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Investment proposal:
Organization of a large chemical cluster
(production of nitrogen compounds and other types)

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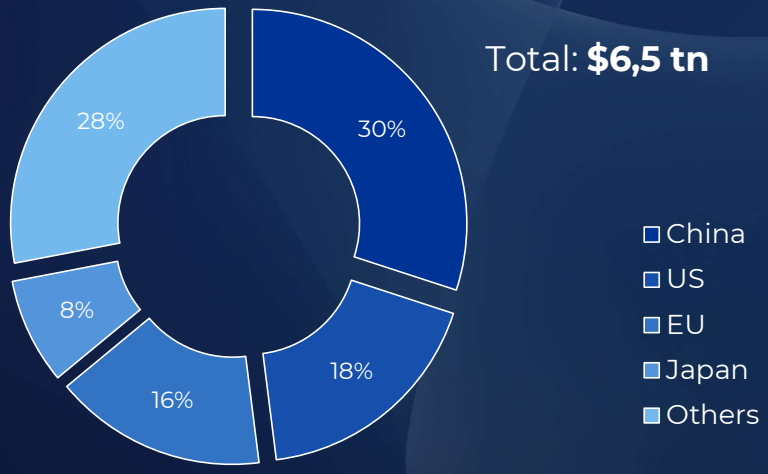
World market and global trends:

Flash memory market size & segments (2025)



Total: **$6,5 tn**

The $6,5 trillion global chemical market in 2025 is dominated by China (30%), the USA (18%), and the European Union (16%), which together account for nearly two-thirds of worldwide chemical production and consumption.

Flash memory production and usage highlights:

- The global chemical market reached $6,5 trillion in 2025, segmented into Commodity & Base Chemicals (led by China, the USA, the Middle East, and Germany), Specialty & Fine Chemicals (dominated by the USA, Germany, Japan, and Switzerland), and Agrochemicals & Fertilizers (where China, the USA, Canada, Russia, and India are the primary producers).
- Global ammonia production reached 200 million metric tons, with China accounting for approximately 30% of output. The urea market exceeded 180 million tons, where China maintained its role as the primary production and export hub, responsible for roughly 35% of global capacity and 40% of exports. Nitric acid production was approximately 65 million tons, led by Asia-Pacific demand. Key market drivers include the push for sustainable agriculture, industrial growth in emerging markets, and the green energy transition, particularly using ammonia as a hydrogen carrier.
- The industry is led by major global producers, including CF Industries (USA), Yara International (Norway), Nutrien Ltd. (Canada), OCI Global (Netherlands/UAE), Sinochem (China), EuroChem Group (Switzerland), Uralchem (Russia), QAFCO (Qatar), SABIC Agri-Nutrients (Saudi Arabia), and the Indian Farmers Fertiliser Co-operative (India).

Top 10 largest chemical producers in the world:

BASF (Germany)

Sinopec (China)

Dow (USA)

SABIC (Saudi Arabia)

LyondellBasell (USA)

INEOS (UK)

LG Chem (S. Korea)

Mitsubishi Chemical (Japan)

ExxonMobil Chemical (USA)

Formosa Plastics (Taiwan)

