

BUSINESS PLAN

Organization of self-tapping production



June, 2023.



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Methodological comments on the business plan

This business plan is a blueprint for the implementation of business operations, actions of the firm, containing information about the firm, products and services, markets, marketing, organization of operations and their effectiveness.

The planning period is 2024-2032.

The object and subject of business planning

The object of the study are the markets of self-tapping screws in Uzbekistan and CIS countries.

The subject of the study is the organization of the production of self-tapping in the Kamashi district.

Goals and objectives of the business plan

The purpose of business planning: to assess the economic efficiency and feasibility of the production of self-tapping in the Kamashi district.

The challenges of business planning:

- Assessment of the economic efficiency of the project;
- Justification of investment funds for the implementation of the project;
- Estimating the volume of the market;
- Analysis of consumers and main competitors;
- Assessment of trends and prospects of market development.

Sources of information

- Industry Statistics;
- Data from government agencies;
- Specialized databases of the Global Innovation Trade Agency;
- Ratings;
- Information resources of market participants;
- Industry and specialized information portals;
- Materials of the sites of the subject under study (web-resources of manufacturers and suppliers, electronic trading platforms, bulletin boards, specialized forums, Internet stores);
- Regional and national media;
- Portals of information disclosure (reporting of public companies).



Distribution of the business plan

The Business Plan materials are not intended for wide distribution or publication. When making the Business Plan available to users, the purpose of the document, the assumptions adopted for its preparation, and any restrictions on its use must be communicated to them.

Scope of analysis

The business plan has been prepared on the basis of information obtained from publicly available sources.

Limitation of liability

All opinions, conclusions and estimates contained in this business plan are valid as of the date hereof. The Contractor is not responsible for changes in economic, political, social, or other conditions that may affect the validity of these judgments.

Contractor shall not be liable for any loss or damage suffered by a third party as a result of the use of the information in this business plan.

1. PROJECT SUMMARY

Metal products (or metal goods) are in great demand in the construction market, where at the moment there are mainly products from China and Taiwan. Unfortunately, in Uzbekistan, self-tapping screws are produced in small quantities and are not able to meet the needs of the country in this type of products.

Opening the production of self-tapping screws will reduce their cost due to the lack of international transport and customs costs, so the project initiator decided to create a production of self-tapping screws in the Northwestern Federal District of the Russian Federation. The established production is able to supply these goods not only to the local but also to the all-Russian market. In the future it is planned to organize the sale of products for export as well.

It is planned to produce self-tapping screws of different sizes at the projected plant. This will expand the range of potential customers of the company and increase revenues. In the future, it is possible to supply products for debt.

The stages of the project are shown in the table:

Table 1.1 Project Implementation Schedule

Project Stage	Beginning of work	Duration, days	End of job
Analysis of the economic efficiency of the project	01.08.2024	30	31.08.2024
Attracting funding to implement the project	01.09.2024	60	31.10.2024
Advance payment for the production line	01.11.2024	29	30.11.2024
Equipment delivery and installation	01.02.2025	27	28.02.2025
Formation of the staff schedule	01.02.2025	58	31.03.2025
Formation of working capital to start production	01.03.2025	30	31.03.2025
Start of production	01.04.2025		

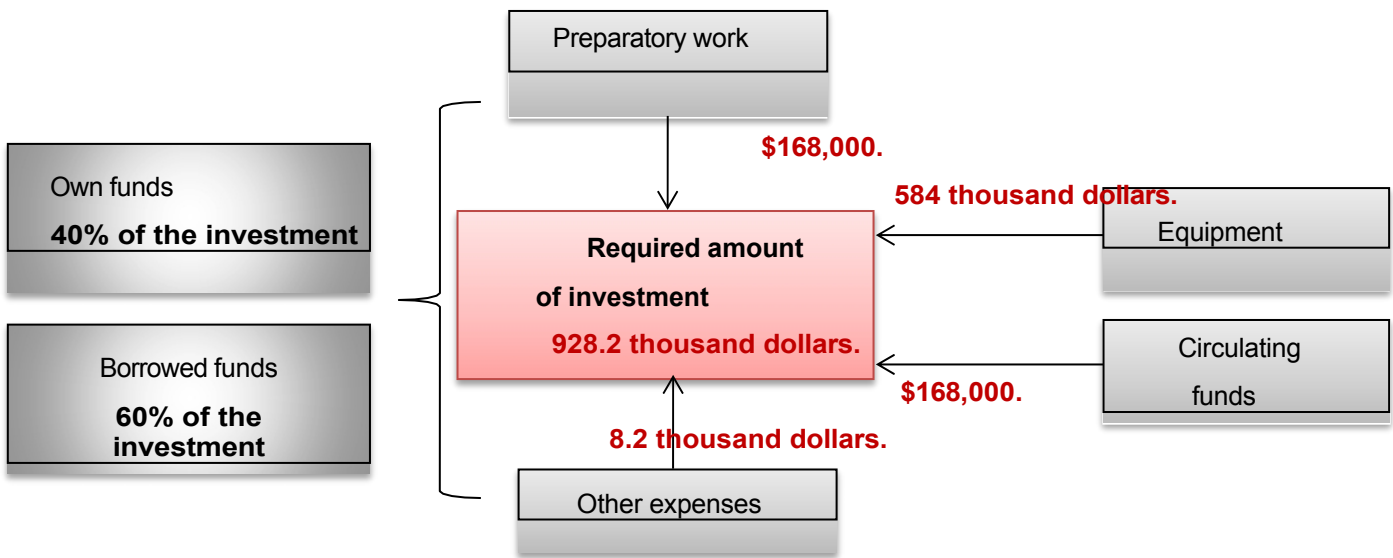
Source: Global Innovation Trade analysis and calculations

Investments

The volume of investment for the project is **928.2 thousand dollars**.

Payback period of the project under consideration is about 7 years, taking into account discounting.

Figure 1.1 Required amount of investment



Source: Global Innovation Trade calculations

The main financial indicators of the project are presented in the table:

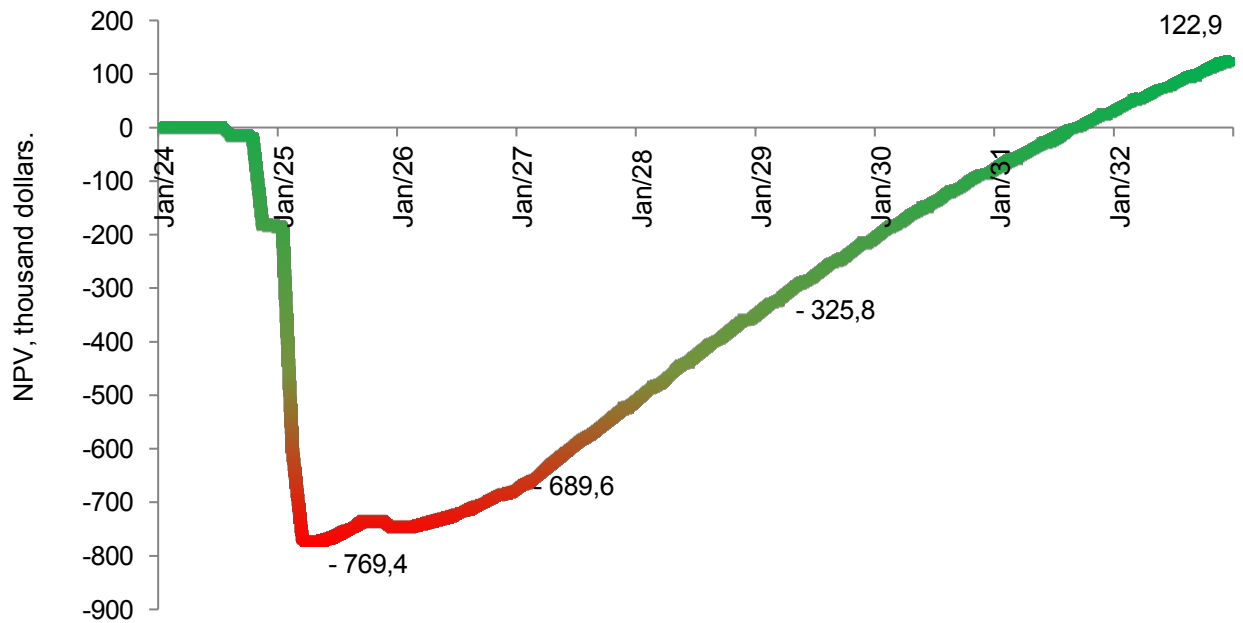
Table 1.2 Key financial indicators

Investment performance indicators	Value
Calculation period (planning horizon), months.	102
Net income (NV), thousand dollars.	1 098,1
Net discounted income (NPV), thousand dollars.	122,9
Internal rate of return (IRR), % per year	21%
Profitability index (PI), units.	1,13
Payback period (PB), months.	60
Discounted payback period (DPB), months.	86
Investments in the project, thousand dollars.	928,2
Average return on sales for the project, %	14%
Net income (cumulative), thousand dollars.	1281,379
Discount rate, %	16,39%

Source: Global Innovation Trade calculations

Figure 1.2 shows the graph NPV of the project by years of its implementation. The NPV graph shows an increase in the net present value of the project by years:

Figure 1.2 Graph of the NPV of the project



Source: Global Innovation Trade calculations

According to the study, it is clear that the project is profitable. The net discounted income of the project in 2032 will be **\$122.9 thousand**.

2. ESSENCE OF THE PROPOSED PROJECT

2.1 General description of the project

As part of the proposed project it is planned to create a plant for the production of self-tapping screws in the Kamashinsky district. The projected capacity of the plant is 1 200 tons of finished products per year.

Self-tapping screws or self-tapping screws are a type of fastening elements that are widely used during finishing and construction work and do not require additional drilling of holes. To provide this possibility, they have a special external thread, which, when screwed into the surface, forms an internal thread, providing a secure attachment.

Self-tapping screws are manufactured from cold-formed steel wire. In the final stage of production, the self-tapping screws will be coated to ensure the products' resistance to the external environment. The fasteners are treated by phosphating.

Design of self-tapping screws

1. The male threaded rod is the main part of the element. Its thread has a pointed triangular profile. It can be frequent or infrequent.

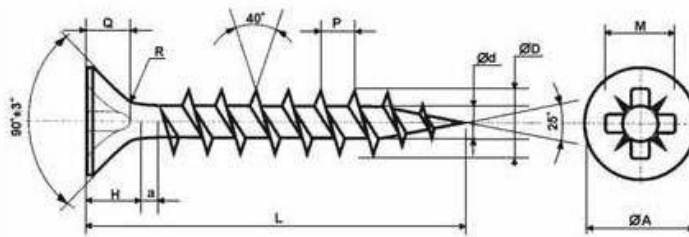
2. The head is the extended upper part of the fastener. It can be horn, conical, gallet, hinge, hexagonal, flat, hemispherical, countersunk or semi-sunk. It is one of the main parameters that determine the price of a screw.

3. A slot is a groove on the head of a screwdriver. The slot can be Phillips, square or hexagonal.

4. Tips are the lower part of the fastener. Self-tapping screws, which have a drill tip, are used for working with metals. For all other applications, self-tapping screws with a sharp tip are used.

The length of screws is standard and can range from 7-300 mm, and the diameter - 1.6-12 mm (depending on the diameter of the circumference of the thread protrusions).

