

# **Business plan**

## Organization of the enterprise for the production of frame and panel wooden houses



***June, 2023***

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## **Methodological comments on the business plan**

This business plan is a draft of the implementation of business operations, actions of the firm, containing information about the firm, the product, its production, the organization of operations and their effectiveness. The planning period is 2024-2030.

### **The object and subject of research and business planning**

The object of the study is the opening of the production of frame-panel wooden houses on European technology.

### **Goals and objectives of the business plan**

The purpose of business planning: to assess the economic efficiency of the opening of the production of frame-panel wooden houses.

The challenges of business planning:

- Assessment of the economic efficiency of the project;
- Justification of investment funds for the implementation of the project;
- Planning the business operations of the future company and financial forecasting of activities.

### **Sources of information**

- Database of state statistical bodies;
- Industry Statistics;
- Specialized databases of the Global Innovation Trade Agency;
- Ratings;
- Information resources of market participants;
- Industry and specialized information portals;
- Regional media;
- Portals of information disclosure (reporting of public companies);
- Surveys of major market participants.

### **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.

**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 incurred by a third party as a result of the use of the information in this business plan.

## 1. PROJECT SUMMARY

In the proposed project is the organization of the production of frame-panel wooden houses on the European technology.

The stages of the project are shown in Table 1:

**Table 1. Project implementation schedule**

Project Stage	Beginning works	Duration days	End of job
Rationale and defense of investment of the project, and the management decision	01.04.2024	30	30.04.2024
Start construction work, prepare equipment, recruit staff, prepare tooling, etc.	01.05.2024	183	30.11.2024
<b>Running the plant</b>	<b>01.12.2024</b>	<b>30</b>	<b>01.01.2025</b>

Source: Global Innovation Trade analysis and calculations

### Investments

The volume of investment in the implementation of the project - **447.0 thousand dollars**. The main financial indicators of the project are presented in Table 2:

**Table 2. Key financial indicators of the project**

Investment performance indicators	
Calculation period (planning horizon), months.	81
Net income (NV), thousand dollars.	1 810,5
Net discounted income (NPV), thousand dollars.	1 276,3
Internal rate of return (IRR), % per year	73%
Profitability index (PI), units.	3,80
Payback period (PB), months.	28,9
Discounted payback period (DPB), months.	30,3
Investments in the project, thousand dollars.	456,4
Average return on sales for the project, %	14%



Investment performance indicators	
Net income (cumulative), thousand dollars.	2 490,8
Discount rate, %	7,29%

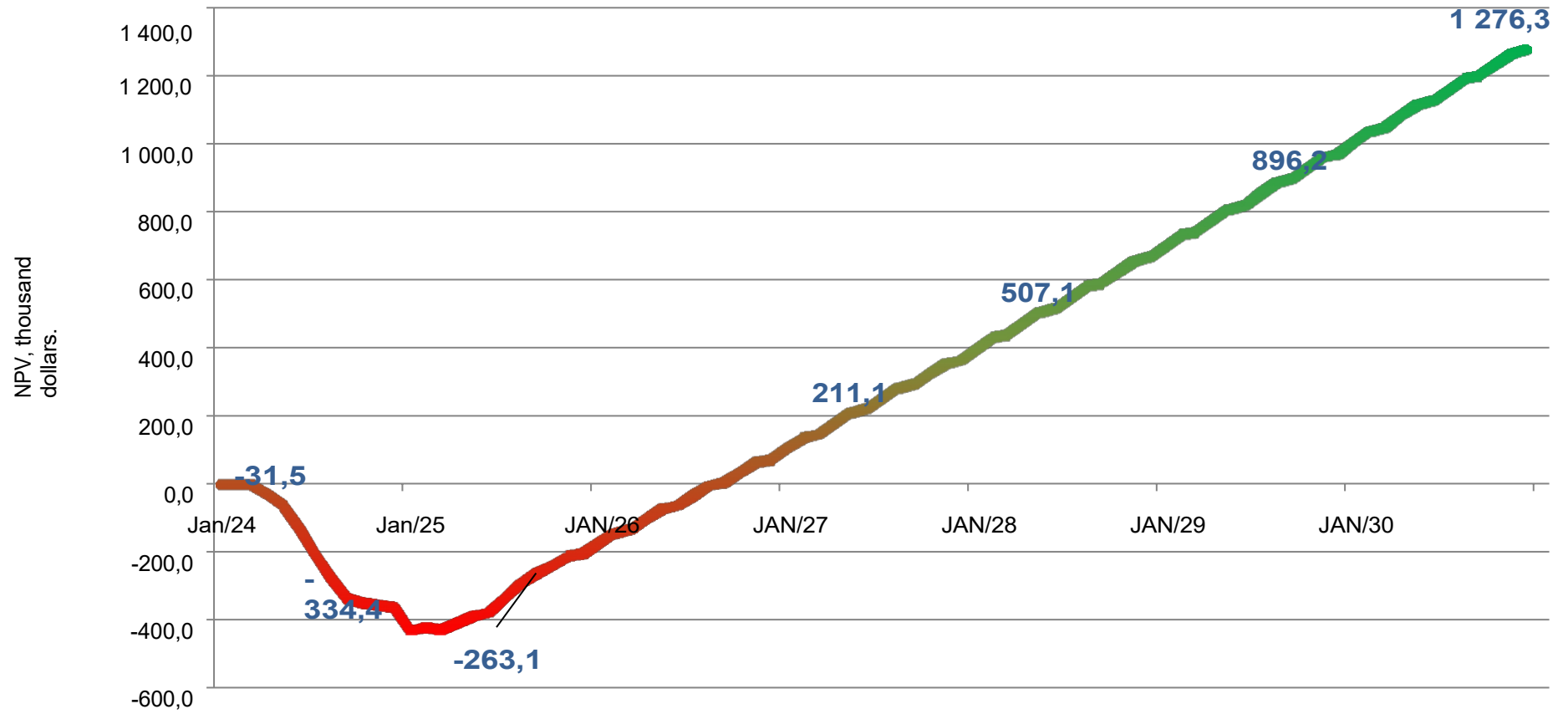
\* The definition of financial indicators is presented in section 6.11 of this business plan

Source: Global Innovation Trade calculations

According to the data presented, it is clear that the project is very profitable. It will pay off in 2.41 years after the start of the project. The payback period, taking into account the discounting will also be 2.53 years.

Figure 1 shows a graph of the NPV of the project by years of its implementation:

Figure 1: Graph of the NPV of the project



Source: Global Innovation Trade calculations

## 2. ESSENCE OF THE PROPOSED PROJECT

### 2.1. Description of the plant project and anticipated products

This project considers the issue of investment in order to open the production of frame-panel wooden houses on European technology.

The project plans to organize the production of factory-made sets of structures for residential and public buildings (walls, partitions, floors) on the basis of panel-frame technology: the basis of structures is a wooden frame of beams, covered on both sides with plate and sheet material.

The products of the plant are panels of 95% readiness for the construction of individual and apartment (up to three floors) houses.

Figure 2. The main elements of the planned production of frame-panel wooden houses



Source: Global Innovation Trade data

## 2.2 Project Location

The production site is located in Kashkadarya region, Kamashi district at the following address: Oinakul 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 road.

The population of the Kashkadarya region as of 2023 is 3.5 million people, and the population of the Kamashi district is 286,000.