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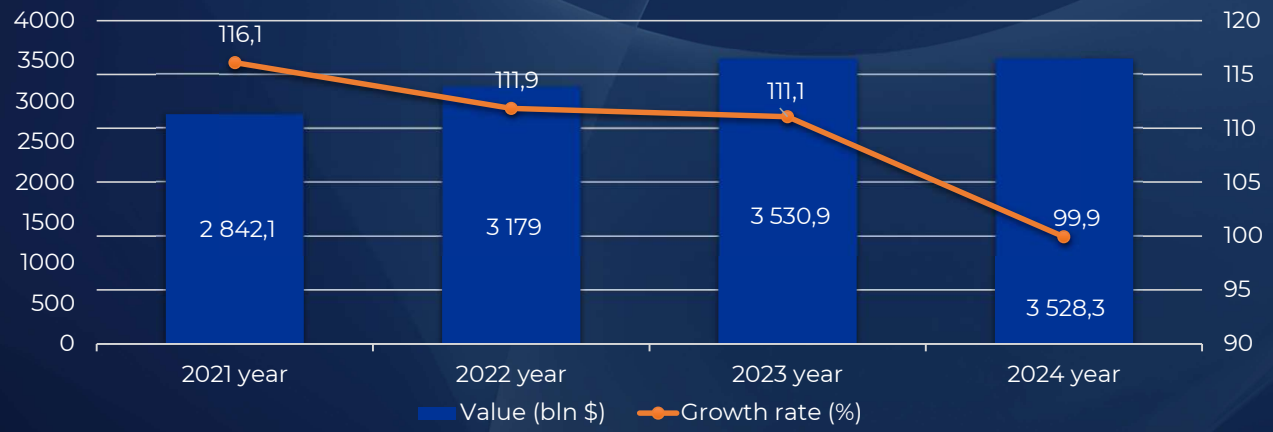
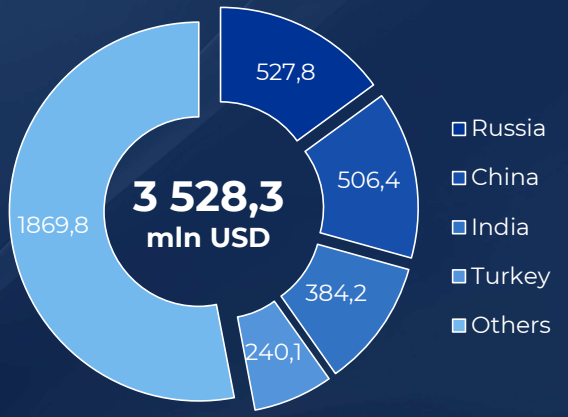
Export and import analysis