Figure 2.1. Example of a self-tapping screw (drywall screw)



Source: Yandex.Pictures

Classification of self-tapping screws

Self-tapping screws are classified according to their application:

- Self-tapping screws for wood and chipboard are used fasteners with sparse thread pitch, which is located in relation to the top of the profile at an angle of 45 °.
- Metal self-tapping screws have threads with a frequent pitch, as well as a sharp drill tip.
- For drywall fasteners are used with a countersunk head, which prevents the deformation of the upper layer of material during its installation.
- Self-tapping roofing screws are used elements equipped with weatherproof rubber gasket sealing washers. Such a design is necessary to ensure sealing the holes. It is possible to use self-tapping screws with a flat or hexagonal head.
- For window profiles and furniture are equipped with a drill bit, frequent threads. To ensure the attractive appearance of the product, fasteners with a decorative head are used

2.2 Features of the project organization

The main features of the project organization include:

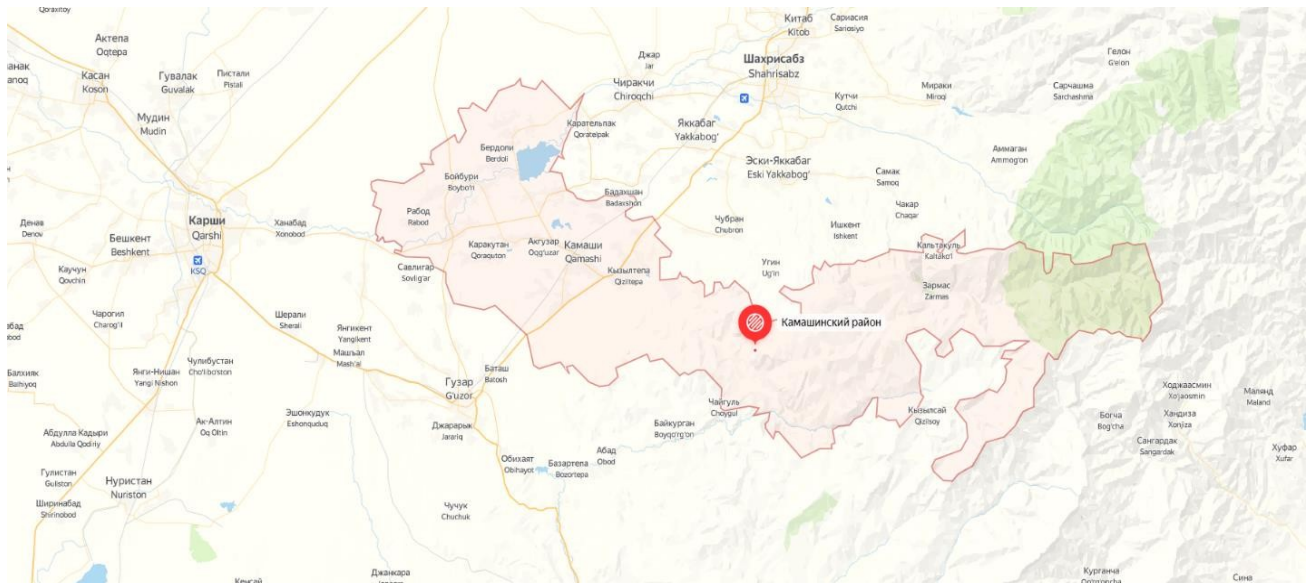
- Availability of a building for the organization of the production process in the property of the Project Initiator;
- The project is expected to be financed by own and borrowed funds in the ratio of 40%/60%;
- Creation of 31 new jobs;
- The equipment supplier will be a large company from Taiwan, I Machine Tools Corp.

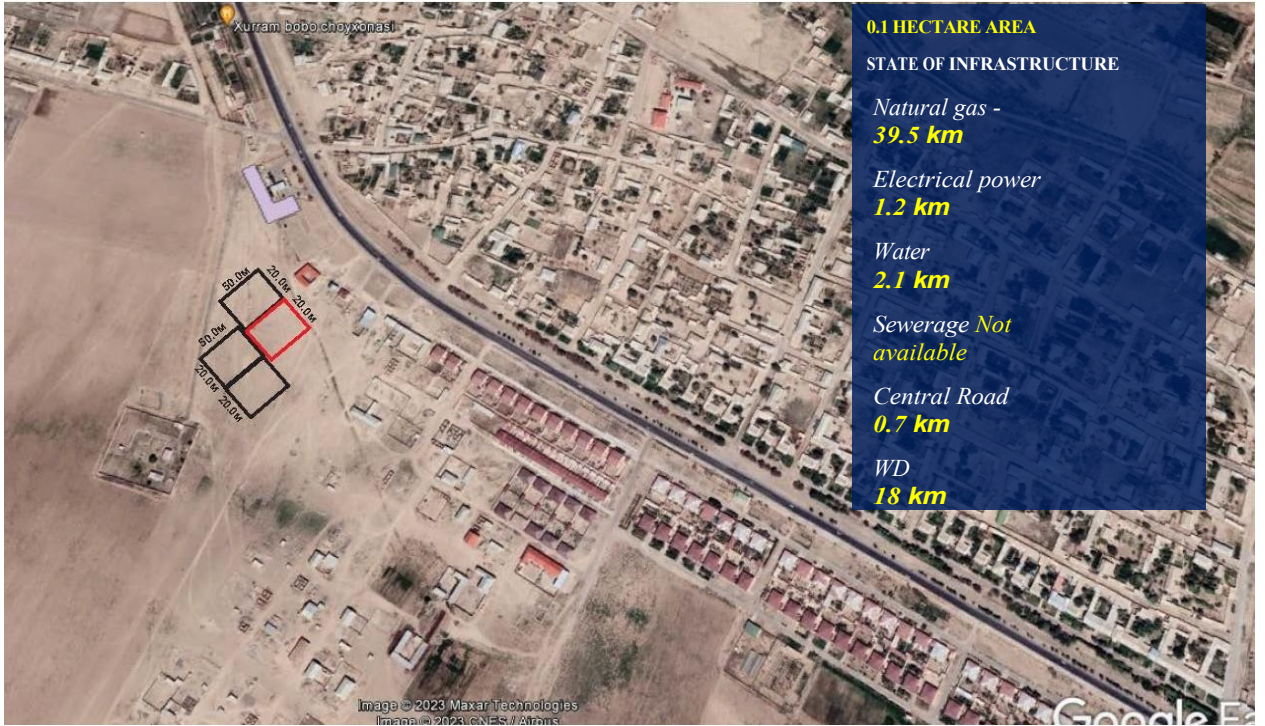
2.3 Project Location

The production site is located in Kashkadarya region, Kamashi district in Okguzar village. The district occupies an area of more than 2.66 thousand square kilometers. It is located 60 kilometers from Karshi city and 485 kilometers from Tashkent. The district is connected to Karshi city by a road2.

The population of the Kashkadarya region as of 2023 is 3.5 million people, with the population of the Kamashin region itself being 286,000.

Figure 2.2. Location





Source: Yandex. maps



3. MARKETING PLAN

3.1 Market analysis

3.1.1 General situation on the market of self-tapping screws in Uzbekistan

Among the variety of fasteners produced in the world today a special place belongs to self-tapping screws. They are widely used in domestic construction for fixing gypsum boards, thin sheet materials (including various roofing materials), steel sheets, plywood, fiberboard to metal, plastic and wooden load-bearing structures, as well as in batch bonding of metal sheets together.

The following Uzbek enterprises are represented in the domestic market of self-tapping screws:

- 1) Wangdametal;
- 2) Mexmash;
- 3) Metallinvest

Their total share is only about 1% of the Uzbek market of self-tapping screws. Uzbek self-tapping screws, according to consumers, are inferior in price and quality to their foreign counterparts, primarily Chinese. Uzbek manufacturers have problems even at the stage of purchasing raw materials: not all metal for the manufacture of self-tapping screws is suitable. Even small discrepancies with the required quality of raw materials lead to the fact that self-tapping screws turn out if not defective, then uncompetitive. Metal of the required quality is produced in Uzbekistan, but in small quantities, and therefore the price is high.

Uzbek manufacturers of self-tapping screws see two directions of development in the conditions of prolonged recession in the economy. The first is to increase exports of products, primarily to countries where prices for metalware in terms of dollars are much higher. For example, in the European market the self-tapping screws are 25-30% more expensive than in Uzbekistan. The second is to increase market share in the next few years, including through import substitution.

Another thing is that it is not easy to respond quickly to emerging demands. To meet the needs of import substitution, manufacturers reanimated old equipment and technology, and somewhere began to master new ones. But the consumers' focus on import substitution is unstable. When the exchange rate more or less stabilized, the interest began to fade, and then came back. And everything depends on how quickly Uzbek producers will be able to respond.

These factors create obvious prerequisites for the creation and development of Uzbekistan's own small and medium-sized industries focused on import substitution.



3.1.2 Competitive analysis in the market of self-tapping screws

3.1.2.1 *The main players on the market*

Figure 3.1. Segmentation of products in the market of self-tapping screws by country origins

Products of Uzbek companies occupy only 10% of the self-tapping screw market

The main companies supplying self-tapping screws to the Uzbek market include:

Table 3.1. Main market players

No	The company	Country	Web site	Contact information
1	YUYAO MEIGESI FASTENER CO.	China	http://www.meigesi.com/	Tel:+86 0574-62853123 0574-62853896, Sales Department: rhino@nbrhino.com
2	TYCOONS GROUP ENTERPRISE CO.	Thailand	http://www.tycons.com/index_in_en.htm	99 Moo 1, Tumbon Nikompattana Amphur Nikompattana, Rayong 21180 Thailand. E-mail: mktusa@tycons.com. TEL: +66(33)658558
3	CHINFAST CO. LTD.	China	http://www.chinfast.com/	15th Floor Landmark Plaza NO.1238 HongXing Road JiaXing , ZheJiang , China 314001. E-mail: chinfast@chinfast.com. Tel: 86-573-82119831
4	ZHEJIANG EXCELLENT INDUSTRIES CO.LTD	China	http://www.excellenthardware.com/about.asp	57donggang road,new district,haiyan,314304 zhejiang,PRC. E-mail:sales@excellenthardware.com. Tel:0086-573-8905 2851, 8905 2855
5	HAINING HISENER TRADE CO., LTD.	China	http://www.hisener.com/index.php	7th Floor, Block A, Jinhui Building, No.486 South Haichang Road, Haining, Zhejiang, China. E-mail: Sales@hisener.com. Tel: 0086-573-87379615 87379889
6	NINGBO WEIFENG INTERNATIONAL ENTERPRISE LIMITED	China	http://www.wf-fastener.com/	
7	OJSC Rechitsa Metizny Plant	Belarus	http://rmz.by/	247500, Republic of Belarus, Gomel 2, Frunze St., Rechitsa Region. E-mail:

№	The company	Country	Web site	Contact information
				info@rmz.by. Phone: + 375 (2340) 65-220
8	NLMK-Metiz	Russia	http://products.nlmk.com/products/metaware/	5 Koltsevaya St., Berezovsky, 623704. E-mail: info@nlmk.com. Phone/Fax: +7 34369 6-24-00
9	JSC Belebeyevskiy Zavod Avtonormal (JSC BelZAN)	Russia	http://www.belzan.ru/products/section/118	452005, Russia, Bashkortostan, Belebey, 1a Syrtlanova str. E-mail: belzan@belzan.ru Phone: +7 34786 3-01-90.
10	Parallel LLC	Russia	http://www.rusbolt.com/index.php	137 Moskovskoe highway, Orel, 302025, building 5, office 72, 7th floor. E-mail: parallel@bolt57.ru. Phone: (495) 133-62-58, (4862) 36-90-36
11	MMC-METIZ JSC	Russia	http://mmk-metiz.ru/	455002, Chelyabinsk Region, Chelyabinsk. Magnitogorsk, ul. Metiznikov, 5
12	LLC Siversky Metizny Plant	Russia, Northwestern Federal District	http://smz-spb.ru	188330, Leningrad region, Gatchinsky district, settlement Siversky, Zavodskaya street, 9. E-mail: 7@ooo-smz-spb.com . Phone/fax: 8-. (81371) 45-328
13	Krym-Zitar Ltd.	Russia	http://crimeazitar.ru/	295021, Republic of Crimea, Simferopol, 43 Danilova St., office 205. E-mail: info@crimeazitar.ru. Phone: +7 (978) 972-85-89

№	The company	Country	Website	Contact information
14	PENZA METIZNY PLANT LTD.	Russia	http://penzmz.ru/	440004, Russia, Penza, Ryabova St., 4B. E-mail: mail@penzmz.ru Phone: +7 (8412) 37-84-00
15	LLC REVDA METIZNY PLANT	Russia	http://www.rmz-r.ru/	623280, Sverdlovsk region, Revda, Karla Liebknecht St., 2. E-mail: zavod@rmz-r.ru. Phone: (34397) 3-58-00, 3-15-59, 3-92-00.
16	RosMet LLC ³	Russia	http://rosmet23.com/	352615 Krasnodar Territory, Belorechensk District, Bzhedukhovskaya St., Komsomolskaya 2B. E-mail: zavod@rosmet.biz Phone: +7-988-290-44-33.

Source: Global Innovation Trade analysis, official company websites

The presented companies supply different types of self-tapping screws to the Uzbek market. The product range of these manufacturers is presented in the following section.