Figure 3: Location on the map



Source: Yandex.map

Figure 4 Overview scheme of land plots in the territory of Kamashi district

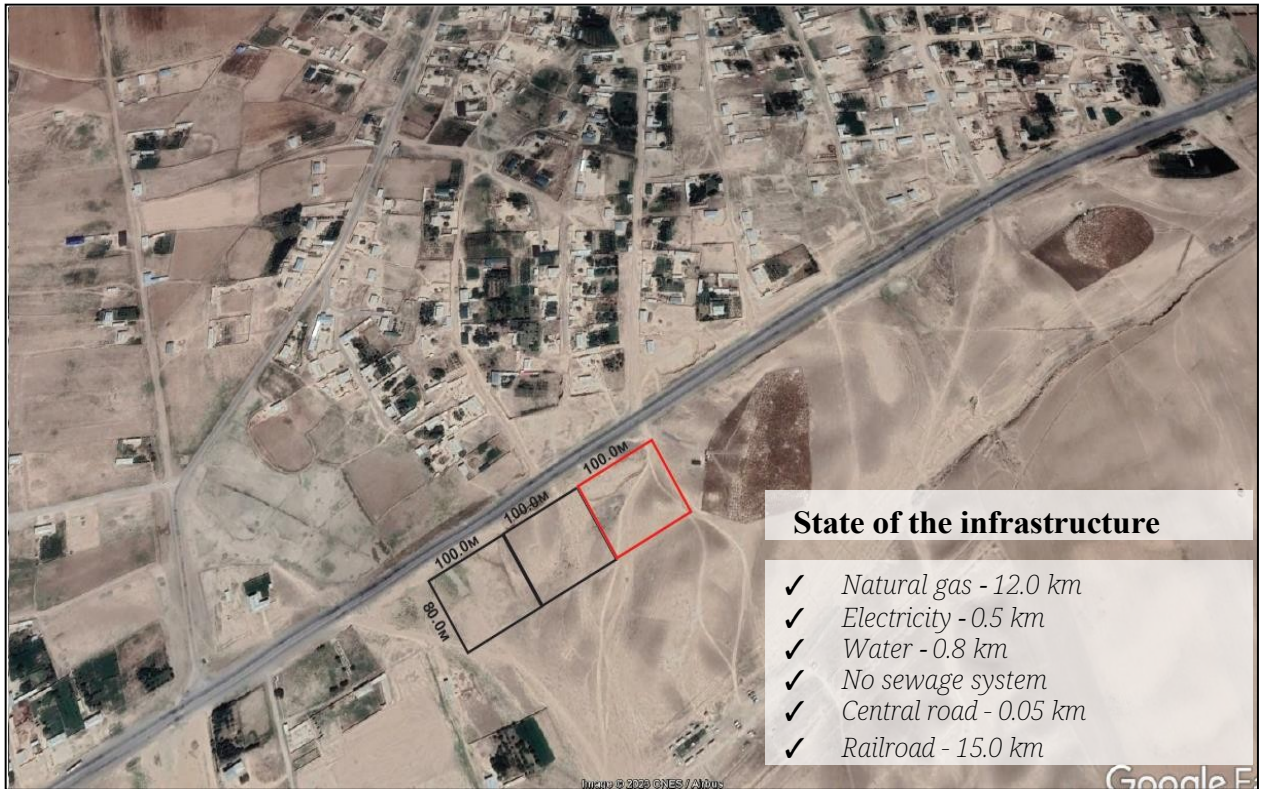
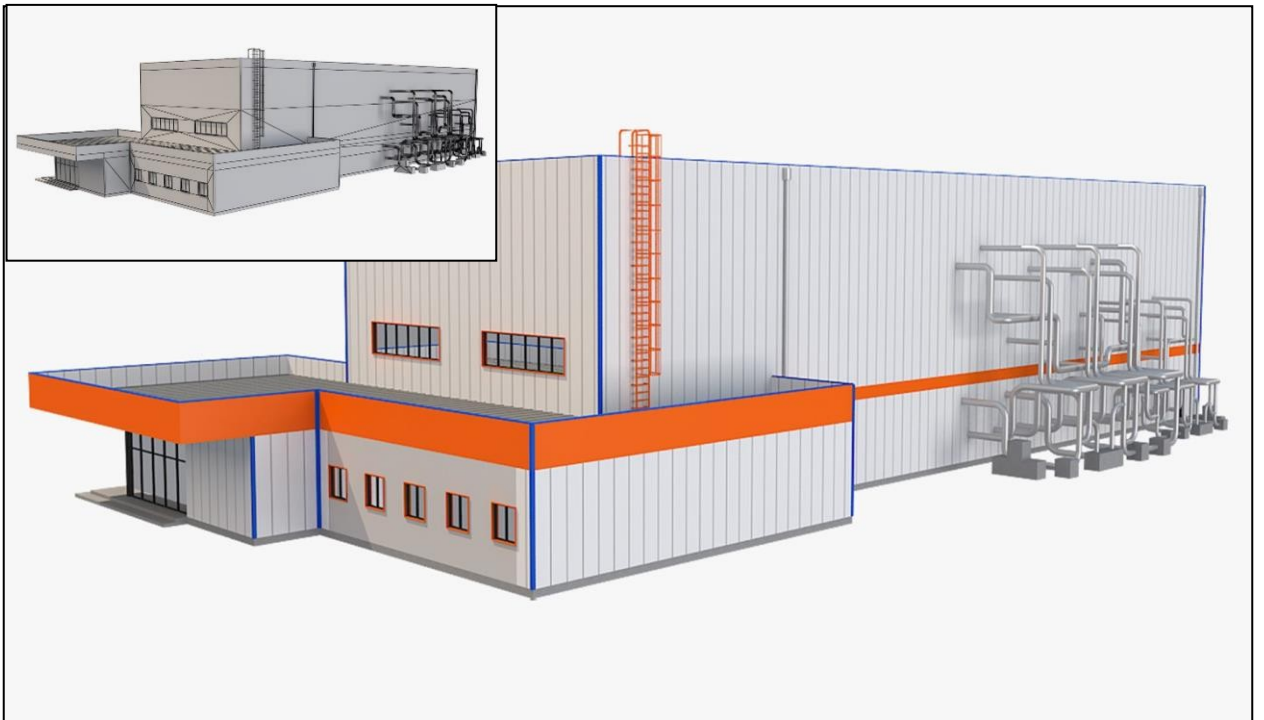
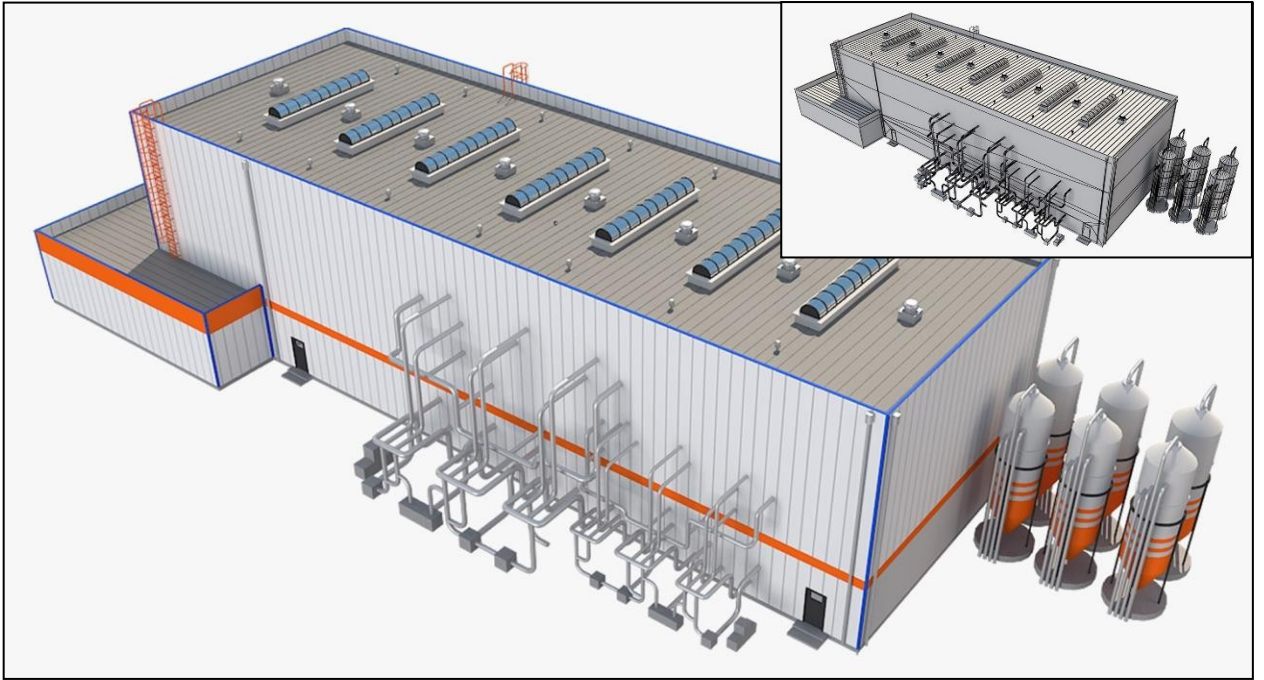
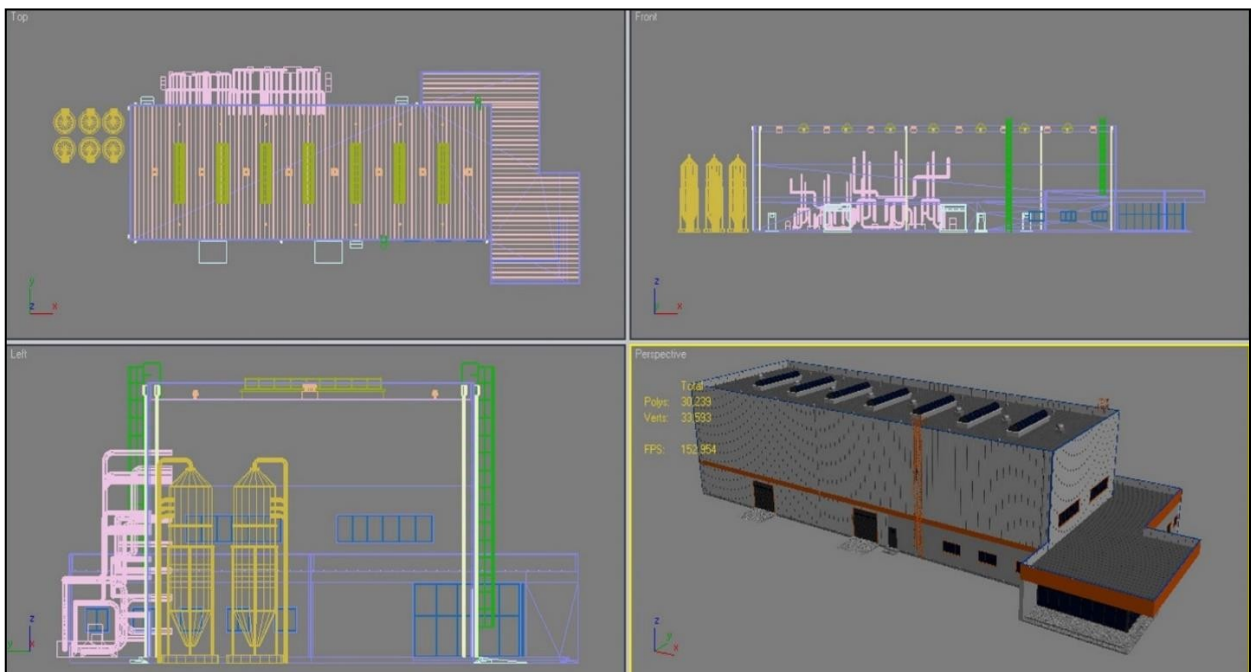
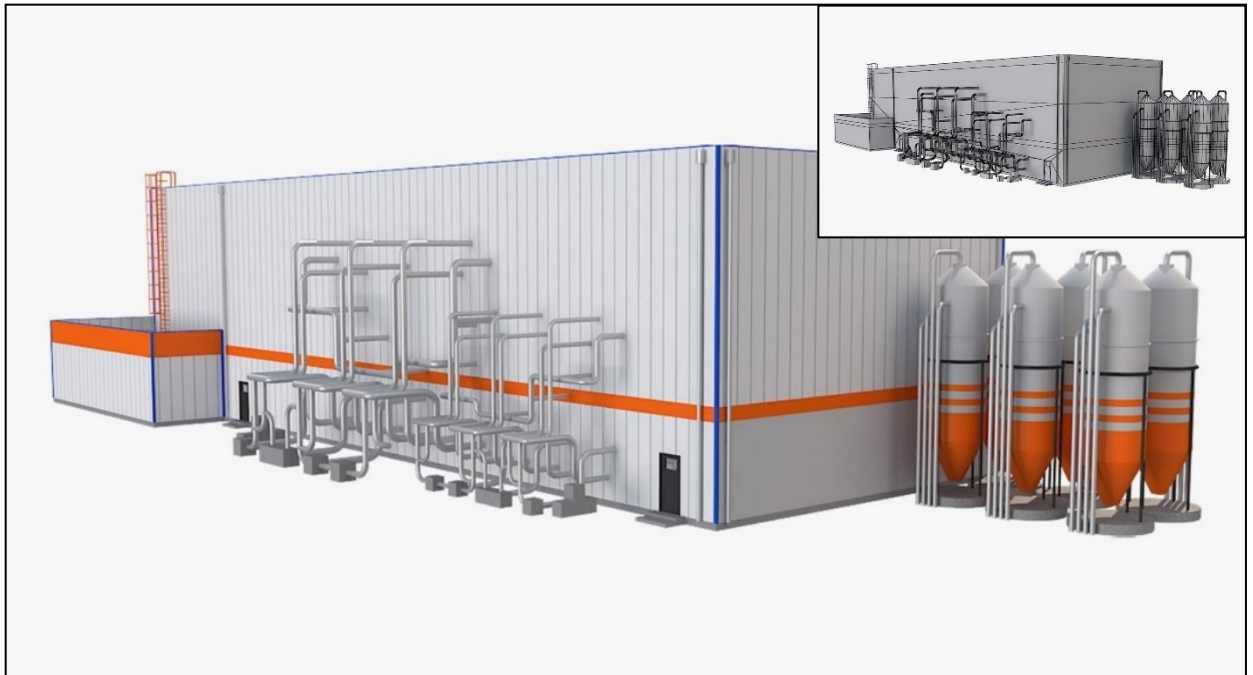


