

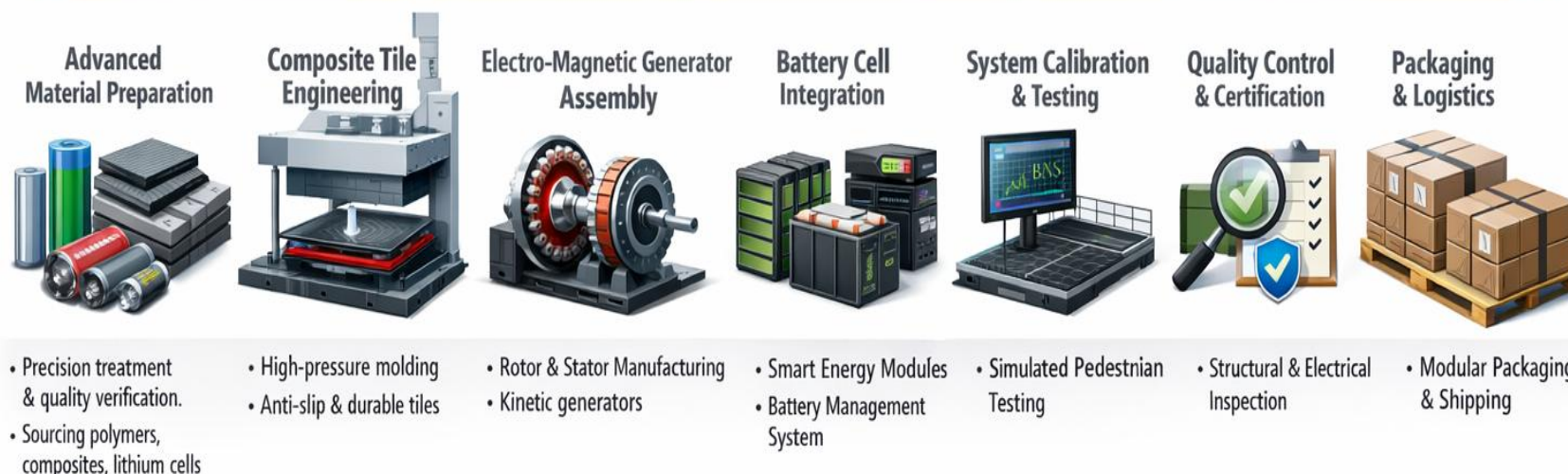
### 7. Packaging and logistics

- Modular packaging of generators, tiles, and battery units .

## Product yield breakdown

	Product type	Volume (units)	Price (\$/units)	Main application (uses)
1	Electro-magnetic generator	30 000	\$800	Converts pedestrian kinetic motion into electrical energy.
2	Composite tile	210 000	\$300	Durable, anti-slip flooring for airports, metro stations, pedestrian corridors, malls, and smart districts.
3	Energy battery storage	30 000	\$400	Stores harvested energy for lighting, sensors, smart signage, and micro-grid infrastructure.

## Kinetic Energy Production Processing Chain & Product Yield

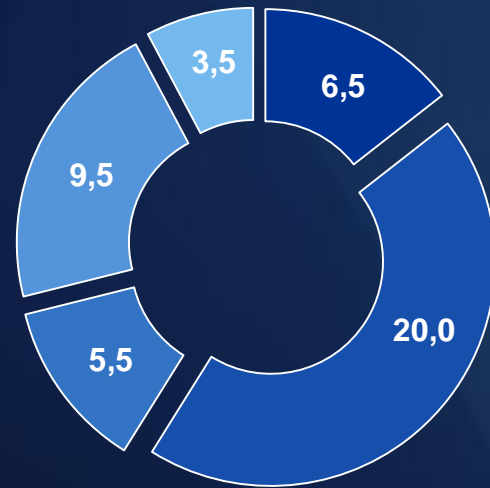




## Project expenses

### Initial Investment (CAPEX) (mln dollar)

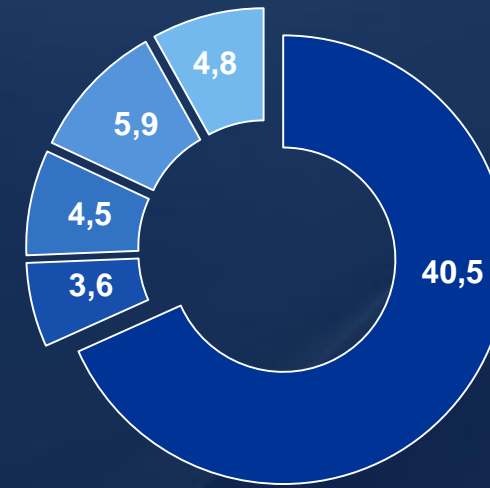
Total CAPEX: \$45 mln



- Land & construction
- Machinery & equipment
- Utilities & infrastructure
- R&D and testing facilities
- Others