3.1.2.2 Overview of the competitor range

The assortment of the main competitor companies is presented in the table:

Table 3.2. Overview of the range of competitors

№	The company	Assortment
1	YUYAO MEIGESI FASTENER CO. LTD.	<ul style="list-style-type: none"> ▪ Self-tapping screw for chipboard ▪ Concrete screws ▪ Self-tapping screws ▪ Self-tapping screws with semi-circular head ▪ Flat head self-tapping screws
2	TYCOONS GROUP ENTERPRISE CO. LTD.	<ul style="list-style-type: none"> ▪ Self-tapping screws for plasterboard with a fine and medium thread ▪ Self-drilling screw
3	CHINFAST CO. LTD.	<ul style="list-style-type: none"> ▪ Self-tapping screws with coarse and fine threads ▪ Self-tapping screw for drywall ▪ Self-drilling screw with a semi-circular head ▪ Self-tapping screw for chipboard ▪ Window screw
4	ZHEJIANG EXCELLENT INDUSTRIES CO.LTD.	<ul style="list-style-type: none"> ▪ Self-tapping screws for chipboard
5	HAINING HISENER TRADE CO. LTD.	<ul style="list-style-type: none"> ▪ Self-tapping screws for drywall ▪ Phillips head self-tapping screws ▪ Self-tapping Phillips screws with drill bit ▪ Window self-tapping screws with and without drill ▪ Self-tapping screws with flat head and drill bit ▪ Self-tapping screws with semi-circular head ▪ Self-tapping screws with hexagonal head ▪ Self-tapping screws with "wings"
6	NINGBO WEIFENG INTERNATIONAL ENTERPRISE LIMITED	<ul style="list-style-type: none"> ▪ Flat head self-tapping screws ▪ Self-tapping screws with semi-circular head ▪ Self-tapping screws with hexagonal head ▪ Self-tapping screws for drywall with coarse and fine threads
7	OJSC Rechitsa Metizny Plant	<ul style="list-style-type: none"> ▪ see section 3.2.2.2
8	NLMK-Metiz	<ul style="list-style-type: none"> ▪ Self-tapping screw for drywall with double-entry thread ▪ Self-tapping drywall screw with single thread ▪ Self-tapping screws for fixing metal sheets

№	The company	Assortment
		<ul style="list-style-type: none"> ▪ Self-tapping screws for wood
9	JSC Belebeyev Plant "Avtonormal" (BelZAN JSC)	<ul style="list-style-type: none"> ▪ Cylindrical head Phillips head self-tapping screws ▪ Self-tapping screws ▪ Half countersunk head Phillips head self-tapping screws ▪ Self-tapping screws with hexagonal head and flange
10	Parallel LLC	<ul style="list-style-type: none"> ▪ Self-tapping screws with semi-circular head
11	MMC-METIZ JSC	<ul style="list-style-type: none"> ▪ Self-tapping screws for drywall with fine and coarse threaded
12	LLC Siversky Metizny plant"	<ul style="list-style-type: none"> ▪ Self-tapping screws gyprock-metal ▪ Self-tapping gyprock wood screws
13	Krym-Zitar Ltd.	<ul style="list-style-type: none"> ▪ Self-tapping screw with coarse thread ▪ Self-tapping screw with frequent threads ▪ Screw with countersunk head and drill bit tip ▪ Self-tapping screw for attaching gypsum fiber boards with double-threaded
14	PENZA METIZNY LTD. THE PLANT".	<ul style="list-style-type: none"> ▪ Self-tapping screws with cylindrical head ▪ Self-tapping screws
15	LLC REVDA METIZNY PLANT	<ul style="list-style-type: none"> ▪ Self-tapping screws for drywall with coarse and fine threads ▪ Self-tapping screws for wood
16	RosMet ^{LLC4}	<ul style="list-style-type: none"> ▪ Niprock-metal self-tapping screws; ▪ Self-tapping gypro wood screws; ▪ Self-tapping screws with a press washer; ▪ Self-tapping screws with a drill bit; ▪ Self-tapping screws with semi-cylindrical head; ▪ Self-tapping screws for roofing materials; ▪ Window self-tapping screws; ▪ Self-tapping screws for gypsum fiber boards.

Sources: official websites of the companies

According to the analysis of the range of the largest manufacturers, the following types of self-tapping screws are most popular in the Uzbek market:



- Self-tapping screws for drywall;
- Self-tapping screws for chipboard;
- Self-tapping screws with frequent threads;
- Self-tapping gyprock-metal screws;
- Self-tapping screws with a drill bit;
- Self-tapping gypro wood screws;
- Window self-tapping screws.

3.1.3 Analysis of the consumption of self-tapping screws in Uzbekistan

3.1.3.1 Market saturation

The Uzbek market of self-tapping screws is saturated, in general, there is no shortage of this type of products. However, domestic manufacturers of self-tapping screws are not fully able to cover domestic demand. Lack of production capacity and low quality of produced products compared to their foreign counterparts have an impact. Import of self-tapping screws, which reaches 90% of the total market volume, significantly exceeds domestic production and export volumes.

3.1.3.2 Consumption of self-tapping screws in Uzbekistan

The volume of imports of fasteners, of ferrous metals (HS code 7318) in Uzbekistan in 2020 - November 2022 was 161.3 million dollars at a cargo weight of 50.4 thousand tons.

Uzbekistan imports screws, nuts, rivets and similar products of ferrous metals from the world market with a pronounced (77.9%) seasonality. The maximum of imports was in the 4th quarter of 2021, the minimum - in the 3rd quarter of 2022.

The average import price of ferrous metal fasteners ranged from 2.7 thousand to 3.2 thousand dollars per ton.

3.1.3.3 Main consumption industries/consumption groups

The main branches of consumption of self-tapping screws are construction, machine building and automotive industry. The position of self-tapping screw manufacturers directly depends on how well these industries develop.

Construction industry. In January-December 2021, the volume of construction works performed in the Republic of Uzbekistan amounted to 107,447.6 billion soums and the growth rate amounted to 106.8% compared to 2020. 32

In January-December 2021, a total of 13,643.4 thousand sq. m of housing was commissioned, which amounted to 106.0% of the total housing stock by 2020, of which 12978.3 thousand sq. m or 95.1% of the total volume was commissioned by individual developers, 254.7 thousand sq. m or 1.9% of the total volume were houses built based on the standard designs. of their total volume were homes built according to standard projects, and 410,400 square meters or 3.0% of their total volume were homes built by other businesses. Today there are about 1.5 million builders in the industry. As of June 1, 2021, the number of enterprises and organizations in the construction sector has reached 43.3 thousand, which is 5 thousand more than the same period last year. Of the total number of construction companies, 56.9% are involved in the construction of buildings and structures, 9.9% - in the construction of civil works, 33.2% are engaged in specialized construction work.

Currently, in Uzbekistan there are about 12.5 thousand enterprises for the production of building materials, the number of types has exceeded 180. By 2020, 626 international standards for the production of quality and safe building materials have been adopted. As of July 1, 2021, the number of construction enterprises and organizations related to construction increased by 135.0% compared to the same period in 2019 and is one of the sectors with a stable growth rate. The main factor that influenced the increased number of enterprises in the construction industry as of July 1, 2021 by 113.0%, when compared to the corresponding period in 2020, is the increase in the number of operating enterprises in the construction of buildings and structures by 56.9% (of the total number of enterprises in the construction industry) (growth rate - 111.0%), civil works by 9.9% (growth rate - 115.9%), specialized construction works - by 33.2% (growth rate - 115.7%). The volume of construction works performed by major construction companies made up 12114.5 billion soums in January-June this year. Comparing with the same period of 2020, the growth rate of construction works reached 85.7% during this period, while their share in total volume decreased by 4.5% and made up 24.9%. The largest number of construction companies is in Tashkent - 19.7% of the total share in the country. The least number of construction companies operates in Syrdarya and Navoi regions - 3.6% and 3.7% respectively. Meanwhile, the highest share in the volume of construction works performed by large construction companies was noted in Tashkent (27.8% of the total volume of construction works in the region, or 128.1% more than in the corresponding period of 2020), Navoi region (22.7% of the total volume of construction works in the region, or 87.7% more than in the corresponding period of 2020) and Kashkadarya region (21.3% of the total volume of construction works in the region, or 166.2% more than in the corresponding period of 2020). The volume of construction works performed by small enterprises and microfirms increased in January-June 2021 compared to other organizations, their share was 56.7 % of the total volume, which is 2.3% more if compared to the same period of last year. Thus, the volume of construction works completed by them made up 2,745.9 billion soums and the growth rate reached 104.5% compared to January-June 2020.

In 1991, the population of Uzbekistan was 20.5 million and by 2015 had increased to 30.4 million. According to forecasts, by 2031 the population will be about 37 million people, and by 2050 - About 43 million people. Thus, the volume of necessary housing construction in the Republic of Uzbekistan until 2031 can be estimated in more than 250 million m². Of course, the accelerated growth of housing construction will entail a commensurate increase in the construction of engineering and transport infrastructure. Moreover, achieving the goals of industrial and innovative development of the country until 2030 involves increasing the share of industry in GDP to 37.0% by 2030. Of particular relevance is the increase in the share of processing industry in GDP. Increasing this indicator from 9% in 2010 to 22% by 2030 assumes achieving an annual growth rate of value added in the processing industry of 11.3%, with an average annual growth rate of this indicator in the extractive industries of the economy at 5%. The experience of developing countries shows that this task requires the concentration of production forces in the so-called points of growth - in cities and urban agglomerations. Economic growth is always accompanied by an increase in urbanization, and these two processes feed off each other. There is a direct statistical correlation: most countries with incomes above \$20,000 per capita are more than 60% urbanized. Most countries with incomes below \$10,000 per capita are less than 50% urbanized.

In general, the course for accelerated economic growth, positive demographic dynamics, attraction of borrowed funds and active integration of the Republic of Uzbekistan into the regional and global system of trade relations allows us to predict a rapid increase in the volume of construction in the country over the next 10 years.

4. WORK PLAN

4.1 Description of technological equipment

The total cost of purchasing equipment is \$584.1 thousand. The list of the main technological equipment is presented in the table:

Table 4.1. List of the main technological equipment

No	Capital expenditures	Qty/%	Cost, thousand dollars.
1	Equipment for planting self-tapping screws	1	10,3
2	Tooling set for machines for the production of various product sizes	3	0,9
3	Thread rolling machine	1	10,9
4	Fastener heat treatment line	1	249,9
5	Phosphating line	1	271,8
6	Vertical drawing machine	1	28,9
7	Wire sharpening machine	1	3,8
8	Welding machine for welding the ends of booms	1	2,8
9	Rotating wire winding table	1	4,7
TOTAL			584,1

Source: I Machine Tools commercial offer Corp."



In addition to the equipment listed in the table, it is also planned to purchase an electric forklift in the amount of 3 pieces to organize the internal logistics of production. The cost of acquiring loaders will be 15 thousand dollars per 1 pc.

4.2 Description of technological processes

Self-tapping screws are produced by cold forming. Cold-formed steel wire will be used to manufacture the hardware. The production of self-tapping screws involves several steps.

1. Shaping the dummy. At this stage, a blank of the future self-tapping screw is created. The head of the product, the tip and the length are formed on the machine. The diameter of the metalware is determined by the cross section of the wire used. The tip of the fastener is made simultaneously with the formation of the cap and the rod.

2. Thread cutting. Machining of hardware is carried out on automatic machines or lathes with the help of cutting tools - flat dies. Self-tapping screw blanks are poured into the hopper. From the feeder, the blanks are fed into the threading area one by one by means of a vibrator and an anchor. The blanks are oriented in relation to the dies. The cutting tools move parallel to each other and perpendicular to the axis of the fastener. The dies are pressed tightly against the rod of the fastener when the threads are created.

3. Surface hardening. Rapid heating of the self-tapping surface at a speed of more than 1000°C per minute followed by cooling in a quenching environment is carried out. Gas burners or electrolyte are used. Surface hardening is carried out to the hardness of not less than 55 HRC units (according to Rockwell). Surface hardening increases the strength of the product.

4. Corrosion protection. Self-tapping screws are coated to ensure that the products are resistant to the external environment. Fasteners are treated by phosphating, which is the application of a layer of chemical elements on the surface of the hardware. It is carried out by dipping the screw in a solution of phosphates of zinc, manganese, iron and cadmium. The composition is heated to a temperature of 90-100 ° C.

4.3 Raw materials and components

To ensure the production process, the company is required on a regular basis:



- Costs of raw materials (steel wire for cold heading);
- Costs of materials for phosphating;
- Electricity;
- Gas;
- Packaging for finished products.

Consumption of raw materials and supplies during the production process is presented in the table:

Table 4.2. Composition of raw materials and supplies for production

№	Name of costs	Calculation of costs
1	Raw material costs (wire for cold heading)	price - \$0.2916/kg
2	Material costs for phosphating	0.09 USD/kg of finished product
3	Electricity	500 kWh, 2 shifts (16 hours), 25 days per month, tariff - \$0.0726/kW
4	Gas	20 m ³ /hour, 2 shifts (16 hours), 25 days per month, tariff - \$54.36 /1000m ³
5	Packaging	1.5% of the cost of the finished product

Source: data, Global Innovation Trade analysis

Calculation of the cost of raw materials and supplies is presented in section 6.5 "Operating costs (fixed and variable)".