Figure 5 Production building

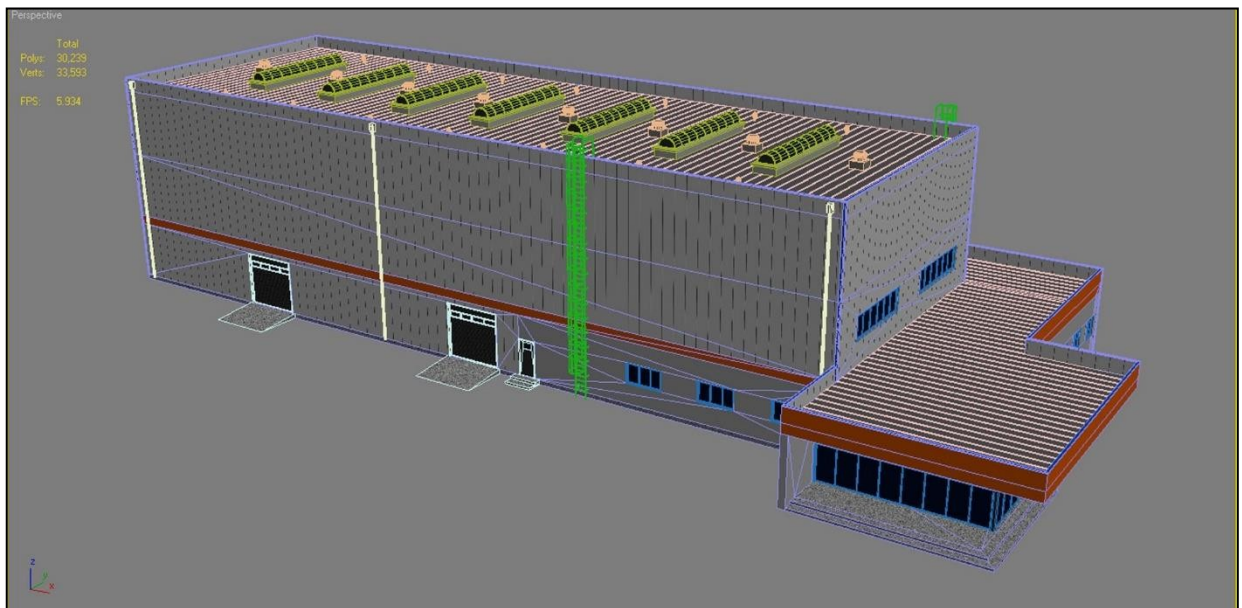
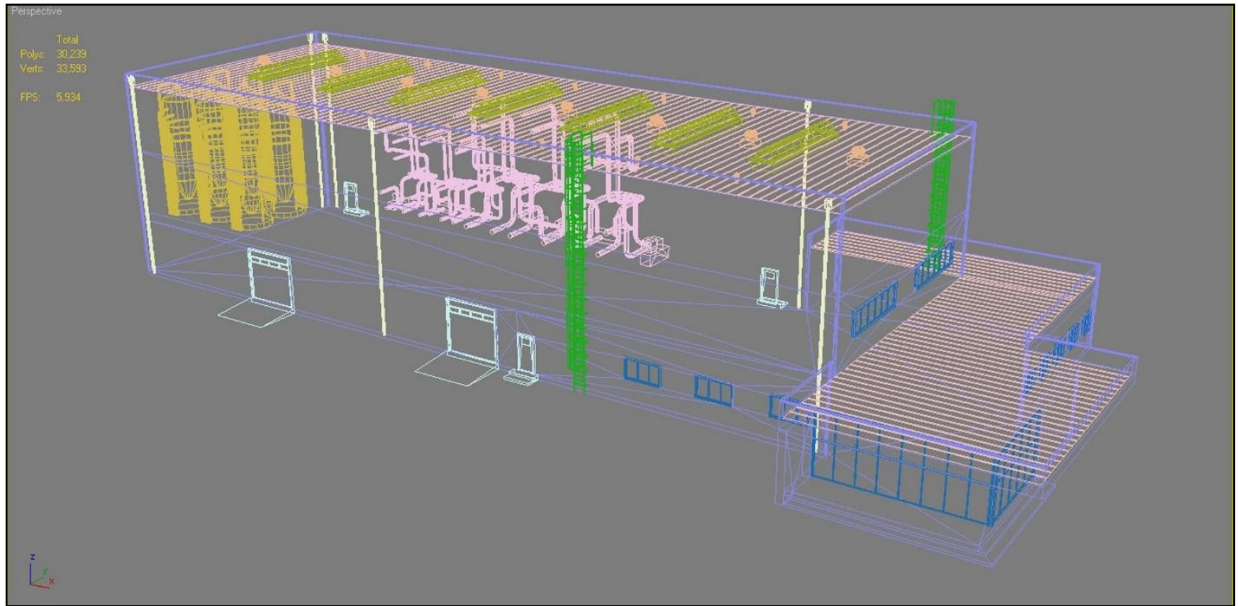