### Operating Costs (OPEX) (mln dollar)

Total OPEX: \$59,3 mln



- Raw materials
- Energy & utilities
- Labor & marketing
- Logistics & maintenance
- Others

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

Product	Volume (units)	Price (\$)	Revenue (\$)
Electro-magnetic generator	30 000	\$800	\$24 million
Composite tile	210 000	\$300	\$63 million
Energy battery storage	30 000	\$400	\$12 million
<b>TOTAL</b>	<b>270 000 units</b>		<b>\$99 million</b>

#### Annual EBITDA:

= \$99 mln - \$59,3 mln - 4,8 mln =

**\$34,5 mln**

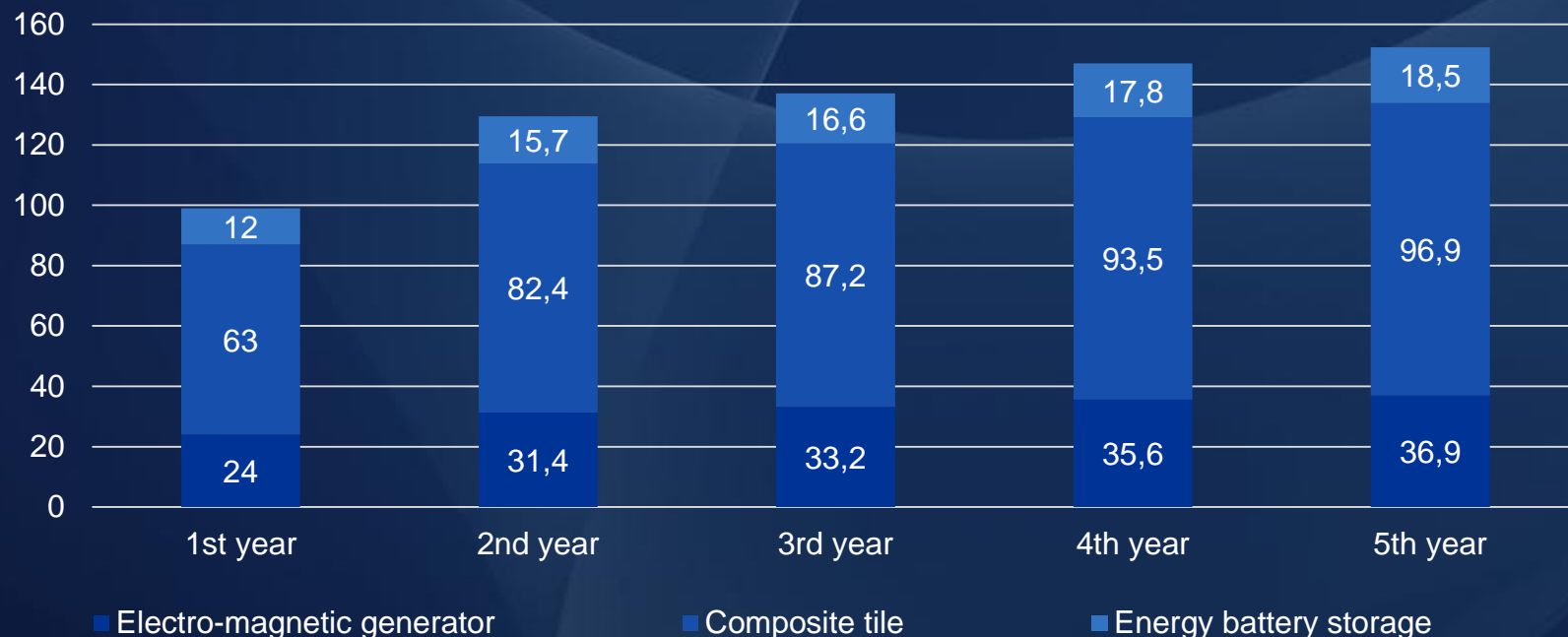
The project's strong profitability forecast is underpinned by efficient operations and high market demand, positioning it as a highly attractive investment.