5. ORGANIZATIONAL PLAN

5.1 Personnel plan

To form a staffing schedule of the production enterprise were analyzed: the concept of the project, the basic business processes, production technology, the volume of basic and auxiliary operations. As a result, the following structural units were formed in the staff schedule:

- Administrative and managerial staff;
- Production personnel;
- Auxiliary Personnel.

In the calculation part of the business plan was formed by the plan FTE based on the condition of the departments belonging to the above-mentioned structural units.

Table 5.1. Formation of payroll and staff schedule of the enterprise, thous.

No	Job title	Number of employees	Salary of one employee, thous. USD/month.	Total payroll, thous. \$/month	Total payroll, thous. USD/year
1	Administrative management personnel	9		300,0	3600,0
1.1	Director	1	60,0	60,0	720,0
1.2	Accountant	2	36,0	72,0	864,0
1.3	Secretary	1	18,0	18,0	216,0
1.4	Sales Manager	3	30,0	90,0	1080,0
1.5	Logistics Manager	2	30,0	60,0	720,0
2	Production personnel	12		240,0	2880,0
2.1	Shift supervisor	2	30,0	60,0	720,0
2.2	Working	10	18,0	180,0	2160,0
3	Support staff	10		144,0	1728,0
3.1	Handyman, Loader	5	15,0	75,0	900,0
3.2	Janitor	2	12,0	24,0	288,0
3.3	Security Guard	3	15,0	45,0	540,0
Total		31		684,0	8208,0

Source: Global Innovation Trade analysis and calculations

Thus, with the total number of staff organization 31 people monthly payroll turned out to be equal to **13.680 thousand dollars**.

5.2 Work schedule for the project

The stages of the project are shown in the table below:

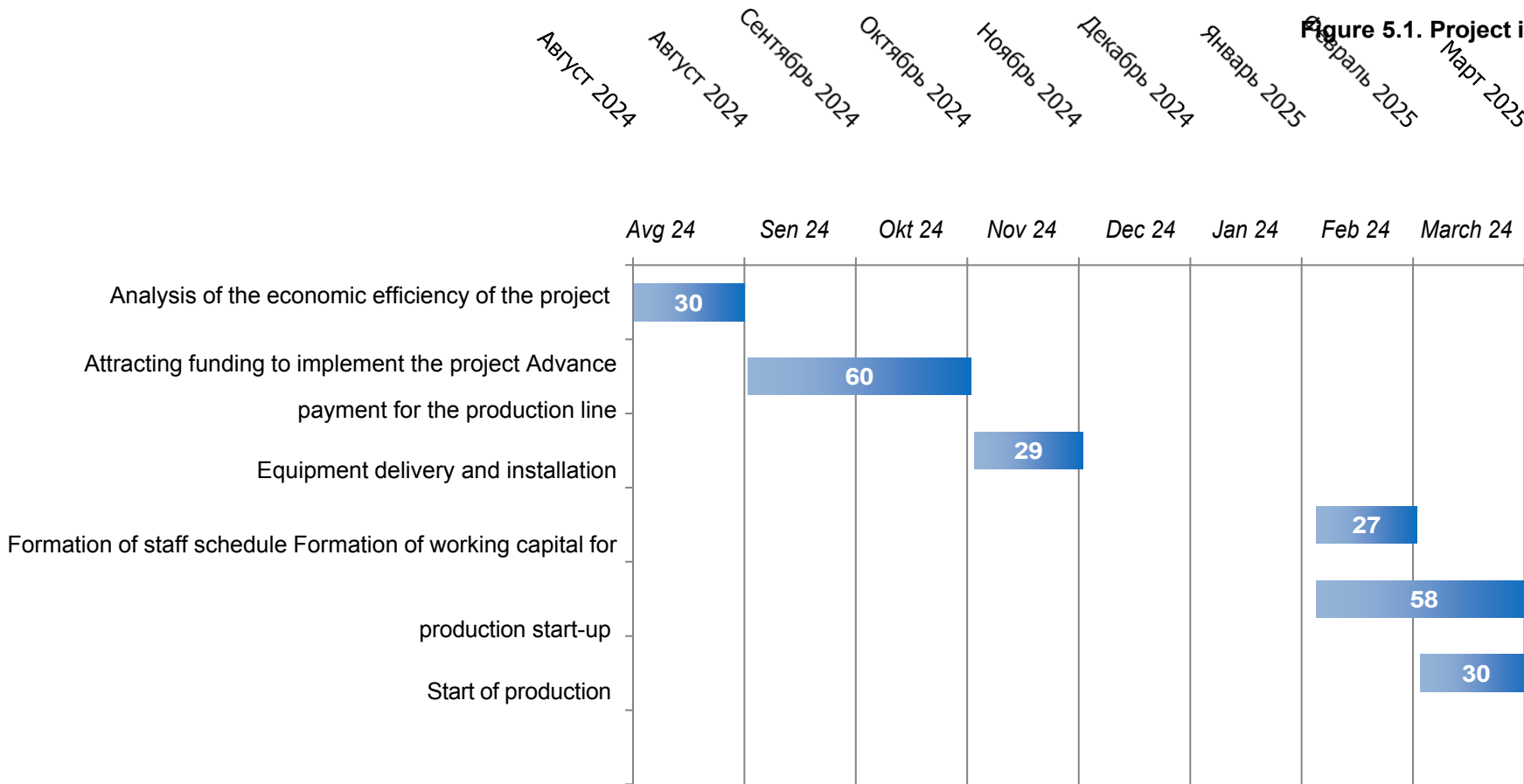
Table 5.2 Project implementation schedule

Project Stage	Beginning of work	Duration, days	End of job
Analysis of the economic efficiency of the project	01.08.2024	30	31.08.2024
Attracting funding to implement the project	01.09.2024	60	31.10.2024
Advance payment for the production line	01.11.2024	29	30.11.2024
Equipment delivery and installation	01.02.2025	27	28.02.2025
Formation of the staff schedule	01.02.2025	58	31.03.2025
Formation of working capital to start production	01.03.2025	30	31.03.2025
Start of production	01.04.2025		

Source: Global Innovation Trade analysis and calculations

The project implementation schedule in graphical form is shown in the figure:

Figure 5.1. Project implementation schedule



Thus, the launch of self-tapping production is scheduled for April 2025.

Source: Global Innovation Trade data

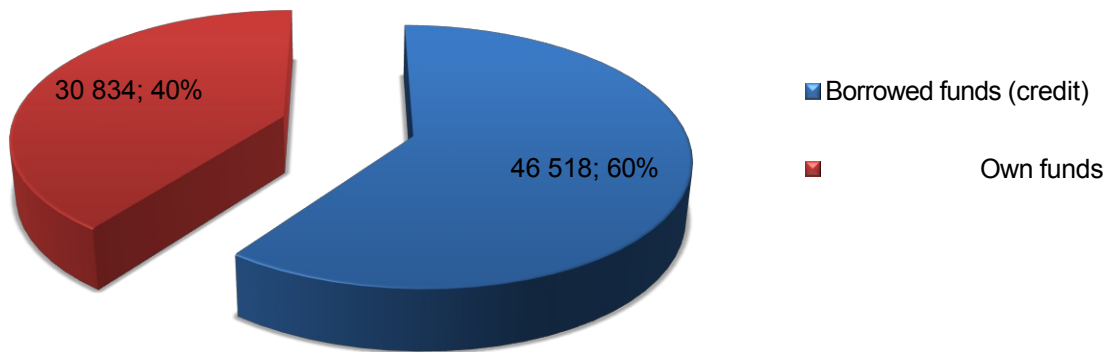
5.3 Sources, forms and conditions of financing

The main investments of the project will amount to **\$928.236 thousand**.

The project is financed by own and borrowed funds. Own funds account for 40% of investments, amounting to 370,008 thousand dollars. This amount includes the cost of preparatory work, the cost of the production building and monetary funds to cover the deficit of cache-flo. Borrowed funds represent a credit line of \$558,216 thousand (70% of the investment).

The following is the financing structure for the project:

Figure 5.2. Project financing structure, %



Source: Global Innovation Trade analysis and calculations

The interest rate on the loan at the bank is 18.00%. The term of the loan is 5 years without deferment of payment of interest and debt body.

Table 5.3. Terms of credit (leasing)

Loan Terms	Credit, year	Credit, months.
Loan rate, %	18,00%	1,50%
Loan repayment term	5	60

Source: Global Innovation Trade analysis and calculations

The schedule of repayment of borrowed funds is presented in the table:

Table 5.4. Borrowed funds repayment schedule

		Jan.24	Feb.24	mar.24	Apr.24	May.24	Jun.24	July 24	Aug. 24	sen.24	Oct. 24	Nov.24	Dec. 24
1	Amount of borrowed funds (credit)	0	0	0	0	0	0	0	0	0	0	122,7	0,0
2	Accrued interest	0	0	0	0	0	0	0	0	0	0	0,0	1,8
3	Payment of the body of the debt	0	0	0	0	0	0	0	0	0	0	14,0	5,8
Total		0	0	0	0	0	0	0	0	0	0	14,0	7,6

		Jan.25	fev.25	mar.25	Apr. 25	May.25	Jun 25	July 25	Aug. 25	sen.25	Oct. 25	Nov. 25	Dec. 25
1	Amount of borrowed funds (credit)	0,0	317,7	117,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	Accrued interest	1,8	6,3	7,9	7,8	7,7	7,6	7,5	7,4	7,3	7,2	7,1	7,0
3	Payment of the body of the debt	5,9	6,0	6,1	6,2	6,3	6,3	6,4	6,5	6,6	6,7	6,8	6,9
Total		7,7	12,3	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0

		Jan.26	Feb.26	mar.26	Apr.26	May.26	Jun 26	July 26.	Aug 26	sen.26	Oct. 26	Nov. 26	Dec. 26
1	Amount of borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	Accrued interest	6,9	6,8	6,7	6,6	6,5	6,4	6,3	6,2	6,0	5,9	5,8	5,7
3	Payment of the body of the debt	7,0	7,1	7,3	7,4	7,5	7,6	7,7	7,8	7,9	8,1	8,2	8,3
Total		14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0

		Jan.27	fev.27	mar.27	Apr.27	May.27	Jun.27	July 27.	Aug. 27	sen.27	Oct. 27	Nov.27	Dec. 27
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1	Amount of borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	Accrued interest	5,5	5,4	5,3	5,2	5,0	4,9	4,8	4,6	4,5	4,3	4,2	4,0
3	Payment of the body of the debt	8,4	8,5	8,7	8,8	8,9	9,1	9,2	9,3	9,5	9,6	9,8	9,9
Total		14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0

		Jan.28	Feb.28	mar.28	Apr.28	May.28	Jun.28	July 28.	Aug.28	sen.28	Oct. 28	Nov.28	Dec. 28
1	Amount of borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	Accrued interest	3,9	3,7	3,6	3,4	3,3	3,1	3,0	2,8	2,6	2,5	2,3	2,1
3	Payment of the body of the debt	10,1	10,2	10,4	10,5	10,7	10,8	11,0	11,2	11,3	11,5	11,7	11,9
Total		14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0

		Jan.29	fev.29	mar.29	Apr.29	May.29	June 29	July 29.	Aug. 29	sen.29	Oct. 29	Nov. 29	Dec. 29	Jan.30
1	Amount of borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	558,2
2	Accrued interest	1,9	1,8	1,6	1,4	1,2	1,0	0,8	0,6	0,4	0,2	0,0	0,0	265,4
3	Payment of the body of the debt	12,0	12,2	12,4	12,6	12,8	13,0	13,2	13,4	13,6	13,8	0,0	0,0	558,2
Total		14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	0,0	0,0	823,6

Source: Global Innovation Trade analysis and calculations

The amount of interest paid on the loan for the period would be \$265,356,000.

6. FINANCIAL PLAN

6.1 The assumptions made in the project are described below.

Product assumptions

The main product of this project are self-tapping screws of different sizes.

Assumptions about price

Prices for the company's products are set at the level of the average market. It is possible to provide discounts depending on the volume of supply, as well as to increase customer loyalty.

Assumption about the production plan

Calculation of the monthly production volume was carried out on the basis of the production capacity of the projected plant.

Assumptions about investment costs

Investment costs are divided into 5 categories:

- Preparatory work;
- Production equipment;
- Additional costs;
- Working capital;
- Covering cache-flo deficit (working capital).

Assumptions about the initial working capital requirements

In order to calculate the initial working capital, a list of resources needed to carry out all current activities of the project was analyzed. This list included such categories of costs as:

- Administrative costs;
- Employee Compensation Fund;
- Production costs;
- Other costs.

Assumption about the discount rate

The project adopted a discount rate of 16.39% per year. Below is the rationale for calculating this rate.