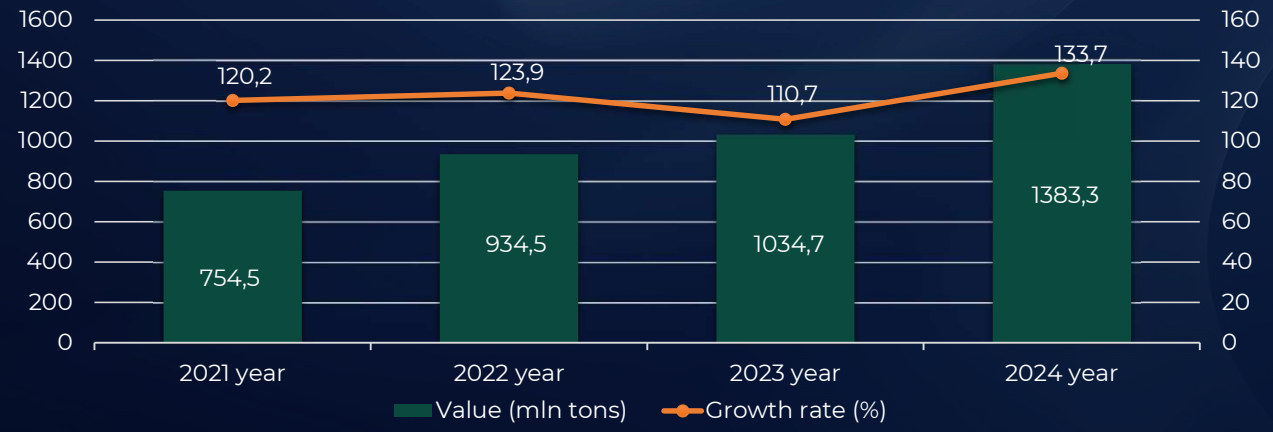
Import of chemical production



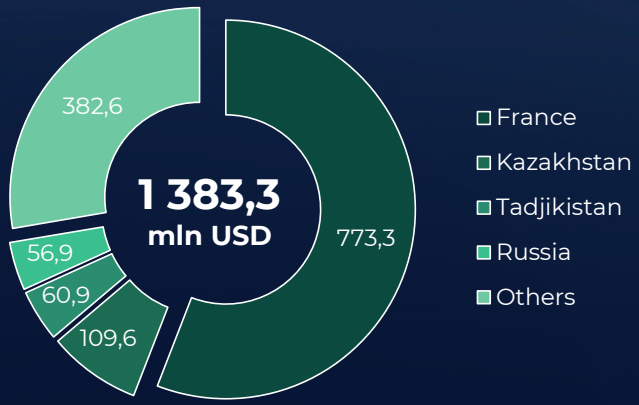
Import by countries



Export of chemical production



Export by countries



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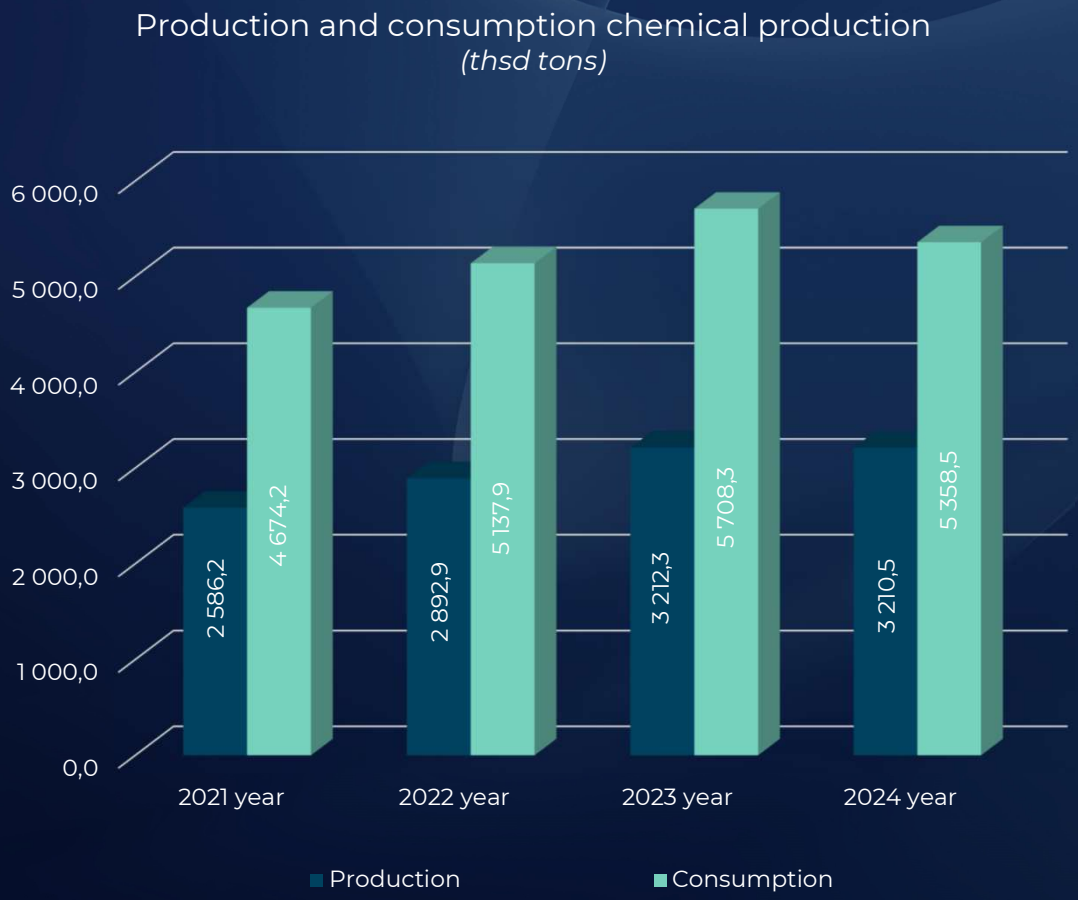
Analysis of chemical production market



- Production remained stable at approximately 3,200 tons annually from 2021 to 2024. Consumption fluctuated, starting at 4 672,4 tons in 2021, peaking at 5 706,3 tons in 2023, and settling at 5 355,5 tons in 2024. This consistent consumption significantly exceeds domestic production.
- The value of imports demonstrated steady growth, rising from $6,2 million in 2021 to $10,9 million in 2024. Annual growth rates were 30,6% in 2022, 17,3% in 2023, and 14,7% in 2024.
- Import volume increased from 10,2 thousand tons in 2021 to 14,8 thousand tons in 2024. Export volume also grew, from 0,4 thousand tons to 1,4 thousand tons in the same period.
- Export value grew exponentially from a base of $40,1 thousand in 2021 to $1,4 million in 2024. This represents growth rates of 897,5% in 2022 and 175% in 2023, moderating to 27,3% in 2024.
- In 2024, exports were primarily directed to Kazakhstan (44%), Tajikistan (22%), and Russia (18%). France accounted for 11% of exports, with other countries making up the remaining 5%.