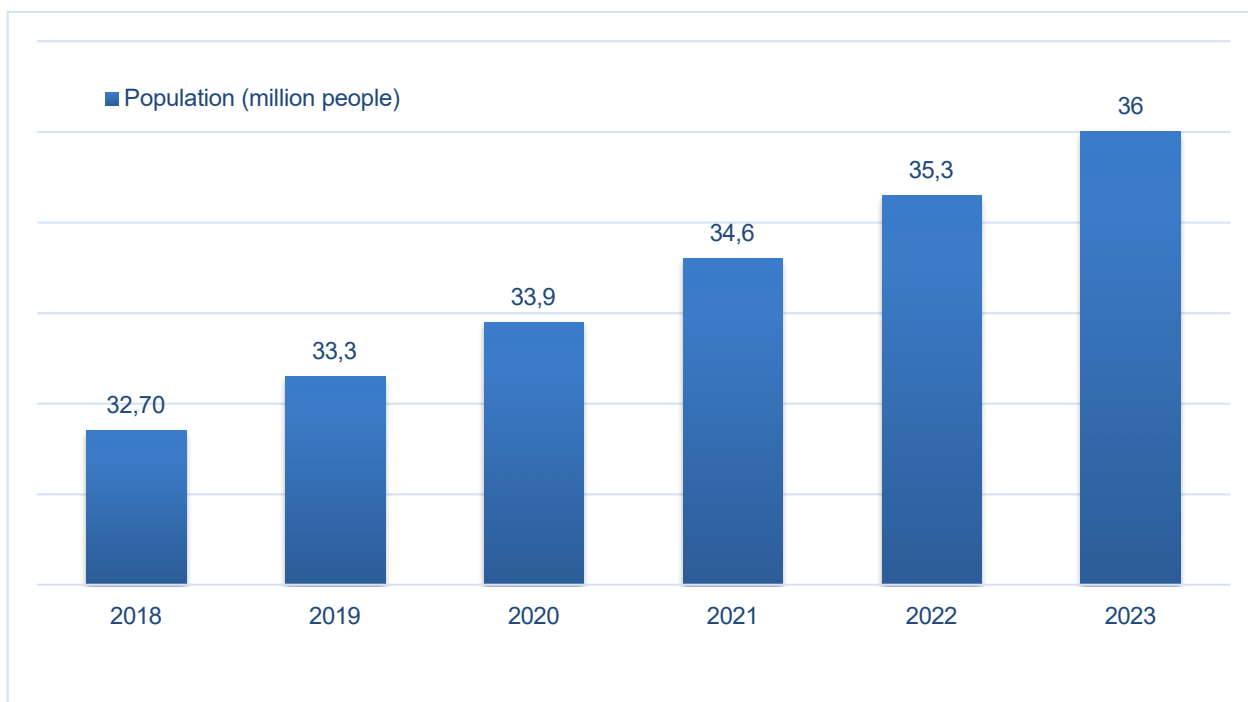




### 3 Marketing plan

The population of the Republic of Uzbekistan has been growing rapidly in recent years. In particular, in 2018 the population was more than 32,656,700 people, and by 2023 the figure reached 36,024,900 people.

Figure 6 Population growth in Uzbekistan (2018-2023)



Population dynamics also show growth in the Kamashinsky district. In 2019, the population of the district was 270,800 people, and by 2023 the figure will reach 286,800 people. The average population per square kilometer is 107.8 people.

It is noted that the real estate market activity has increased by 9% during 2022 compared to 2021. Also the average prices in the secondary housing market are 15.8%, especially in the city of Tashkent.

increased by 22.7 percent. In November, the number of contracts for the sale of real estate in the country increased by 7.8% compared to October.

The highest growth rates of housing sales were recorded in Khorezm with 38 percent, Navoi region with 24 percent and the Republic of Karakalpakstan with 23 percent. Since the beginning of the year compared to the same period of the previous year, the growth of housing sales made up 9 percent. At the same time, the number of agreements in the real estate market increased by 8.1 percent compared with November last year.

Since the beginning of the year there has been a rapid increase in housing prices on the secondary market. In particular, the cost of housing per square meter in the republic has increased by 15.8%.

The most significant growth in prices for secondary housing was observed in Tashkent region - 22.9%, Navoi region - 22% and Tashkent city - 22.7%. The price at the secondary housing market in the capital city increased by 2.4% for a month.

Until 2040, about 100,000 new housing units need to be built annually in Uzbekistan to meet overall housing needs, based on the average housing area needed per capita, taking into account projected population growth and expected declines in average household size.

In addition, it is estimated that Uzbekistan needs to build about 45,000 housing units annually to reduce the current housing deficit due to overcrowding and poor housing conditions. In a recent government survey

1 80% of respondents indicated the need to improve housing conditions, and a report by the United Nations Economic Commission for Europe details the poor housing conditions in Uzbekistan.

2 Despite government efforts to address the housing shortage and improve the quality of existing housing, the total demand for the 145,000 new housing units needed annually still far exceeds the current average construction volume, estimated at about 90,000 units built annually over the past 10 years. Closing this gap will require a significant increase in the mortgage lending capacity of the banking sector, given that only 38,800 new mortgages were originated in Uzbekistan in 2021.

3 Several tax and infrastructure subsidies serve to stimulate housing construction, including value-added tax and customs duty exemptions. Nevertheless, the volume of new housing construction remains well below what is needed to meet growing demand and replace existing substandard housing.

It is estimated that only the 70th percentile of Uzbek households by income distribution can afford mortgage products, so affordable mortgages are needed to support both the primary and secondary housing markets.

COVID-19 had a relatively short-term impact on Uzbekistan's housing sector during a period of severe quarantine and isolation in March-May 2020 due to a sharp decline in economic activity and perceived uncertainty among economic agents and individuals. The monthly number of sales contracts in Uzbekistan fell from more than 25,000 in December 2019 to less than 3,000 in April 2020. more than 33,000 in July 2020. Additional support measures provided by the government also stimulated a rapid resumption of economic activity, including in construction and housing, to pre-pandemic levels by September 2020.



Analysis of the real estate market showed that housing sales in Uzbekistan increased by 30%. Experts explain it by a sharp increase in mortgage lending, which in turn affected the positive dynamics of sales in all regions. The number of registered deals of purchase and sale of real estate in Uzbekistan amounted to 26.5 thousand, which is 30% more (+6.2 thousand) than in May (20.3 thousand). Since the beginning of the year the growth of housing sales amounted to 8.5% (172.7 thousand).

A sharp increase in mortgage lending by 37% compared to May (from 1.1 trillion soums to 1.5 trillion soums) influenced the positive dynamics of sales in all regions. The high growth rate of 2.3 times was recorded in Karakalpakstan, Samarkand - 75% and Jizzakh - 41%. Compared to June 2021, the number of real estate purchase and sale transactions increased by 22% (+4.7 thousand). According to calculations, the growth of the average cost of housing in the secondary market amounted to 0.5% per month (in May - 2.7%, in April - 2.5%). A significant increase in the cost of housing was observed in Khorezm (6.1%), Kashkadarya (1.9%) and Ferghana regions (1.8%).

The decrease of the housing prices was recorded in Surkhandarya (5.3%), Andijan (2.1%), Syrdarya (1.2%) and Navoi oblasts (1.1%). At the same time, since the beginning of the year, the average prices in the capital have increased by 13% (7% nationwide), which indicates an increase in demand for housing, including as a result of the influx of foreign nationals.

## WORLD EXPERIENCE

### "LB HUS (Sweden)



Фунт Оптималь 90  
3 комнаты · 89,6 м²



ЛБ Оптимальный 108  
4 комнаты · 108,5 м²



ЛБ Оптималь 113  
4 комнаты · 112,8 м²



ЛБ Оптималь 117  
4 комнаты · 116,6 м²



ЛБ Оптимальный 126  
6 комнат · 126 м²



ЛБ Оптимальный 133  
6 комнат · 133 м²



Седло LB Optimal 134  
5 комнат · 134,4 м²



Пульпа LB Optimal 134  
5 комнат · 134,4 м²

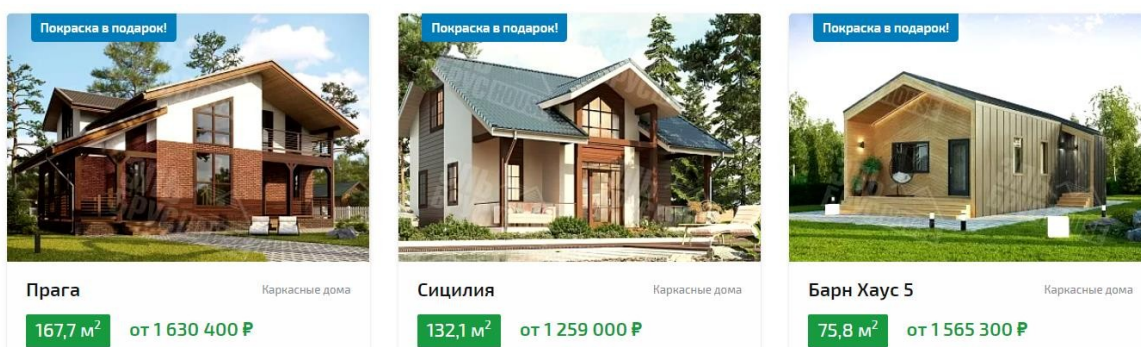


LB HUS, in the European Union, is one of the leaders in the production of fast-build houses on a frame basis. Currently, LB HUS produces an average of 700 houses per year. For almost 50 years of the firm's existence, several thousand houses have been exported to 14 countries worldwide. The Swedish houses manufactured by LB HUS are of closed panel construction using KNAUF materials. Exterior wall panels of ferroplast have a cavity to keep dry and ventilated, which is reinforced with bricks, wood or cement screed. The outer walls contain 230 mm of insulation made of natural raw materials (mineral wool) and are nailed with thermal breaks. Insulation, windows and doors are factory installed. Prepared intermediate floors and face front sections, as well as roof beams are supplied complete with the house. A special feature of LB HUS houses is the integrated airtight seal on one side, which, combined with the excellent insulation, ensures high heat-saving performance.