The cumulative construction method is based on summing up the risk-free rate of income and risk premiums for investing in the evaluated enterprise. The method takes into account all kinds of investment risks related both to the factors common for the industry and economy, and to the specifics of the evaluated enterprise. The calculations are made according to the formula:

$$r = r_b + \sum_{i=1}^n R_i$$

where r is the discount rate; r_b is the base (risk-free or least risky) rate; R_i is the premium for the i-type of risk; n is the number of risk premiums. Let us present below the calculation according to this methodology.

Table 6.1. Determination of the cost of equity

Constituents	%
The size of the risk-free rate	10,88%
Amount of country risk adjustment	3,00%
Amount of industry risk adjustment	3,00%
Amount of other risk adjustment	2,50%
Cost of equity	19,38%

Source: Global Innovation Trade analysis and calculations

Then, based on this, the discount rate was determined.

Table 6.2. Determination of the discount rate

Constituents	%
Equity share	39,9%
Share of borrowed capital	60,1%
Tax	20,00%
Cost of equity	19,38%
Cost of borrowed capital	18,00%
Total discount rate	16,39%

Source: Global Innovation Trade analysis and calculations

Thus, the expert calculation of the discount rate was 16.39% per annum.

Assumptions about revenue, profit and loss projections (P&L) and cash flow (CFP). All of the above-mentioned measures were used to build revenue, P&L, and cash flow plans.

6.2 Nomenclature and prices

It is planned to produce self-tapping screws of different sizes at the projected plant. This will expand the range of potential customers of the company and increase revenues. The average price of the company's products is presented in the table:

Table 6.3. Nomenclature and price of the company's goods

Income items	Unit of measure	Production volume in month	Price (including VAT), \$/t
Self-tapping screws	ton	100	1164,0

Source: Global Innovation Trade data

The prices in the table are averaged over the year and are set with regard to possible changes depending on the dynamics of prices in the market and ongoing marketing campaigns.

6.3 Investment costs

The main investments of the project will be 928.236 **thousand dollars**. Capital expenditures, which will be required for the establishment of production, are shown in the table:

Table 6.4 Investment costs of the project, thousand dollars.

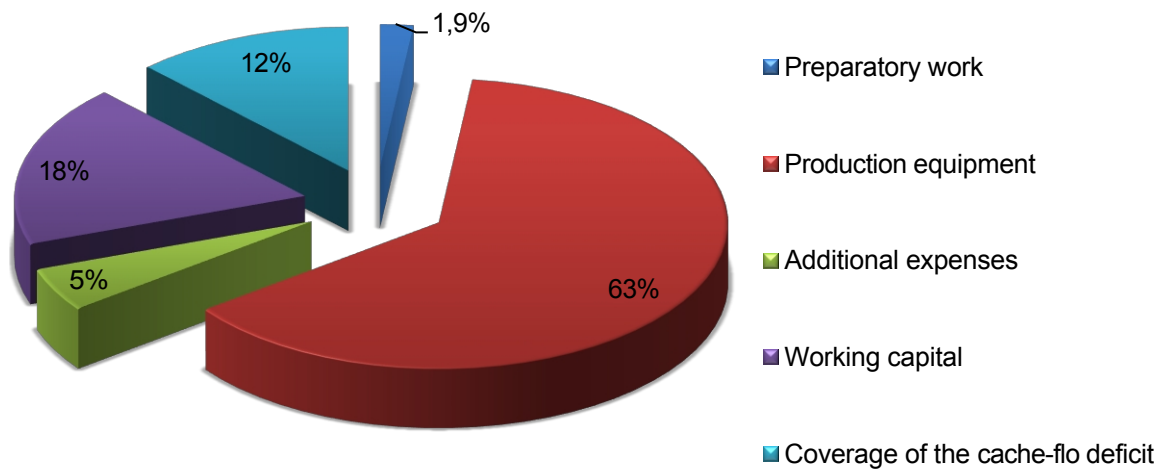
No	Capital expenditures	Qty/ %	Cost, thousand dollars.
1	Preparatory work		17,26
1.1	Justification of financial efficiency of the project	1	4,70
1.2	Production building (owned)	1	12,56
2	Production equipment		584,09
2.1	Equipment for planting self-tapping screws	1	10,31
2.2	Tooling set for machines for the production of various product sizes	3	0,94
2.3	Thread rolling machine	1	10,93
2.4	Heat treatment line for fasteners	1	249,91
2.5	Phosphating line	1	271,78
2.6	Vertical drawing machine	1	28,90
2.7	Wire sharpening machine	1	3,83
2.8	Welding machine for welding the ends of booms	1	2,81
2.9	Rotating wire winding table	1	4,69
3	Additional expenses		45,00
3.1	Loader	3	45,00

3.2	Other incidental expenses	2%	9,70
4	Working capital		168,37
4.1	Formation of a stock of raw materials and supplies	1	74,06
4.2	Formation of payroll	1	41,04
4.3	Formation stockpile of cash of cash for covering current expenses	1	53,27
Total capital costs			814,72
Coverage of the cache-flo deficit			113,51
Total investment in the project			928,23

Source: Global Innovation Trade analysis and calculations

The main item of investment costs is the purchase of production equipment - 63% of the total amount of investments.

Figure 6.1. Structure of investment costs under the project, %



Source: Global Innovation Trade analysis and calculations

Covering the cache-floor deficit was \$113,508 thousand. - This is the minimum necessary investment, which will go to pay interest on the loan and cover operating costs, while there is not yet enough revenue on the project.

6.4 Tax deductions

Table 6.5 Tax deductions, thousand dollars.

Taxes	2024	2025	2026	2027	2028
Insurance premiums	0,0	36,9	49,2	49,2	49,2
VAT	0,0	0,0	0,0	50,5	108,7
Property tax	0,2	10,0	8,9	7,8	6,7
Taxes (excluding income tax)	0,2	46,9	58,2	107,6	164,6

Taxes	2029	2030	2031	2032
Insurance premiums	49,2	49,2	49,2	49,2
VAT	108,8	108,9	109,0	109,1
Property tax	5,6	4,5	3,4	2,3
Taxes (excluding income tax)	163,6	162,6	161,7	160,7

Source: Global Innovation Trade calculations

Calculation of income tax is presented in section 6.10 of this business plan.

6.5 Operating costs (fixed and variable)

Fixed project costs are project costs that do not depend on changes in sales volume. They include, as a rule, maintenance and management costs. The main fixed costs are presented in the table:

Table 6.6 Fixed costs, thousand dollars.

No	Indicator	Calculation of costs	2025	2026	2027	2028	2029	2030	2031	2032
1	Selling expenses	1.2 thousand dollars.	10,8	14,4	14,4	14,4	14,4	14,4	14,4	14,4
2	Management expenses	0.6 thousand dollars.	5,4	7,2	7,2	7,2	7,2	7,2	7,2	7,2
3	Equipment insurance	1.5% of the cost of equipment per year	6,8	6,1	5,3	4,6	3,8	3,1	2,3	1,6
4	Personnel payroll	see <i>Personnel tab</i>	41,0	164,2	164,2	164,2	164,2	164,2	164,2	164,2
Total			64,1	191,8	191,1	190,3	189,6	188,8	188,1	187,3

Source: Global Innovation Trade analysis and calculations

The variable costs of the project are the costs that directly depend on the volume of production. Norms of consumption of raw materials and supplies for production are presented in clause 3.4 of this project:

Table 6.7 Variable costs, thousand dollars.

No	Name of costs	Calculation of costs	2025	2026	2027	2028	2029	2030	2031	2032
1	Costs of raw materials (cold drop wire)	price - \$0.2916/kg	113,7	208,5	304,7	349,9	349,9	349,9	349,9	349,9
2	Material costs for phosphating	0.09 USD/kg of finished product	35,1	64,4	94,1	108,0	108,0	108,0	108,0	108,0

3	Electricity	500 kWh, 2 shifts (16 hours), 25 days per month, tariff - 0.0726 \$/kW	50,1	100,2	147,4	174,2	174,2	174,2	174,2	174,2
4	Gas	20 m3/hour, 2 shifts (16 hours), 25 days per month, rate - 54.36 USD/1000m3	1,5	3,0	4,4	5,2	5,2	5,2	5,2	5,2
5	Packaging	1.5% of the cost of the finished product	6,0	12,0	17,7	21,0	21,0	21,0	21,0	21,0
Total			206,4	388,1	568,3	658,3	658,3	658,3	658,3	658,3

Source: Global Innovation Trade analysis and calculations

Variable costs are indexed to production and sales volume.

6.6 Calculation of the cost of production

Calculation of the cost of 1 ton of self-tapping screws is shown below:

Table 6.8. Calculation of the cost of production

Indicator	Value	Unit of measure
Variable costs	52,7	thousand dollars per month
Raw material costs (wire for cold heading)	29,2	thousand dollars per month
Material costs for phosphating	9,0	thousand dollars per month
Electricity	14,5	thousand dollars per month
Gas	0,4	thousand dollars per month
Packaging	1,7	thousand dollars per month
Fixed costs	20,4	thousand dollars per month
Selling expenses	1,2	thousand dollars per month
Management expenses	0,6	thousand dollars per month
Equipment insurance	0,3	thousand dollars per month
Personnel payroll	13,7	thousand dollars per month
Insurance premiums	4,1	thousand dollars per month
Property tax	0,5	thousand dollars per month
Total all costs	73,1	thousand dollars per month
Production volume per month.	100,0	tons
Cost per ton of self-tapping screws	731,0	dollars.
Price per 1 ton of self-tapping screws (without VAT)	986,4	dollars.
Markup	35%	%

Source: *Global Innovation Trade analysis and calculations*

Thus, the cost of 1 ton of self-tapping screws will be \$82,203.4.

The trade markup in this case will be equal to 35%.

6.7 Production and sales plan

The monthly production volume was calculated based on the production capacity of the projected plant. Below is the planned production and sales volume of the company in 2025-2032:

Table 6.9. Sales plan in 2017-2024.

Period	2025	2026	2027	2028	2029	2030	2031	2032
Self-tapping screws	345	690	1 015	1 200	1 200	1 200	1 200	1 200

Source: Global Innovation Trade analysis and calculations

Thus, the annual volume of production at the projected enterprise is 1,200 tons at 100% utilization.

6.8 Revenue Calculation

The calculation of revenue is formed on the basis of the production plan and the cost of production. The revenue plan in the first years of the project is presented in the table:

Table 6.10 Revenue plan for 2025-2032, thousand dollars.

Period	Unit of measure.	2025	2026	2027	2028	2029	2030	2031	2032
Self-tapping screws	thousand dollars.	401,6	803,2	1 181,5	1 396,8	1 396,8	1 396,8	1 396,8	1 396,8

Source: Global Innovation Trade analysis and calculations

Thus, the company's projected annual revenue will be \$1.4 million.

6.9 Profit and loss forecast

The profit and loss statement by year is shown in the table:

Table 6.11 Profit and loss statement, thous.

Income / expense item	2024	2025	2026	2027	2028	2029	2030	2031	2032
Revenue from sales	0,0	401,6	803,2	1181,5	1396,8	1396,8	1396,8	1396,8	1396,8
Variable costs	0,0	206,4	388,1	568,3	658,3	658,3	658,3	658,3	658,3
Gross profit	0,0	195,1	415,1	613,2	738,5	738,5	738,5	738,5	738,5
Fixed costs	0,0	64,1	191,8	191,1	190,3	189,6	188,8	188,1	187,3
Taxes (except income tax)	0,2	46,9	58,2	107,6	164,6	163,6	162,6	161,7	160,7
Investment costs	17,3	213,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0
EBITDA	-17,5	-129,2	165,1	314,5	383,5	385,3	387,0	388,7	390,5
EBITDA, % (to revenue) average	0%	-32%	21%	27%	27%	28%	28%	28%	28%
Depreciation of fixed assets	0,5	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0
EBIT	-18,0	-179,3	115,1	264,5	333,5	335,2	337,0	338,7	340,4
Payment of interest on loans and credits	1,8	82,8	75,8	57,8	36,3	10,9	0,0	0,0	0,0
Profit (Loss) before taxation	-19,8	-262,1	39,3	206,7	297,2	324,4	337,0	338,7	340,4
Income tax	0,0	0,0	0,0	0,0	52,3	64,9	67,4	67,7	68,1
Retained earnings	-19,8	-262,1	39,3	206,7	244,9	259,5	269,6	271,0	272,4
Retained earnings on an accrual basis	-19,8	-281,9	-242,6	-35,9	209,0	468,5	738,1	1009,0	1281,4
Return on sales	-	-45%	14%	22%	24%	24%	24%	24%	24%

Source: Global Innovation Trade analysis and calculations

6.10 Cash flow forecast

Cash flow projections by year are shown in the table below. Cash flow projections by month are shown in the appendix.