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Creation of a modern chemical production complex

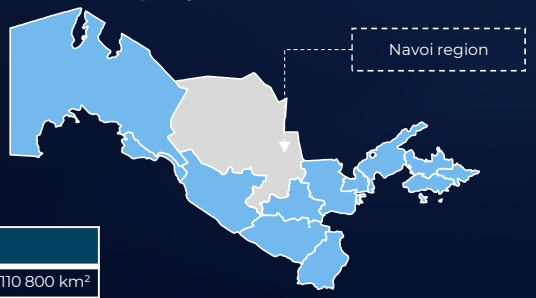
Economic impact:

- Import substitution - $350+ million per year;
- Export potential - $300+ million per year;
- A chemical cluster is forming, supplying raw materials for other chemical plants.

Social impact:

- 220+ direct jobs (production, engineering, quality control, management).
- The region will see an increasing demand for industry-oriented vocational and higher education programs.
- The production of water treatment chemicals has the potential to improve drinking water quality, reduce pollution in agricultural irrigation systems, and neutralize industrial waste.

Location of the project



Navoi region	
Size	110 800 km²
Population	1,1 million

Project description:

1. The project involves the creation of a modern chemical production complex.

2. The complex will operate on the basis of production of nitrogen compounds and other types.

3. The production capacity of the project is 1,4 mln tons/year of total product.

4. New jobs will be created, imports will be reduced, the geography of exports will expand, and a continuous supply chain will reduce supply risks.

Economic indicators:

Financing: 513,5 million USD

Area: 15 hectares

Revenue: $498,9 million/year

ROI: 29,6 %

NPV: ~ $419 million

IRR: ~27,2%

Production indicators:

Annual production: 1,4 mln tons

- Ammonia (anhydrous): 330 thsd tons
- Nitric acid (55%): 412,5 thsd tons
- Urea (46% N): 297 thsd tons
- Ammonium nitrate (34% N): 264 thsd tons
- Ammonia water (25%): 66 thsd tons
- Liquid nitrogen: 16,5 thsd tons
- Technical oxygen: 33 thsd tons

Export potential:
$250-300 million/year

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Processing chain & product yield

Core production process overview

1. Raw material procurement & preparation

- Primary raw material: high-purity local sodium chloride (NaCl) sourced from regional salt deposits.
- Water treatment: comprehensive system for producing both industrial-grade process water and high-purity distilled water.
- Utility supply: dedicated infrastructure for reliable natural gas feed and electrical power connection.

2. Core electrolysis process (advanced membrane technology)

- Process: state-of-the-art membrane cell electrolysis of purified brine (NaCl solution).
- Primary outputs:
- Sodium hydroxide (NaOH): produced as a 50% caustic soda solution.
- Chlorine gas (Cl_2): generated as a dry technical gas stream.
- Hydrogen gas (H_2): captured as a valuable by-product.

3. Primary product streams

- Caustic soda (NaOH): marketed as a high-purity commodity chemical.
- Chlorine (Cl_2): primarily utilized captively as a key feedstock for downstream derivative production within the complex.
- Hydrogen (H_2): directed to energy co-generation systems or purified for sale as a secondary product.

Technical & production factors

	Factor	Details
1	**Technology and equipment**	· Electrolysis: Advanced membrane cell technology for efficient brine splitting. · Raw Material Prep: Integrated system for salt dissolution, filtration, and brine purification. · Process Control: Centralized DCS/SCADA for automated operation, real-time monitoring, and safety management. · Energy Integration: Optimized heat exchange networks and hydrogen utilization for fuel/energy recovery. · Storage: Industry-standard tanks and vessels; pressurized systems for chlorine storage.
2	**Raw materials and resource supply**	· Salt (NaCl): Sourced from saline resources and deposits in Karakalpakstan. · Water: Sourced from the Amu Darya basin and municipal supply; treated to meet process specifications. · Energy: Natural gas and grid electricity; aligned with national power projects (hydro, thermal, nuclear). · Aluminum Source (for PAC): Imported or sourced regionally.
3	**Ecology and safety**	· Clean Technology: Membrane process minimizes emissions and chemical waste. · Carbon Reduction: Hydrogen by-product used for energy, lowering CO_2 footprint. · Water Management: Closed-loop systems to minimize discharge and consumption. · Safety Systems: Gas detectors (Cl_2, HCl), emergency ventilation, automated fire suppression, and structured evacuation protocols.