The frames of these houses are assembled in just one day and can therefore be protected from moisture and precipitation. The kits include all necessary components for assembly and insulation work, as well as other elements that can be freely transported. The energy efficiency of houses of frame construction LB HUS is very high. And today energy efficiency is one of the most urgent tasks facing the economies of many countries, including Russia. KNAUF has been working with the Swedish company for many years. LB HUS uses KNAUF products in its projects: cement boards "AQUAPANEL® - exterior" for external enclosing structures and KNAUF plasterboard sheets for internal finishing.

<https://youtu.be/zm6QTitw188>

### "Elbrus HOUSE (Russia)



Elbrus HOUSE - a modern, actively developing company engaged in design and construction of turnkey country houses since 2008.

To date, the company has implemented more than 1,000 residential houses made of wood and stone in the Nizhny Novgorod region and beyond. Among the company's works the largest wooden building is a monastery building in the Ivanovo region (<https://youtu.be/XksQd4EWL4w>).

"Elbrus House" offers its clients carefree and easy construction. You don't need to get into technical issues by entrusting the construction to the company.

- In the process of construction are used only high quality materials and appropriate technology;
- In the design of the building involved experts (own architectural department), a professional team creates modern architectural and design solutions;
- All construction and installation work is carried out in strict accordance with GOST and SNIP
- Quality is monitored by technical control engineers at all stages;
- Interior decoration, engineering communications and other work is performed at a high level by specialized professionals with extensive experience.

### "FERTIGBAU (Germany)

Fertigbau is a full-service construction company that produces, designs and builds any commercial or residential and social facilities using high-quality, innovative and environmentally friendly natural building materials. It uses the most popular construction technology in Western Europe, the technology of German prefabricated houses.

 <p><b>Проект 125 v1</b></p> <p>Жилая площадь: <b>82 м<sup>2</sup></b> Чистая площадь: <b>125 м<sup>2</sup></b></p>	 <p><b>Проект 125 v2</b></p> <p>Жилая площадь: <b>77 м<sup>2</sup></b> Чистая площадь: <b>124 м<sup>2</sup></b></p>	 <p><b>Проект 126</b></p> <p>Жилая площадь: <b>82 м<sup>2</sup></b> Чистая площадь: <b>126 м<sup>2</sup></b></p>	 <p><b>Проект 128</b></p> <p>Жилая площадь: <b>81,97 м<sup>2</sup></b> Чистая площадь: <b>126,6 м<sup>2</sup></b></p>
 <p><b>Проект 129</b></p> <p>Жилая площадь: <b>79,30 м<sup>2</sup></b> Чистая площадь: <b>128,96 м<sup>2</sup></b></p>	 <p><b>Проект 135</b></p> <p>Жилая площадь: <b>82 м<sup>2</sup></b> Чистая площадь: <b>135 м<sup>2</sup></b></p>	 <p><b>Проект 143</b></p> <p>Жилая площадь: <b>89,64 м<sup>2</sup></b> Чистая площадь: <b>143,85 м<sup>2</sup></b></p>	 <p><b>Проект 145</b></p> <p>Жилая площадь: <b>94,13 м<sup>2</sup></b> Чистая площадь: <b>145,37 м<sup>2</sup></b></p>

#### Company benefits:

- Energy Efficiency
- Endurance
- Quality manufacturing of all prefabricated parts and assemblies to within a millimeter
- Low price
- Fixed prices
- Speed of construction
- Eco-friendliness

#### Company priorities:

- Using quality, durable and environmentally friendly construction materials.
- To minimize energy consumption.
- Commitment to the European approach in all aspects of construction.

(<https://youtu.be/iD0xHrfgLa0>)

## 4 Organizational Plan

### 4.2 Personnel plan

As a result of the implementation of this project will create 40 jobs. Data on the personnel to be involved in the project, as well as data on the salaries of the employees involved in the project are presented in the table below:

**Table 3: List of personnel involved in the project**

<b>№</b>	<b>Job title</b>	<b>Number of employees</b>	<b>W/o 1 employee, \$/month.</b>	<b>Total payroll, (thousands of dollars)</b>
<b>1</b>	<b>Administrative and managerial and support staff</b>	<b>14</b>		<b>19,50</b>
1.1	CEO	1	1500,00	1,50
1.2	Deputy General Director	1	900,00	0,90
1.3	Accountant	2	720,00	1,44
1.4	Service employees	3	720,00	2,16
1.5	Engineer	1	9000,00	9,00
1.6	Warehouse Clerk	1	420,00	0,42
1.7	Head of the IT department (system administrator)	1	900,00	0,90
1.8	Marketer	1	900,00	0,90
1.9	Administrator	1	600,00	0,60
1.10	Purchasing Manager	1	780,00	0,78
1.11	Quality Manager and claims	1	900,00	0,90
<b>2</b>	<b>Production personnel</b>	<b>26</b>		<b>15,60</b>
2.1	Machinists	14	600,00	8,40
2.2	Operators	4	600,00	2,40
2.3	Drivers	2	600,00	1,20
2.4	Workers of the production and distribution shop	6	600,00	3,60

No	Job title	Number of employees	W/o 1 employee, \$/month.	Total payroll, (thousands of dollars)
	<b>Total</b>	<b>40</b>		<b>35,10</b>

Source: Global Innovation Trade data

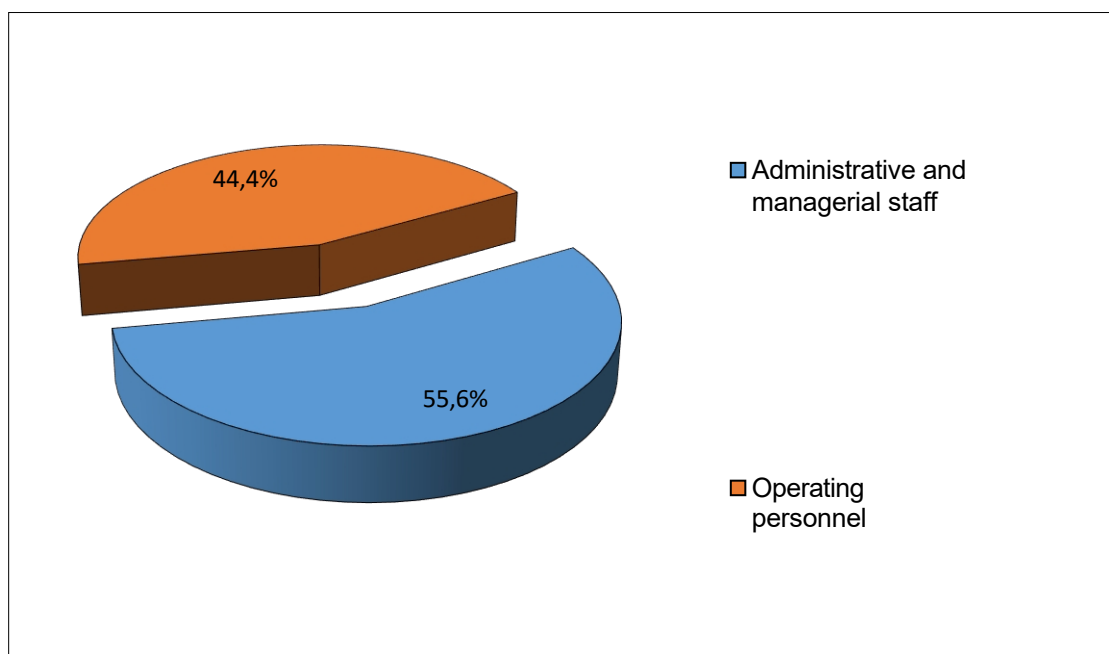
In total, the plant will employ 26 people classified as working personnel.

The total monthly cost of the workers' payroll will be \$15,600.

Also, the plant will employ 14 people related to the category of administrative and management personnel. The total monthly cost of the FOP (payroll) of the administrative and management personnel will be \$19,500.

A total of 40 jobs will be created as a result of the project. The total monthly payroll will be \$35,100. Below is a breakdown of the project's payroll by personnel category:

**Figure 7. Project payroll structure by personnel category**



Source: Global Innovation Trade calculations

About 44.4% of the total payroll of the project will be spent on the salaries of the working staff, respectively, about 55.6% of the payroll of the project will be spent on salaries of administrative and management personnel, as well as on salaries of engineering and technical personnel.