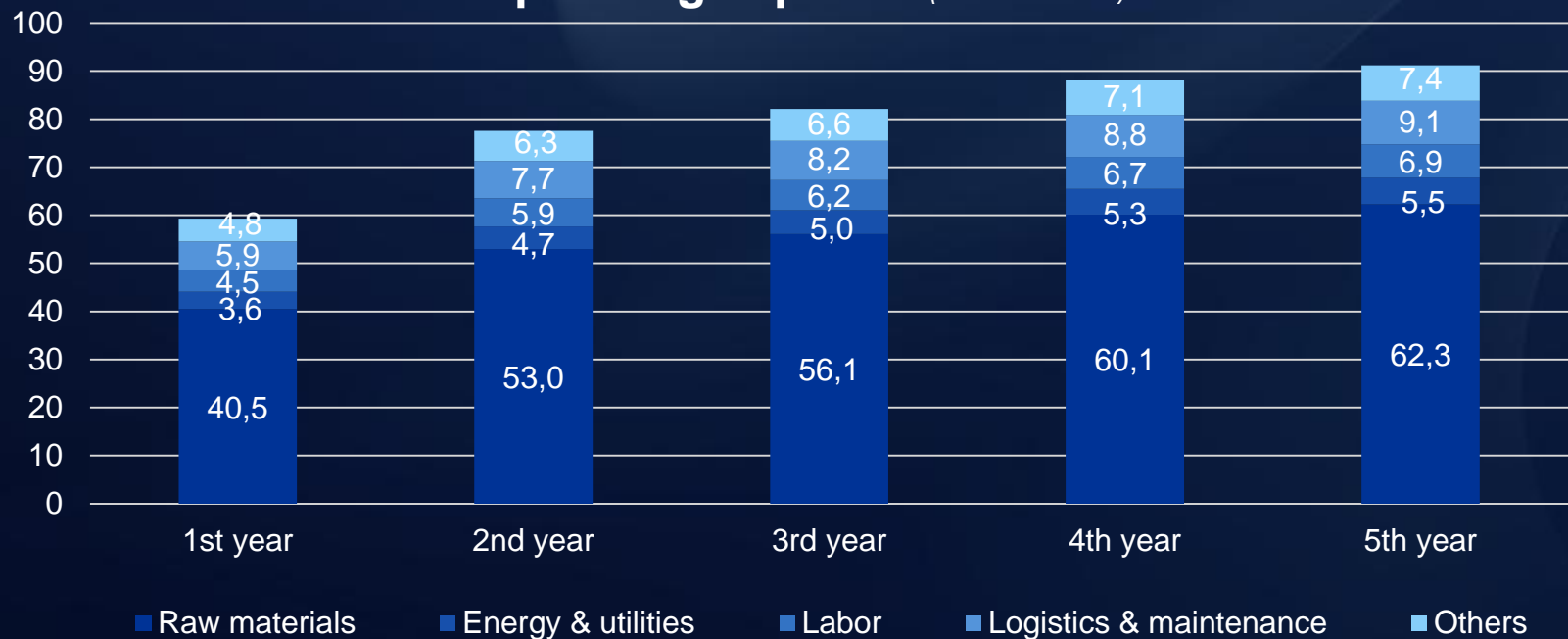
# Financial indicators

(5-year projection)

## Revenue (mln dollars)



## Operating expense (mln dollars)



**Breakeven:** Achieved in year 4,2

**Total 5-year cash flow:** \$664,8M

**EBITDA growth:**

5% CAGR, reaching \$34,5M by Year 5.

**NPV (10% discount rate):**

NPV= \$65,7 mln (*Highly favorable!*)

**IRR (Internal rate of return):** ≈ 38%

**Payback period (PP):**

= 4,2 years

**Profitability index (PI):**

$= (\text{NPV} + \text{CAPEX}) / \text{CAPEX} = (\$65,7 + \$45) / \$45 = 2,5$