Table 6.12 Cash flow forecast, thousand USD.

	2024	2025	2026	2027	2028	2029	2030	2031	2032	TOTAL
INVESTMENT CASH FLOW (ICEF)	-192,5	-622,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	-814,7
Capital expenditures	192,5	622,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	814,7
OPERATING CASH FLOW (OPF)	-2,0	1,3	89,3	256,7	294,9	309,5	319,6	321,0	322,4	1 912,8
Revenue total	0,0	401,6	803,2	1 181,5	1 396,8	1 396,8	1 396,8	1 396,8	1 396,8	9 370,2
Expenses total	0,0	270,5	579,9	759,4	848,7	847,9	847,2	846,4	845,7	5 845,6
<i>Variable costs</i>	<i>0,0</i>	<i>206,4</i>	<i>388,1</i>	<i>568,3</i>	<i>658,3</i>	<i>658,3</i>	<i>658,3</i>	<i>658,3</i>	<i>658,3</i>	<i>4 454,5</i>
<i>Fixed costs</i>	<i>0,0</i>	<i>64,1</i>	<i>191,8</i>	<i>191,1</i>	<i>190,3</i>	<i>189,6</i>	<i>188,8</i>	<i>188,1</i>	<i>187,3</i>	<i>1 391,2</i>
Accrued taxes and payments	0,2	46,9	58,2	107,6	164,6	163,6	162,6	161,7	160,7	1 026,1
Income tax	0,0	0,0	0,0	0,0	52,3	64,9	67,4	67,7	68,1	320,3
Payments of interest on the loan	1,8	82,8	75,8	57,8	36,3	10,9	0,0	0,0	0,0	265,4
FINANCIAL CASH FLOW (FDP)	214,3	697,7	16,2	0,0	0,0	0,0	0,0	0,0	0,0	928,2
Own funds	91,6	262,1	16,2	0,0	0,0	0,0	0,0	0,0	0,0	370,0
Borrowed funds (credit)	122,7	435,6	0,0	0,0	0,0	0,0	0,0	0,0	0,0	558,2
Payment of the body of the debt	19,8	76,8	91,8	109,8	131,3	128,8	0,0	0,0	0,0	558,2
Net cash flow (NFC)	-194,5	-620,9	89,3	256,7	294,9	309,5	319,6	321,0	322,4	1 098,1
Cumulative NPD	-194,5	-815,4	-726,1	-469,4	-174,4	135,1	454,7	775,7	1 098,1	0,0
Net discounted income (NPV)	-183,2	-560,2	64,5	161,8	160,5	144,7	128,4	110,8	95,6	122,9
NPV on an accrual basis	-183,2	-743,4	-678,8	-517,0	-356,5	-211,9	-83,4	27,4	122,9	0,0

Source: Global Innovation Trade analysis and calculations



6.11 Project efficiency analysis

6.11.1 Methodology for assessing the effectiveness of the project

Performance indicators of an investment project make it possible to determine the efficiency of investment of funds in this or that project. When analyzing the effectiveness of investment projects the following indicators of investment efficiency are used: Net discounted (discounted) income (cash flow); Net present value, NPV; Payback period (period), PB; Discounted Payback period, DPB; Internal rate of return (profitability), Rate of Return, IRR (Modified Rate of Return, MIRR); Profitability index, profitability index, PI.

Net present value (commonly abbreviated as NPV) is the sum of discounted simultaneous differences between the benefits and costs of a project. - The sum of discounted simultaneous differences between benefits and costs of a project. The sum of cash flows (receipts and payments) associated with operational and investment activities, reduced (discounted) at the beginning of the investment.

Net discounted income NPV is calculated by the formula 1.

$$NPV = \sum_{t=0}^T \frac{CF_t}{(1+i)^t}$$

Where i is the discount rate;

CF_t - net cash flow of period t ; T - duration

of the project in periods.

The NPV calculation is a standard method of evaluating the effectiveness of an investment project and shows an estimate of the effect of the investment, adjusted for the present time value of money. If the NPV is greater than 0, the investment is profitable, and if the NPV is less than 0, the investment is unprofitable.

With the help of NPV can also assess the relative effectiveness of alternative investments (with the same initial investment is more profitable project with the highest NPV).

Positive qualities of NPV:

- clear criteria for decision-making
- indicator takes into account the value of money over time (using the discount factor in the formulas).

Negative qualities of NPV:

- the indicator does not take risks into account.



- does not take into account the probability of the event outcome, since all cash flows and the discount factor are predicted values.

Payback period method (PB)

Payback period (PB) - the expected period of reimbursement of the initial investment from the net cash proceeds. The time in which the revenues from the operating activities of the enterprise will exceed the costs of investment.

The payback period PB is calculated by formula 2. $PB =$

$$\text{Investments} / \text{ACF} \quad (2)$$

Where Investments is the initial investment;

ACF - Annual Cash Flow (average annual amount of net cash flow). Discounted

Payback Period (DPB) method

Discounted Payback Period (DPB) - payback period (see above), but including discounting.

The discounted payback period of DPB is calculated by formula 3.

$$DPB = t^- - \frac{NPV_{t^-}}{NPV_{t^+} - NPV_{t^-}} \quad (3)$$

Where t^- , t^+ - period when negative and positive NPV were observed. Profitability index, profitability index, profitability index, PI

The profitability index (PI) is the discounted value of cash proceeds from the project (NPV) per unit of investment. It shows the relative profitability of the project.

Profitability index PI is calculated by formula 4.

$$PI = \frac{NPV}{\text{Investments}} \quad (4)$$

PI values:

For an effective project PI must be greater than 1

Discounted cost and investment return indices are greater than 1 if the NPV is positive for that stream.

Internal rate of return (IRR)

In the case of heterogeneous cash flows, as in this project, can be applied appropriate analogue of IRR - the modified internal rate of return (MIRR).

The calculation algorithm involves several procedures. First of all, the total discounted value of all outflows and the total accrued

the value of all inflows, and both discounting and accretion are carried out at the price of the source of project financing. The accrued value of inflows is called the terminal value. Then the discount rate is determined, which equalizes the total present value of outflows and the terminal value, which in this case is the MIRR. So, the general formula for calculation is as follows:

$$\sum_{t=0}^N \frac{OF_t}{(1+r)^t} = \frac{\sum_{t=0}^M IF_t(1+r)^{n-1}}{(1+MIRR)^n} \quad (5)$$

Where OF, - cash outflow in the N-th period (in absolute value); IF, - cash inflow in the N-th period;

d - the cost of the source of funding for this project; n - the duration of the project.

Note that the formula makes sense if the terminal value exceeds the sum of discounted outflows.

6.11.2 Project performance indicators

The main financial indicators are shown in the table:

Table 6.13 Indicators of investment efficiency

Investment performance indicators	Value
Calculation period (planning horizon), months.	102
Net income (NV), thousand dollars.	1 098,1
Net discounted income (NPV), thousand dollars.	122,9
Internal rate of return (IRR), % per year	21%
Profitability index (PI), units.	1,13
Payback period (PB), months.	60
Discounted payback period (DPB), months.	86
Investments in the project, thousand dollars.	928,2
Average return on sales for the project, %	14%
Net income (cumulative), thousand dollars.	1281,379
Discount rate, %	16,39%

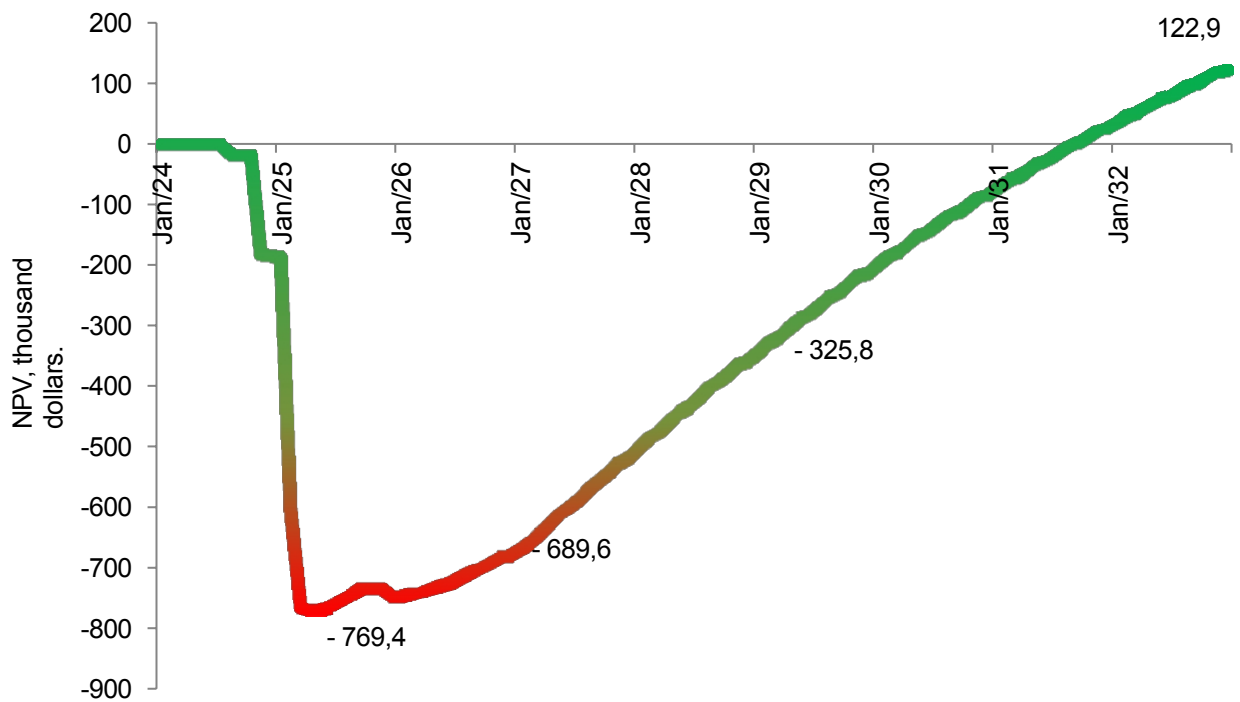
Source: Global Innovation Trade analysis and calculations

According to the study, it is clear that the project is profitable. It will pay for itself in about 5 years. Payback period, taking into account discounting will be about 86 months (7 years 2 months). The net profit of the project in 2032 will be **1.28 million dollars**.

The figure shows the NPV of the project:



Figure 6.2 Graph of the NPV of the project



Source: Global Innovation Trade analysis and calculations

On the NPV graph we see the increase in the net present value of the project by years of its implementation.

Net cash flow NPV, equal to **\$122.9 thousand** at the end of the period, shows the amount of cash the investor will receive from the project after cash inflows recoup his initial investment costs and periodic cash outflows associated with the project, taking into account the time value of money and project risks.

The internal rate of return (IRR) was 21%, which is higher than the discount rate (16.39%) - this is a good indicator for an investment project.

PI indicator equal to 1.13 units means that at the end of 2032 for each invested unit, the Investor will receive 0.13 units on top (taking into account discounting), which is a good indicator for the investment project.



7. PROJECT RISK ANALYSIS

7.1 Quantitative risk analysis

The table shows the sensitivity of the project to changes in external market conditions:

Table 7.1 Sensitivity analysis

Indicator	NPV		IRR	
Base value	122,9		21%	
Deviations	Value	%	Value	%
Reduction of selling prices by 5%	-33,83	-127,5%	15%	-27,2%
Increase in investment costs by 5%	81,31	-33,9%	19%	-7,7%
Increase in variable costs by 5%	43,82	-64,4%	18%	-12,6%
Increase in fixed costs by 5%	95,93	-22,0%	20%	-2,9%

Continued

Indicator	PI		PB	
Base value	1,13		59,6	
Deviations	Value	%	Value	%
5% decrease in selling prices	0,96	-15,2%	66,3	-11,3%
Increase in investment costs by 5%	1,09	-3,7%	61,0	-2,4%
Increase in variable costs by 5%	1,05	-7,3%	62,7	-5,2%
Increase in fixed costs by 5%	1,10	-2,9%	60,5	-1,5%

Source: Financial model calculations

*A description of the indicators in question is given in section 6.11 of this business plan.

According to the results of the analysis, there is the greatest dependence of the project on the selling price of products and the value of variable costs.