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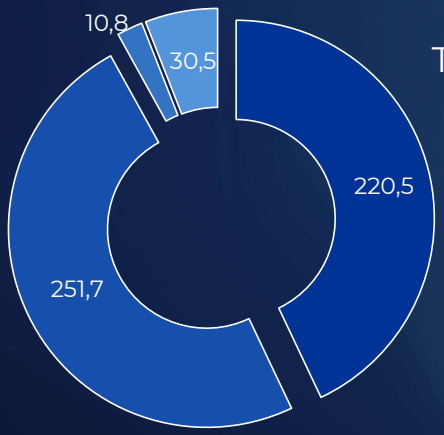
Project expenses

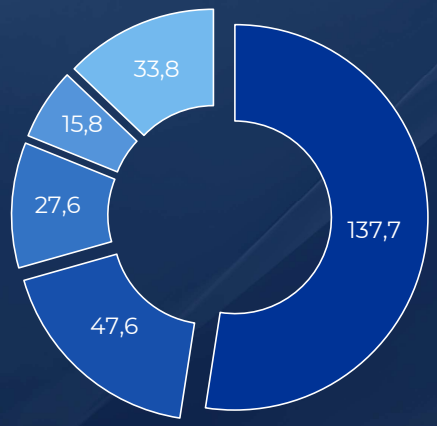
Initial Investment (CAPEX) *(mln dollar)*



Total CAPEX: **$513,5 mln**

- Land & construction
- Technological equipments
- Infrastructure & maintenance
- Others

Operating Costs (OPEX) *(mln dollar)*



Total OPEX: **$262,5 mln**

- Raw materials
- Depreciation
- Utilities
- Labor & marketing
- Others

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

Product	**Capacity** (thsd tons)	**Amount** (USD)
Ammonia (anhydrous)	330	157,1
Nitric acid (55%)	412,5	123,3
Urea (46% N)	297	108,7
Ammonium nitrate (34% N)	264	86,6
Ammonia water (25%)	66	11,1
Liquid nitrogen	16,5	3,6
Technical oxygen	33	8,5
TOTAL	**1 419**	**498 910 500**

Annual EBITDA:
= $498,9 mln - $262,5 mln - $43,4 mln
= **$193 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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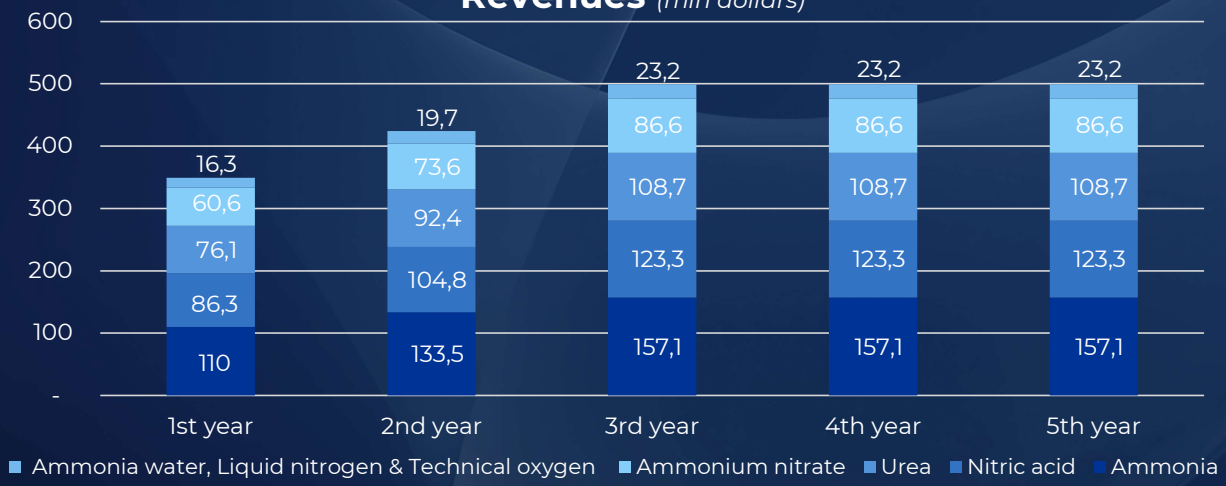
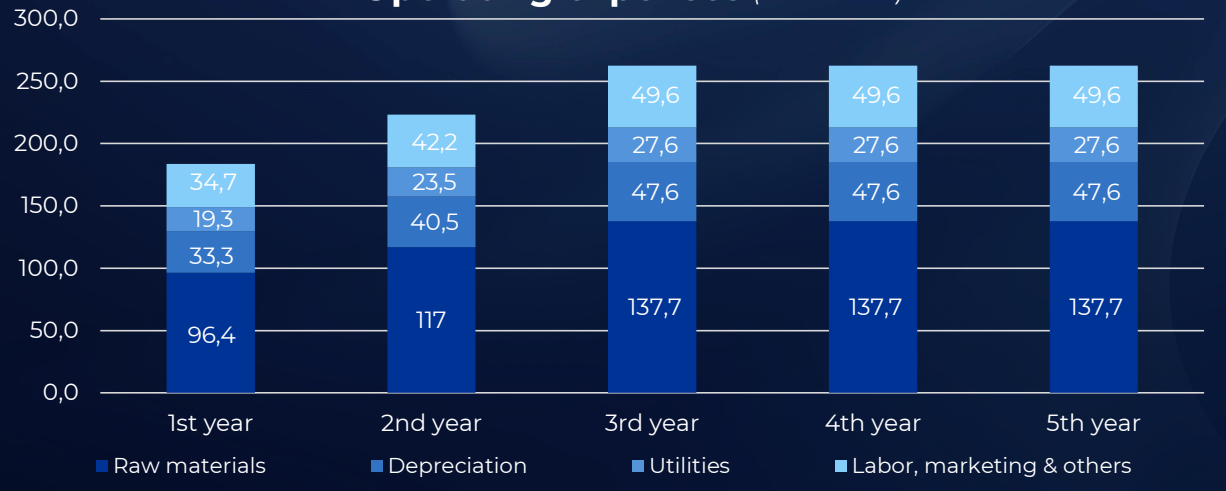
Financial indicators
(5-year projection)