### 4.3 Work schedule for the project

Below is a timeline of the project:

**Table 4: Project implementation schedule**

Project Stage	Beginning works	Duration days	End of job
Rationale and defense of investment of the project, and the management decision	01.04.2024	30	30.04.2024
Start construction work, prepare equipment, recruit staff, prepare tooling, etc.	01.05.2024	183	30.11.2024
<b>Running the plant</b>	<b>01.12.2024</b>	<b>30</b>	<b>01.01.2025</b>

*Source: Global Innovation Trade analysis and calculations*

The production of frame-panel timber houses based on European technology is scheduled to start in June 2024.

### 4.4 Sources, forms and conditions of financing

Financing of the project for the production of frame-panel wooden houses is carried out without attracting loans from financial institutions (banks, etc.). The amount of funding required to implement the project is provided by the project initiator in full.

### 4.5 Project funding schedule

The schedule of investment (schedule of project financing) in the project is presented in the financial model of the business plan.

## 5 Production plan

### 5.1 Description of buildings and premises

Specific parameters (area, architecture, interior design) of the shop for the production of frame-panel wooden houses are given.

### 5.2 Description of necessary equipment

The main parameters of the equipment to be used are given below:

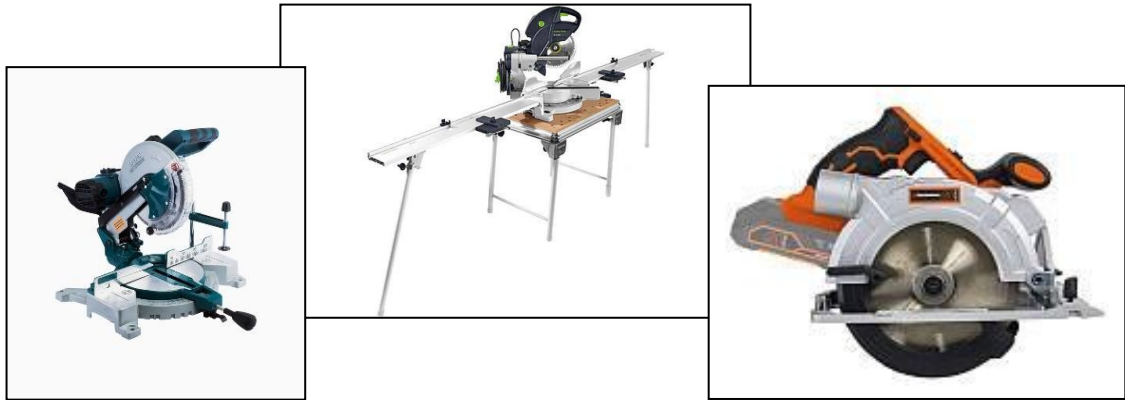
- The country of manufacture is Germany;
- The manufacturer is WEINMANN;
- Year of manufacture - 2008 (equipment in excellent condition, all current maintenance carried out);
- Maximum production capacity of the equipment - 20000-25000 m<sup>2</sup> of frame-panel wooden houses per year in a single-shift mode of operation.

The composition of the equipment,

1. HOLZMA HPP 350/43/38 machine produced by WEINMANN, Germany. Designed for automatic accurate cutting without splitting of board material (veneered and unveneered boards made of wood or wood-bearing materials).



2. Trimming saw, manufactured by Graule, Germany. Designed for sawing wood at right and oblique angles.



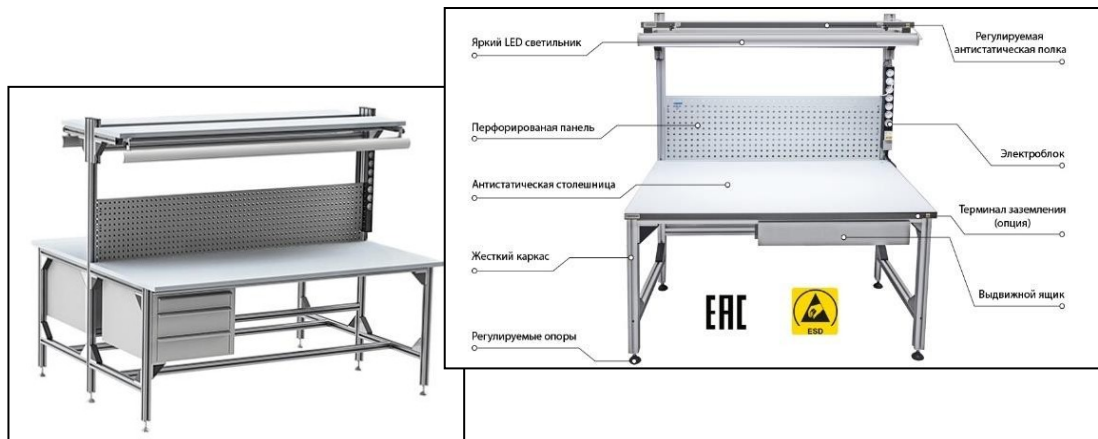
3. Optimat WTV 100/4C7 Variotec, manufactured by WEINMANN, Germany. Mounting table - designed for the production of non-standard elements. It ensures the accuracy of linear and angular dimensions of roof elements.



4. WEM100/6. Frame and transom station, manufactured by WEINMANN, Germany. Designed for automatic production of rectangular frame structures (frame panels of exterior walls and partitions).



5. Optimat WTW120/06 SPB. Mounting table, made by WEINMANN, Germany. Designed for the production of wall elements (panels of outer walls and partitions).



6. Profi WHM 100/6DK Compact manipulator for transporting and positioning plate materials.

7. Optimat WMS 100 multifunctional machining bridge with CNC, production WEINMANN, Germany. Designed for fastening with staples of board material to the frame of exterior walls and partitions in automatic mode, milling of window and door openings and technological apertures, board formatting on the outer perimeter of the panels.



8. Optimat WTW120/06 SPB Mounting table, manufactured by WEINMANN, Germany. Designed for intermediate transport of elements.

9. Profi WTW150/06 Mounting turntable, made by WEINMANN, Germany. Designed for the production of wall elements (external walls and partitions). It has a hydraulic tilt device (the table rotates along the longitudinal axis from 0 to 92 degrees).

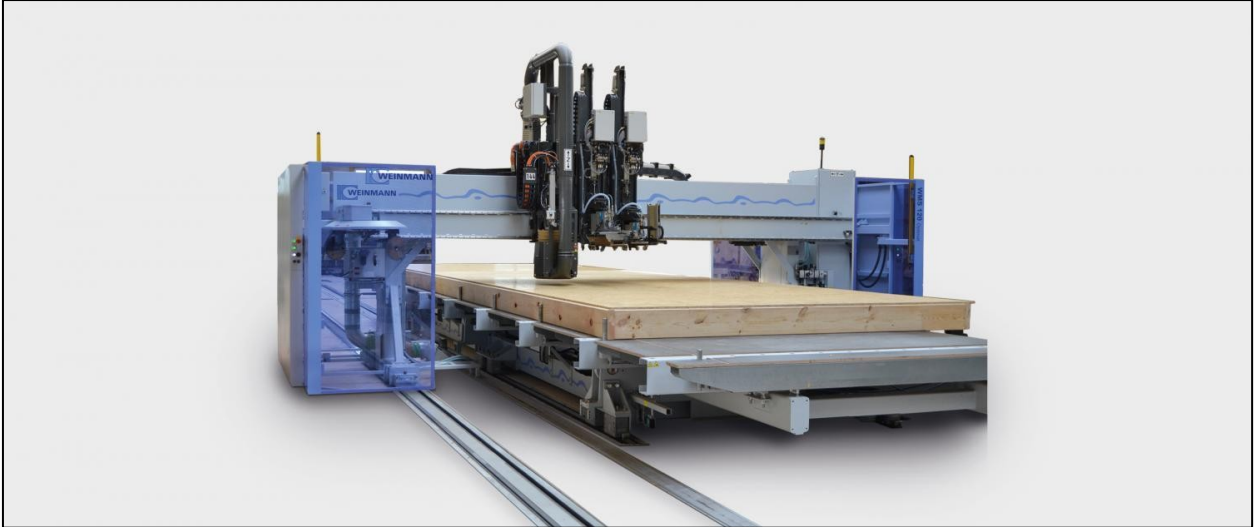


10. Profi WTW150/06 Mounting turntable, made by WEINMANN, Germany. Designed for the production of wall elements (external walls and partitions). It has a hydraulic tilt device (the table rotates along the longitudinal axis from 0 to 92 degrees).

11. Optimat WTW120/06 SPB Mounting table, made by WEINMANN, Germany. Designed for the production of wall elements (panels of exterior walls and partitions).