7.2 Qualitative risk analysis

Like any enterprise operating in the market, this project is under the conditions of risks. The main possible risks the probability of their realization, the degree of danger and ways to reduce the risks are shown in the table:

Table 7.2. The main risks of the project

Risk	Probability and degree of hazards. Manifestations of Negative Influence	Risk leveling tools
Production risks		
Breakdowns Process equipment failures	Probability: low Degree of danger: high Impact: stopping of production	Timely maintenance of equipment of the plant, availability of spare parts
Lack of qualified personnel, Lack of competent technologists	Probability: medium Degree of danger: medium Impact: disruption production cycle	Effective personnel policy, An attractive motivation system
Disruption supply raw materials Due to logistical problems	Probability: low Degree of danger: medium Impact: stopping of production	Logistics chain optimization, Generation of stock balances, calculation optimal delivery frequency
Market risks		
Dumping competitors' prices	Probability: medium Degree of danger: high Impact: Decrease profit companies	Reduction costs, slight decrease in product price
Decline in consumer demand (macroeconomic reasons)	Probability: low Degree of danger: high Impact: Decrease profit companies	Increase number of advertising campaigns, holding of promotions
Financial risks		
Delayed payments from consumers	Probability: medium Degree of danger: medium Impact: lack of working capital company resource	Tracking payment schedule for delivered products, control upholding commitments
Shortage of working capital in	Probability: medium	Planning expenses



Risk	Probability and degree of hazards. Manifestations of Negative Influence	Risk leveling tools
investment phase companies	Hazard level: medium Impact: "freezing" the project	of cash receipts in investment phase of the project
Foreign exchange risk at purchase of equipment	Probability: high Degree of danger: medium Impact: increase investment costs	If currencies become more expensive, the amount of investment in technological equipment.

Source: Global Innovation Trade analysis

7.3 Project break-even point

The break-even point determines what the volume of sales should be in order for the company to work break-even, could cover all its costs without making a profit.

To calculate the breakeven point, you must divide the costs into three components:

- Variable costs - increasing in proportion to the increase in production (volume of services);
- Fixed costs - does not depend on the number of services rendered (goods sold) and whether the volume of operations is increasing or decreasing;
- Personnel payroll;
- Tax payments.

The calculation of the break-even point is shown in the table:

Table 7.3. Calculation of break-even point, USD

Production load, %	40%	50%	60%	70%	80%	90%	100%
Revenue from products, thousand dollars per month	46,1	57,8	69,6	81,3	93,0	104,7	116,4
Variable costs, thousand dollars.	21,7	27,3	32,8	38,3	43,8	49,3	54,9
Fixed costs, thousand dollars.	15,6	15,6	15,6	15,6	15,6	15,6	15,6
Loan payments, thousand dollars.	14,0	14,0	14,0	14,0	14,0	14,0	14,0

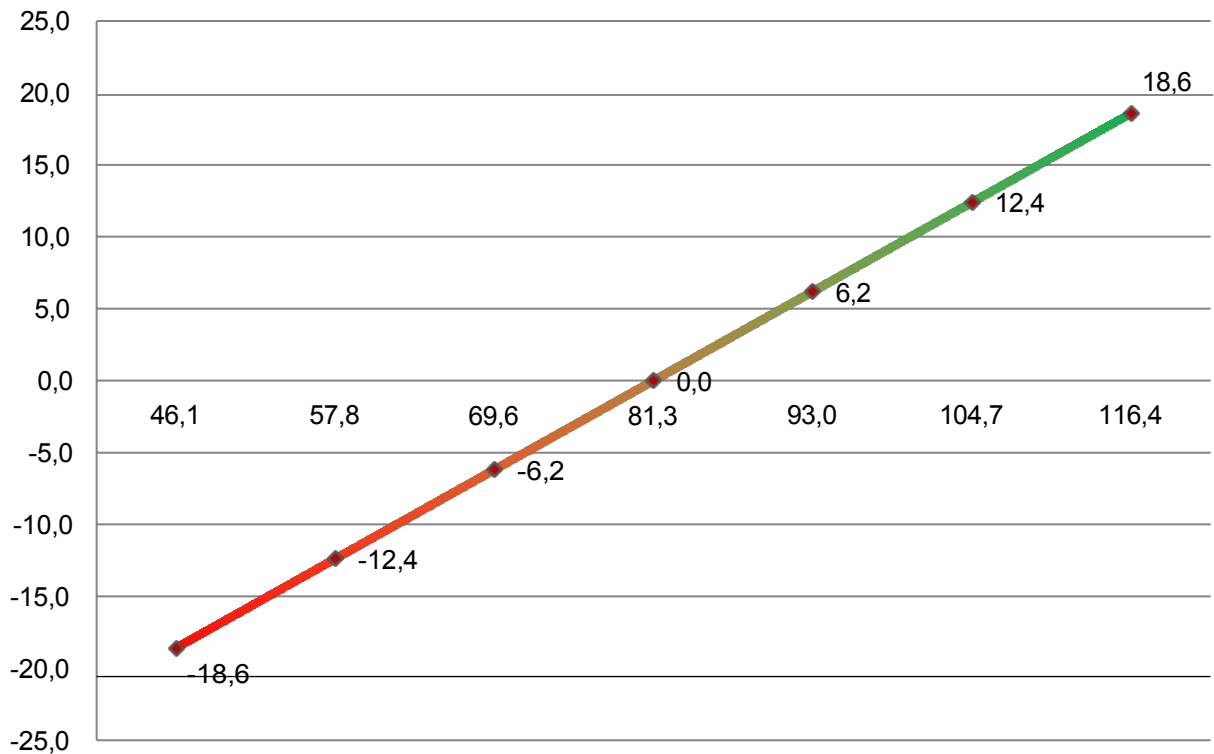


Taxes (other than income tax), \$ ths.	13,4	13,4	13,4	13,4	13,4	13,4	13,4
Total expenses	64,7	70,2	75,7	81,3	86,8	92,3	97,8
Profit	-18,6	-12,4	-6,2	0,0	6,2	12,4	18,6

Source: Global Innovation Trade analysis and calculations

For this company, the break-even point chart will look as follows:

Figure 7.1 Break-even point chart



Source: Global Innovation Trade analysis and calculations

The break-even point is of great importance for the viability of a company and its solvency. Thus, the degree to which sales volumes exceed the break-even point determines the company's financial strength (margin of safety).

The break-even point chart shows that the company must sell at least **\$81,300** worth of products **per month**, which corresponds to 70% of its production load.

8. APPLICATIONS

8.1 Cash flow statement (by month), thousand dollars

	2024											
	Jan.24	Feb.24	mar.24	Apr.24	May.24	Jun.24	July 24	Aug. 24	sen.24	Oct. 24	Nov.24	Dec. 24
INVESTMENT CASH FLOW (ICEF)	0	0	0	0	0	0	0	-17,3	0,0	0,0	-175,2	0,0
Capital expenditures	0	0	0	0	0	0	0	17,3	0,0	0,0	175,2	0,0
OPERATING CASH FLOW (OPF)	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	-2,0
Revenue total	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
Expenses total	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
<i>Variable costs</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>
<i>Fixed costs</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>
Accrued taxes and payments	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,2
Income tax	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
Payments of interest on the loan	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	1,8
FINANCIAL CASH FLOW (FDP)	0	0	0	0	0	0	0	17,3	0,0	0,0	189,2	7,8
Own funds	0	0	0	0	0	0	0	17,3	0,0	0,0	66,5	7,8
Borrowed funds (credit)	0	0	0	0	0	0	0	0,0	0,0	0,0	122,7	0,0
Payment of the body of the debt	0	0	0	0	0	0	0	0,0	0,0	0,0	14,0	5,8
Net cash flow (NFC)	0	0	0	0	0	0	0	-17,3	0,0	0,0	-175,2	-2,0
Cumulative NPD	0	0	0	0	0	0	0	-17,3	-17,3	-17,3	-192,5	-194,5
Cash balance at the beginning of the period	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
Cash balance at the end of the period	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
Net discounted income (NPV)	0	0	0	0	0	0	0	-16,8	0,0	0,0	-164,5	-1,9
NPV on an accrual basis	0	0	0	0	0	0	0	-16,8	-16,8	-16,8	-181,3	-183,2

	2025											
	Jan.25	fev.25	mar.25	Apr. 25	May.25	Jun 25	July 25	Aug. 25	sen.25	Oct. 25	Nov. 25	Dec. 25
INVESTMENT CASH FLOW (ICEF)	0,0	-453,9	-168,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	0,0	453,9	168,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	-1,8	-6,3	-15,5	-5,2	2,9	6,1	11,2	9,4	14,5	0,9	1,0	-15,8
Revenue total	0,0	0,0	0,0	23,3	34,9	40,7	46,6	46,6	52,4	52,4	52,4	52,4
Expenses total	0,0	0,0	7,6	16,6	20,2	22,9	23,7	25,7	26,5	40,2	40,2	47,0
<i>Variable costs</i>	<i>0,0</i>	<i>0,0</i>	<i>7,6</i>	<i>14,8</i>	<i>18,4</i>	<i>21,1</i>	<i>21,9</i>	<i>23,9</i>	<i>24,7</i>	<i>24,7</i>	<i>24,7</i>	<i>24,7</i>
<i>Fixed costs</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>	<i>1,8</i>	<i>1,8</i>	<i>1,8</i>	<i>1,8</i>	<i>1,8</i>	<i>1,8</i>	<i>15,5</i>	<i>15,5</i>	<i>22,3</i>
Accrued taxes and payments	0,0	0,0	0,0	4,1	4,1	4,1	4,1	4,1	4,1	4,1	4,1	14,1
Income tax	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payments of interest on the loan	1,8	6,3	7,9	7,8	7,7	7,6	7,5	7,4	7,3	7,2	7,1	7,0
FINANCIAL CASH FLOW (FDP)	7,7	466,1	190,0	11,4	3,3	0,2	0,0	0,0	0,0	0,0	0,0	19,0
Own funds	7,7	148,4	72,1	11,4	3,3	0,2	0,0	0,0	0,0	0,0	0,0	19,0
Borrowed funds (credit)	0,0	317,7	117,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payment of the body of the debt	5,9	6,0	6,1	6,2	6,3	6,3	6,4	6,5	6,6	6,7	6,8	6,9
Net cash flow (NFC)	-1,8	-460,2	-183,9	-5,2	2,9	6,1	11,2	9,4	14,5	0,9	1,0	-15,8
Cumulative NPD	-196,3	-656,4	-840,3	-845,6	-842,6	-836,5	-825,3	-816,0	-801,5	-800,6	-799,7	-815,4
Cash balance at the beginning of the period	0,0	0,0	0,0	0,0	0,0	0,0	0,0	4,8	7,6	15,4	9,6	3,7
Cash balance at the end of the period	0,0	0,0	0,0	0,0	0,0	0,0	4,8	7,6	15,4	9,6	3,7	0,0
Net discounted income (NPV)	-1,6	-415,9	-164,1	-4,6	2,6	5,2	9,5	7,9	12,0	0,7	0,8	-12,6
NPV on an accrual basis	-184,8	-600,7	-764,8	-769,4	-766,9	-761,6	-752,1	-744,3	-732,3	-731,6	-730,8	-743,4

	2026											
	Jan.26	Feb.26	mar.26	Apr.26	May.26	Jun 26	July 26.	Aug 26	sen.26	Oct. 26	Nov. 26	Dec. 26
INVESTMENT CASH FLOW (ICEF)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	-0,7	4,4	2,6	7,7	7,8	6,0	11,1	11,2	9,4	14,5	12,7	2,8
Revenue total	52,4	58,2	58,2	64,0	64,0	64,0	69,8	69,8	69,8	75,7	75,7	81,5
Expenses total	42,1	42,9	44,8	45,7	45,7	47,6	48,4	48,4	50,3	51,1	53,0	60,0
<i>Variable costs</i>	<i>26,6</i>	<i>27,4</i>	<i>29,3</i>	<i>30,2</i>	<i>30,2</i>	<i>32,1</i>	<i>32,9</i>	<i>32,9</i>	<i>34,8</i>	<i>35,7</i>	<i>37,6</i>	<i>38,4</i>
<i>Fixed costs</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>21,6</i>
Accrued taxes and payments	4,1	4,1	4,1	4,1	4,1	4,1	4,1	4,1	4,1	4,1	4,1	13,0
Income tax	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payments of interest on the loan	6,9	6,8	6,7	6,6	6,5	6,4	6,3	6,2	6,0	5,9	5,8	5,7
FINANCIAL CASH FLOW (FDP)	7,8	2,8	4,7	0,0	0,0	1,0	0,0	0,0	0,0	0,0	0,0	0,0
Own funds	7,8	2,8	4,7	0,0	0,0	1,0	0,0	0,0	0,0	0,0	0,0	0,0
Borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payment of the body of the debt	7,0	7,1	7,3	7,4	7,5	7,6	7,7	7,8	7,9	8,1	8,2	8,3
Net cash flow (NFC)	-0,7	4,4	2,6	7,7	7,8	6,0	11,1	11,2	9,4	14,5	12,7	2,8
Cumulative NPD	-816,1	-811,8	-809,2	-801,5	-793,8	-787,8	-776,7	-765,5	-756,1	-741,6	-728,9	-726,1
Cash balance at the beginning of the period	0,0	0,0	0,0	0,0	0,3	0,6	0,0	3,4	6,8	8,2	14,7	19,2
Cash balance at the end of the period	0,0	0,0	0,0	0,3	0,6	0,0	3,4	6,8	8,2	14,7	19,2	13,8
Net discounted income (NPV)	-0,6	3,4	2,0	5,8	5,8	4,4	8,1	8,1	6,7	10,2	8,8	1,9
NPV on an accrual basis	-743,9	-740,6	-738,6	-732,8	-727,0	-722,6	-714,5	-706,4	-699,8	-689,6	-680,8	-678,8