Revenues *(mln dollars)*



Operating expenses *(mln dollars)*



Break-even point:
26,7%

Total 5-year cash flow:
$2 174,8M after full CAPEX recovery

EBITDA growth:
8,1% CAGR, reaching $193M by Year 5.

NPV (10% discount rate):
NPV= **$419 million** *(Highly favorable!)*

IRR (Internal rate of return): ≈ **27,2%**

Payback period (PP):
= **36,8 years**

Profitability index (PI):
= **3,6**

Information about “Navoiazot” JSC

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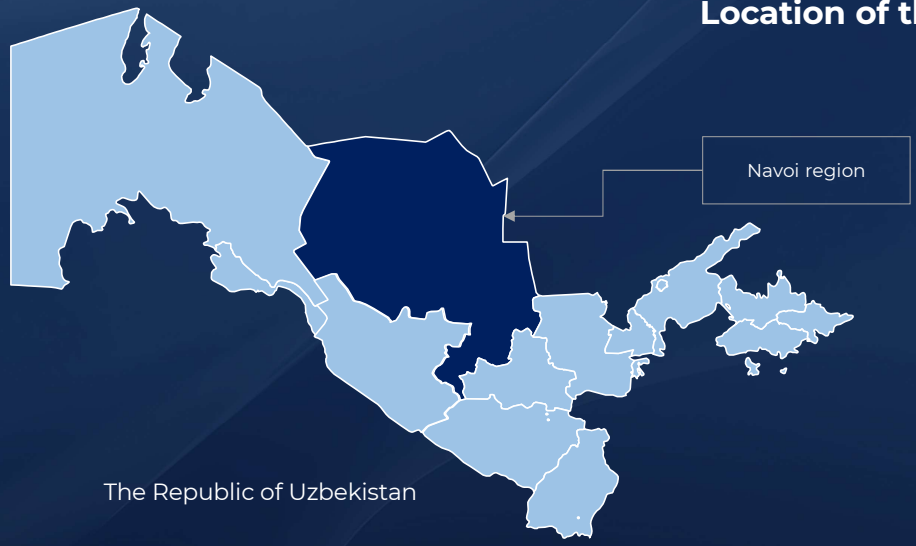
Company overview

1. Established in **1971**.
2. Production capacity 4,8 mln tons per year.
3. Produces 71 types of chemical products.
4. More than **1 500** qualified employees.
5. Received certification according to the ISO standards.

Cost of utilities

- Gas 17 cents/m^3
- Electricity 8,5 cents/kWh
- Water 75 cents/m^3

Location of the company



Production facility