12. Profi WHM 100/6DK Compact manipulator for transporting and positioning plate materials.

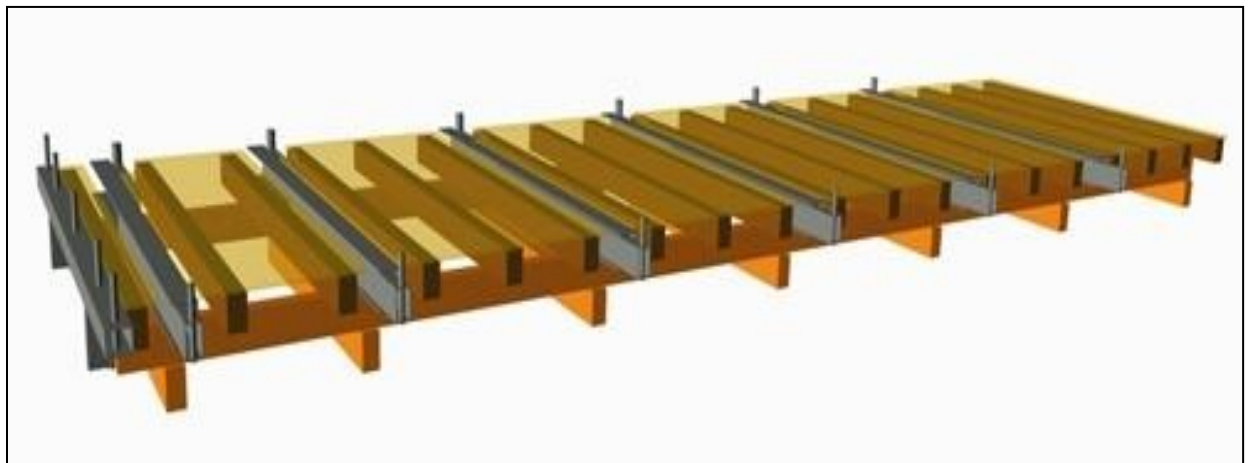
13. Profi WMS120 Multifunctional machining bridge with CNC, manufactured by WEINMANN, Germany. Designed for fastening with staples of plate material to the frame of exterior walls and partitions in automatic mode, milling of window and door openings and technological apertures, plate formatting along the outer perimeter of the panels.



14. Optimat WTW120/06 SPB Mounting table, made by WEINMANN, Germany. Designed for the production of wall elements (panels of exterior walls and partitions).

15. Optimat WTW 150/6 Rotary table, manufactured by WEINMANN, Germany. Designed for the transfer of finished wall elements (external walls and partitions) to the vertical magazine. Has a hydraulic tilt device and movement mechanism.

16. Optimat WLW 100/S Wall storage, manufactured by WEINMANN, Germany. Designed for storing wall panels in an upright position. Also used for window installation work and plastering before shipment to the site.



17. WLV 100/06S Distribution cart, manufactured by WEINMANN, Germany. Designed for the distribution of wall elements on orders and for their storage / shipment to the site.

18. Optimat WTZ100/6 Carpentry table (rotary), made by WEINMANN, Germany. Designed for the production of elements of roofs and ceilings with precise dimensions and angles. Has a hydraulic swiveling device.

19. Optimat WTZ100/6N Carpentry table (rotary), made by WEINMANN, Germany. Designed for the production of elements of roofs and ceilings with precise dimensions and angles. Has a hydraulic swiveling device.

19. Optimat WTZ100/6 Carpentry table (rotary), made by WEINMANN, Germany. Designed for the production of elements of roofs and ceilings with precise dimensions and angles. Has a hydraulic swiveling device.

20. Optimat WTZ100/6N Carpentry table (rotary), made by WEINMANN, Germany. Designed for the production of elements of roofs and ceilings with precise dimensions and angles. Has a hydraulic swiveling device.

21. Trimming saw, manufactured by STROMAB, Italy. Designed for sawing workpieces made of wood at right and oblique angles.

22. Forsa 8 panel cutting machine manufactured by IXES, Germany. Designed for cutting board material (lined and unlined boards made of wood or wood-containing materials).

23. Milling machine Molda 7, manufactured by IXES, Germany. It is designed for milling flat and shaped surfaces.

24. Plana 7 planer planer, manufactured by IXES, Germany. Designed for planing workpieces to size in thickness.

25. Electric single-beam overhead electric support crane with carrying capacity of 2 tons, the span of 22.156 m, made in Bulgaria.

26. Electric one-beam overhead electric support crane with carrying capacity of 2 tons, the span of 16.154m, made in Bulgaria.

27. Single-beam electric overhead travelling crane with carrying capacity of 5 tons, span 15.794 m, made in Bulgaria.

28. Side loader JUMBO JDQ 50/15/60, production JUMBO, Austria, load capacity of 5 tons. Designed for transportation of sawn timber, transportation of finished wall and floor elements to the place of storage.

29. Front wheel loader Doosan D 25S- 5, load capacity 2 tons; manufactured by Daewoo, Korea. Designed for transportation of raw materials, transportation of finished elements of walls and ceilings to the place of storage, loading and unloading works of various complexity.

30. Front wheel loader Doosan D 60 S- 5, load capacity 6 tons; manufactured by Daewoo, Korea. Designed for transportation of raw materials, transportation of finished elements of walls and ceilings to the place of storage, loading and unloading works of various complexity.

Auxiliary production equipment consists of:

- Girder crane - 3 pcs;
- Compressor unit;
- Compressed air conduit;
- Gas boiler;
- Gas heat generator set;
- Front loader Doosan D 25S- 5;
- Front loader Doosan D 60 S- 5;
- Side loader JUMBO JDQ 50/15/60;
- Fire alarm equipment;
- Fire suppression system;
- Hand pneumatic and power tools;
- 3D CAD/CAM software (Germany).

### **5.3 Product technology**

As noted above, the plant will produce factory-made sets of structures for residential and public buildings (walls, partitions, floors) based on the panel-frame technology. In this technology, the basis of the structures is a wooden frame made of beams, sheathed on both sides with plate and sheet materials. A frame-panel house requires 3.8 times less energy for heating than a house built using standard technology, as it uses modern and innovative materials.

As the key elements of the technology planned for the plant's construction of frame-panel wooden houses can be highlighted the following points:

- All elements of the house (walls, partitions, ceilings, roof panels) will be manufactured in finished form in the shop environment with the help of multifunctional bridges, frame assembly machines, cutting centers, assembly tables, beam processing centers, storage equipment and manipulators;
- At Production there is possibility go to from manual labor to automated production;
- The highest quality finished products;
- High speed order processing;
- Optimization of raw material costs (consumption by 30% less than on-site assembly).

## 5.4 Raw materials and components

The table below shows the types of raw materials, materials, energy carriers and components that will be used for the production of frame-panel wooden houses at the enterprise. In addition, the average monthly costs for each type of raw materials and components at the beginning of the enterprise at the projected production volume are presented (the parameters of the production plan are presented in Chapter 6 of this report):

**Table 5. List of raw materials, materials, components, energy sources to be used in the project**

Cost of raw materials, supplies, energy	Unit of measure	Cost (\$) per unit	Consumption volume resource per month at the output of 1,500 m <sup>2</sup> house sets	Cost, \$/month.
Sawn timber 42*192*6000	M3	155,16	41,65	6 462,4
Sawn timber 42*192*12000	M3	230,40	28,82	6 640,1
Sawn timber 42*145*6000	M3	155,16	4,03	625,3
Lumber 42*95*6000	M3	155,16	8,16	1 266,1
Sawn timber 140*280*12000	M3	256,80	0,63	161,8
Sawn timber 120*120*12000	M3	256,80	0,24	61,6
Lumber 145*192*12000	M3	256,80	0,22	56,5
Lumber 42*192*2700	M3	155,16	21,28	3 301,8
Lumber 42*145*2700	M3	155,16	7,92	1 228,9
Lumber 42*95*2700	M3	155,16	19,27	2 989,9
Lumber 42*42*2700	M3	155,16	0,03	4,7
Lumber 95*95*2700	M3	155,16	1,61	249,8



Organization of the enterprise for the production of frame and panel wooden houses