	2027											
	Jan.27	fev.27	mar.27	Apr.27	May.27	Jun.27	July 27.	Aug. 27	sen.27	Oct. 27	Nov.27	Dec. 27
INVESTMENT CASH FLOW (ICEF)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	17,9	14,3	24,4	24,5	24,6	19,5	22,9	23,0	21,5	25,9	26,0	12,2
Revenue total	81,5	81,5	93,1	93,1	93,1	93,1	104,8	104,8	104,8	110,6	110,6	110,6
Expenses total	53,9	57,7	59,4	59,4	59,4	63,2	64,9	64,9	66,8	67,6	67,6	74,8
<i>Variable costs</i>	<i>38,4</i>	<i>42,2</i>	<i>43,9</i>	<i>43,9</i>	<i>43,9</i>	<i>47,7</i>	<i>49,4</i>	<i>49,4</i>	<i>51,3</i>	<i>52,1</i>	<i>52,1</i>	<i>54,0</i>
<i>Fixed costs</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>20,8</i>
Accrued taxes and payments	4,1	4,1	4,1	4,1	4,1	5,5	12,3	12,3	12,0	12,7	12,7	19,5
Income tax	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payments of interest on the loan	5,5	5,4	5,3	5,2	5,0	4,9	4,8	4,6	4,5	4,3	4,2	4,0
FINANCIAL CASH FLOW (FDP)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Own funds	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payment of the body of the debt	8,4	8,5	8,7	8,8	8,9	9,1	9,2	9,3	9,5	9,6	9,8	9,9
Net cash flow (NFC)	17,9	14,3	24,4	24,5	24,6	19,5	22,9	23,0	21,5	25,9	26,0	12,2
Cumulative NPD	-708,1	-693,9	-669,5	-645,1	-620,4	-600,9	-578,1	-555,1	-533,5	-507,7	-481,6	-469,4
Cash balance at the beginning of the period	13,8	23,3	29,0	44,7	60,4	76,0	86,5	100,1	113,8	125,8	142,1	158,4
Cash balance at the end of the period	23,3	29,0	44,7	60,4	76,0	86,5	100,1	113,8	125,8	142,1	158,4	160,7
Net discounted income (NPV)	12,1	9,5	16,0	15,9	15,8	12,4	14,3	14,2	13,1	15,6	15,5	7,2
NPV on an accrual basis	-666,7	-657,2	-641,1	-625,2	-609,4	-597,0	-582,7	-568,5	-555,3	-539,7	-524,2	-517,0

	2028											
	Jan.28	Feb.28	mar.28	Apr.28	May.28	Jun.28	July 28.	Aug.28	sen.28	Oct. 28	Nov.28	Dec. 28
INVESTMENT CASH FLOW (ICEF)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	28,9	29,1	16,2	29,4	29,6	16,7	29,9	30,0	17,2	30,4	30,6	7,1
Revenue total	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4
Expenses total	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	74,9
<i>Variable costs</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>
<i>Fixed costs</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>20,1</i>
Accrued taxes and payments	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	19,2
Income tax	0,0	0,0	13,1	0,0	0,0	13,1	0,0	0,0	13,1	0,0	0,0	13,1
Payments of interest on the loan	3,9	3,7	3,6	3,4	3,3	3,1	3,0	2,8	2,6	2,5	2,3	2,1
FINANCIAL CASH FLOW (FDP)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Own funds	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payment of the body of the debt	10,1	10,2	10,4	10,5	10,7	10,8	11,0	11,2	11,3	11,5	11,7	11,9
Net cash flow (NFC)	28,9	29,1	16,2	29,4	29,6	16,7	29,9	30,0	17,2	30,4	30,6	7,1
Cumulative NPD	-440,4	-411,3	-395,2	-365,7	-336,2	-319,5	-289,7	-259,6	-242,5	-212,1	-181,5	-174,4
Cash balance at the beginning of the period	160,7	179,6	198,4	204,3	223,1	242,0	247,8	266,7	285,6	291,4	310,3	329,2
Cash balance at the end of the period	179,6	198,4	204,3	223,1	242,0	247,8	266,7	285,6	291,4	310,3	329,2	324,4
Net discounted income (NPV)	16,8	16,7	9,2	16,4	16,3	9,1	16,1	16,0	9,0	15,7	15,6	3,6
NPV on an accrual basis	-500,2	-483,5	-474,4	-457,9	-441,6	-432,6	-416,5	-400,5	-391,5	-375,8	-360,1	-356,5

	2029											
	Jan.29	fev.29	mar.29	Apr.29	May.29	June 29	July 29.	Aug. 29	sen.29	Oct. 29	Nov. 29	Dec. 29
INVESTMENT CASH FLOW (ICEF)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	30,9	31,1	15,1	31,5	31,6	15,6	32,0	32,2	16,2	32,6	32,8	7,8
Revenue total	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4
Expenses total	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	74,2
<i>Variable costs</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>
<i>Fixed costs</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>19,3</i>
Accrued taxes and payments	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	18,2
Income tax	0,0	0,0	16,2	0,0	0,0	16,2	0,0	0,0	16,2	0,0	0,0	16,2
Payments of interest on the loan	1,9	1,8	1,6	1,4	1,2	1,0	0,8	0,6	0,4	0,2	0,0	0,0
FINANCIAL CASH FLOW (FDP)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Own funds	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payment of the body of the debt	12,0	12,2	12,4	12,6	12,8	13,0	13,2	13,4	13,6	13,8	0,0	0,0
Net cash flow (NFC)	30,9	31,1	15,1	31,5	31,6	15,6	32,0	32,2	16,2	32,6	32,8	7,8
Cumulative NPD	-143,5	-112,4	-97,4	-65,9	-34,3	-18,6	13,4	45,6	61,8	94,5	127,3	135,1
Cash balance at the beginning of the period	324,4	343,3	362,1	364,8	383,7	402,5	405,2	424,1	443,0	445,6	464,5	497,3
Cash balance at the end of the period	343,3	362,1	364,8	383,7	402,5	405,2	424,1	443,0	445,6	464,5	497,3	505,1
Net discounted income (NPV)	15,4	15,3	7,3	15,1	15,0	7,3	14,8	14,7	7,3	14,5	14,4	3,4
NPV on an accrual basis	-341,1	-325,8	-318,5	-303,4	-288,4	-281,1	-266,2	-251,5	-244,2	-229,7	-215,3	-211,9

	2030											
	Jan.30	fev.30	mar.30	Apr. 30	May.30	Jun 30	July 30	Aug 30	sen.30	Oct. 30	Nov. 30	Dec. 30
INVESTMENT CASH FLOW (ICEF)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	32,8	32,8	16,0	32,8	32,8	16,0	32,8	32,8	16,0	32,8	32,8	8,9
Revenue total	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4
Expenses total	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	73,4
<i>Variable costs</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>
<i>Fixed costs</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>18,6</i>
Accrued taxes and payments	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	17,3
Income tax	0,0	0,0	16,8	0,0	0,0	16,8	0,0	0,0	16,8	0,0	0,0	16,8
Payments of interest on the loan	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
FINANCIAL CASH FLOW (FDP)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Own funds	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payment of the body of the debt	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Net cash flow (NFC)	32,8	32,8	16,0	32,8	32,8	16,0	32,8	32,8	16,0	32,8	32,8	8,9
Cumulative NPD	167,9	200,8	216,8	249,6	282,5	298,5	331,3	364,1	380,1	413,0	445,8	454,7
Cash balance at the beginning of the period	505,1	538,0	570,8	586,8	619,6	652,5	668,5	701,3	734,2	750,1	783,0	815,8
Cash balance at the end of the period	538,0	570,8	586,8	619,6	652,5	668,5	701,3	734,2	750,1	783,0	815,8	824,7
Net discounted income (NPV)	14,1	13,9	6,7	13,6	13,4	6,4	13,0	12,9	6,2	12,6	12,4	3,3
NPV on an accrual basis	-197,8	-183,9	-177,2	-163,7	-150,3	-143,8	-130,8	-117,9	-111,7	-99,2	-86,7	-83,4

	2031											
	Jan.31	Feb.31	mar.31	Apr.31	May.31	Jun.31	July 31	Aug. 31	sen.31	Oct.31	Nov.31	Dec. 31
INVESTMENT CASH FLOW (ICEF)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	32,8	32,8	15,9	32,8	32,8	15,9	32,8	32,8	15,9	32,8	32,8	10,5
Revenue total	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4
Expenses total	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	72,7
<i>Variable costs</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>
<i>Fixed costs</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>17,8</i>
Accrued taxes and payments	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	16,3
Income tax	0,0	0,0	16,9	0,0	0,0	16,9	0,0	0,0	16,9	0,0	0,0	16,9
Payments of interest on the loan	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
FINANCIAL CASH FLOW (FDP)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Own funds	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payment of the body of the debt	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Net cash flow (NFC)	32,8	32,8	15,9	32,8	32,8	15,9	32,8	32,8	15,9	32,8	32,8	10,5
Cumulative NPD	487,5	520,4	536,3	569,1	602,0	617,9	650,7	683,6	699,5	732,3	765,2	775,7
Cash balance at the beginning of the period	824,7	857,6	890,4	906,3	939,1	972,0	987,9	1020,7	1053,6	1069,5	1102,3	1135,2
Cash balance at the end of the period	857,6	890,4	906,3	939,1	972,0	987,9	1020,7	1053,6	1069,5	1102,3	1135,2	1145,7
Net discounted income (NPV)	12,1	11,9	5,7	11,6	11,5	5,5	11,2	11,1	5,3	10,8	10,7	3,4
NPV on an accrual basis	-71,3	-59,4	-53,7	-42,0	-30,5	-25,0	-13,8	-2,8	2,5	13,3	24,0	27,4

	2032											
	Jan.32	fev.32	mar.32	Apr.32	May.32	Jun.32	July 32	Aug.32	sen.32	Oct. 32	Nov.32	Dec. 32
INVESTMENT CASH FLOW (ICEF)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	32,8	32,8	15,8	32,8	32,8	15,8	32,8	32,8	15,8	32,8	32,8	12,2
Revenue total	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4	116,4
Expenses total	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	70,3	71,9
<i>Variable costs</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>	<i>54,9</i>
<i>Fixed costs</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>15,5</i>	<i>17,1</i>
Accrued taxes and payments	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	13,2	15,3
Income tax	0,0	0,0	17,0	0,0	0,0	17,0	0,0	0,0	17,0	0,0	0,0	17,0
Payments of interest on the loan	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
FINANCIAL CASH FLOW (FDP)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Own funds	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Borrowed funds (credit)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Payment of the body of the debt	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Net cash flow (NFC)	32,8	32,8	15,8	32,8	32,8	15,8	32,8	32,8	15,8	32,8	32,8	12,2
Cumulative NPD	808,5	841,4	857,2	890,0	922,9	938,7	971,5	1 004,4	1 020,2	1 053,0	1 085,9	1 098,1
Cash balance at the beginning of the period	1 145,7	1 178,5	1 211,4	1 227,2	1 260,1	1 292,9	1 308,7	1 341,6	1 374,4	1 390,2	1 423,1	1 455,9
Cash balance at the end of the period	1 178,5	1 211,4	1 227,2	1 260,1	1 292,9	1 308,7	1 341,6	1 374,4	1 390,2	1 423,1	1 455,9	1 468,1
Net discounted income (NPV)	10,4	10,3	4,9	10,0	9,9	4,7	9,6	9,5	4,5	9,3	9,2	3,4
NPV on an accrual basis	37,8	48,0	52,9	62,9	72,8	77,5	87,1	96,6	101,2	110,4	119,6	122,9



Information about the performer of the project

Business plan "Organization of self-tapping production" was made by the research agency "**Global Innovation Trade**". All our specialists have impressive experience in developing business plans, supported by deep knowledge in various areas of economics and business, the presence of a strong information base, knowledge of the most advanced approaches to business organization, knowledge of the latest methods of calculation and their competent adaptation to the specifics of the region or a particular industry.