Cost of raw materials, supplies, energy	Unit of measure	Cost (\$) per unit	Consumption volume resource per month at the output of 1,500 m <sup>2</sup> house sets	Cost, \$/month.
Lumber 42*145*2800	M3	155,16	0,16	24,8
Lumber 42*95*2800	M3	155,16	1,20	186,2
Lumber 42*42*2800	M3	155,16	0,04	6,2
Lumber 42*192*2800	M3	155,16	0,94	145,9
Sawn timber 20*80*2500	M3	155,16	10,71	1 661,8
Lumber 42*50*2500	M3	155,16	7,52	1 166,8
Sawn timber 60*300*6000	M3	169,20	2,02	341,8
Lumber 42*192*6000	M3	155,16	6,83	1 059,7
Sawn timber 42*192*12000	M3	230,40	9,10	2 096,6
Sawn timber 42*145*6000	M3	155,16	0,40	62,1
Lumber 145*220*12000	M3	256,80	9,90	2 542,3
Sawn timber 120*120*12000	M3	256,80	2,74	703,6
Lumber 30*50*2500	M3	155,16	0,60	93,1
Lumber 42*50*2500	M3	155,16	2,81	436,0
Sawn timber 50*100*3000	M3	60,00	21,95	1 317,0
Sawn timber 20*80*2500	M3	155,16	0,27	41,9
Lumber (antiseptic) 42*50*2500	M3	155,16	7,87	1 221,1
Lumber (antiseptic) 30*50*3000	M3	155,16	9,70	1 505,1
Lumber 42*192*6000 (strapping)	M3	155,16	6,02	934,1
OSB-3 12*1250*2800	pcs.	8,954	677,19	6 063,8
OSB-3 9*1250*2500	pcs.	5,954	1 163,68	6 929,0
GKLV 12,5*1200*2700	pcs.	5,211	1 308,89	6 820,5
Plywood FSF grade 3/3 15*1220*2440	pcs.	10,800	730,06	7 884,6
TSPS 16*1500*3000	pcs.	27,240	8,03	218,7
Plywood FSF grade 3/3 15*1220*2440	pcs.	10,800	80,30	867,2
Basalt heater pl.35 kg./m3 100 mm	M3	18,840	189,98	3 579,2
Basalt heater plates 35 kg./m3 50 mm	M3	18,840	19,67	370,6
Insulation boards 22 kg/m3 100 mm	M3	15,960	421,37	6 725,1
Vapor barrier film	M2	0,214	1 852,25	397,2
Superdiffusion membrane	M2	0,228	1 626,07	370,7
Superdiffusion membrane	M2	0,228	1 021,15	232,8
Bracket Z 45	pcs.	0,003	205 603,59	715,5
Clamp KG 725 CNK	pcs.	0,002	125 315,85	300,8
Bracket SD 91120 CNK (1 set -3200 pcs.)	pcs.	0,022	15 904,71	355,0
Nail RB 34 x 90 (1 set 2000 pcs.)	pcs.	0,011	39 383,03	420,6
Bracket 95/10	pcs.	0,001	61 909,80	59,4
Wave bracket WN 25 (1 cor. -5000 pcs.)	pcs.	0,016	113 211,99	1 834,0
Clamp KG 764 CNK (1 set -5000 pcs.)	pcs.	0,005	16 792,02	84,6
Ragged nail (loose)	kg	0,660	2,68	1,8

Cost of raw materials, supplies, energy	Unit of measure	Cost (\$) per unit	Consumption volume resource per month at the output of 1,500 m2 house sets	Cost, \$/month.
Bar support 50*140	pcs.	0,585	13,38	7,8
Girder holder left 40x210 (DBL-210)	pcs.	0,295	10,71	3,2
Right beam holder 40x210 (DBP-210)	pcs.	0,295	10,71	3,2
Sling under 160 Spax to 192 rafters	pcs.	0,780	808,35	630,5
Ventilation tape	m.p.	0,338	50,86	17,2
Spax 8*160 screw (plate head)	pcs.	0,192	406,85	78,1
Anchor. Plates	pcs.	0,029	1 560,49	44,6
Self-tapping screw 4*50 (galvanized)	pcs.	0,004	3 120,99	12,7
Metallized tape	pcs.	1,200	17,40	20,9
Double-Steel. Adhesive tape 50 m.p.	pcs.	0,456	13,38	6,1
Self-tapping screw 3,9x25 with metal drill, galvanized	pcs.	0,002	3 120,99	5,6
Assembly foam, 750 ml.	pcs.	2,455	100,37	246,4
Nail 3 x 70	kg	0,540	14,72	8,0
Nail 3.5 x 90	kg	0,526	14,72	7,7
Film p / e packaging 3200mm.	m2	0,216	5 657,12	1 221,9
Steel packing tape Specta 19*06	т.	947,424	0,19	180,0
Mounting angle reinforced, galvanized 50x50x32x2	pcs.	0,063	639,72	40,4
Lag Screws DIN 571 6-facet head. Zinc 8*100	pcs.	0,029	1 279,44	36,7
Lag Screws DIN 571 6-facet head. Zinc 10*80	pcs.	0,043	1 279,44	55,4
D10 washer reinforced DIN 9021, zinc.	pcs.	0,011	1 279,44	14,1
Stretch-film 17 microns.	pcs.	3,034	4,01	12,2
Firebioprotection	л.	0,420	120,45	50,6
Rope	m.p.	0,665	639,72	425,6
PVC window constructions	m2	39,600	227,52	9 009,8

Source: Global Innovation Trade calculations

## 6 FINANCIAL PLAN

### 6.1 Initial data and assumptions

A seven-year planning horizon was adopted in the economic evaluation of the project. The assumptions adopted in the project are described below.

#### Product Assumptions

For calculations of this project is used indicator monthly average production volume, taking into account the plans of the project initiators and the productivity of the equipment.

#### Assumptions about investment costs

Investment costs are divided into two categories: the initial costs of creating the company and working capital of the project. To determine the amount of necessary initial working capital, a forecast calculation of profits and losses on current activities of the company until the moment of reaching self-sufficiency was made.

#### 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 payroll;
- Other costs.

#### Assumption about the discount rate

The project adopted a discount rate of 7.29% per year. Below is the rationale for the calculation of this indicator.

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: Determination of the cost of equity**

Evaluation Factor	Expert evaluation, %
The size of the risk-free rate	7,29%
Amount of country risk adjustment	0%
Amount of industry risk adjustment	0%
<b>Cost of equity</b>	<b>7,29%</b>

Source: Global Innovation Trade analysis and calculations

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

**Table 7: Determination of the discount rate**

Constituents	%
Equity share	100%
Share of borrowed capital from the bank	0%
Tax	20,00%
Cost of equity	7,29%
<b>Total discount rate</b>	<b>7,29%</b>

Source: Global Innovation Trade analysis and calculations

Thus, the expert calculation of the discount rate was 7.29% per annum.

### **Assumptions about revenue, profit and loss projections (P&L) and cash flow (CFP)**

All of the above indicators were used to build revenue, P&L, and DDS plans.

## **6.2 Nomenclature and prices**

The table below shows the range of products planned for production, as well as sales prices, which were calculated based on an analysis of average market prices for similar types of products:

**Table 8: Nomenclature and prices of planned products**

Product	Unit of measure	Average amount of work, m <sup>2</sup> /month	Price, \$/m <sup>2</sup>
House sets built with the technology of of frame and panel construction, with windows	\$/m <sup>2</sup>	1500	126,0

Source: Global Innovation Trade analysis and calculations

### 6.3 Investment costs

The capital costs that need to be incurred to implement the project are shown in the table below:

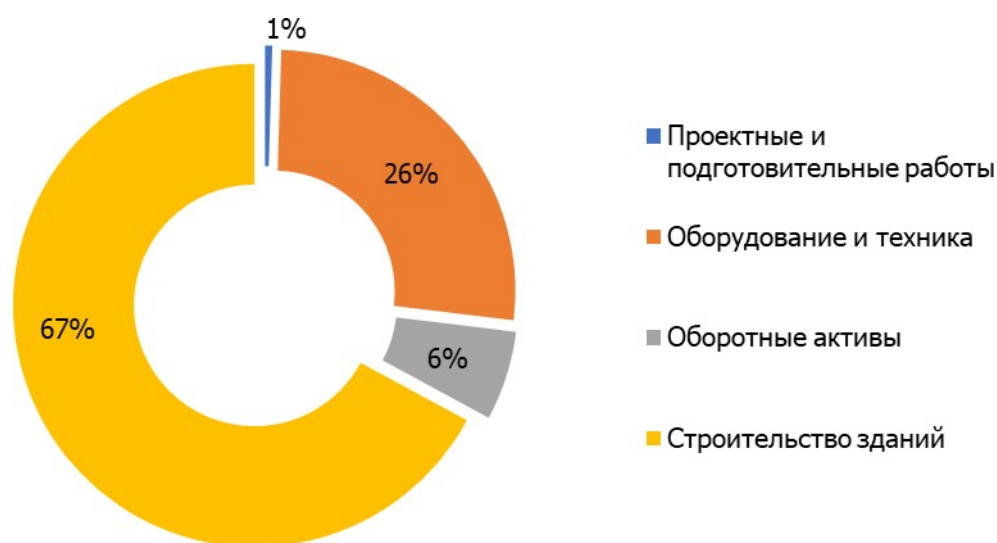
**Table 9: Investment costs of the project**

No	Capital expenditures	Price, thousand dollars.	Quantity	Cost, thousand dollars.
<b>1</b>	<b>Design and preparatory work</b>			<b>1,5</b>
1.1	Development of a business plan for the project	<b>126</b>	<b>1</b>	1,5
<b>2</b>	<b>Building construction</b>			<b>213,3</b>
<b>3</b>	<b>Equipment and machinery</b>			<b>84,0</b>
<b>4</b>	<b>Current assets</b>			<b>19,0</b>
4.1	Purchase of raw materials for the first month of plant operation			19,0
<b>Total capital costs</b>				<b>317,8</b>
Coverage of the cache-flo deficit				129,3
<b>Total investment in the project</b>				<b>447,0</b>

\* Data is subject to change during the design and material procurement process.

Total investment in the project will be 233.77 thousand dollars. The total capital cost of the project will be \$104.5 thousand. The figure below the structure of investment costs of the project by cost items:

**Figure 8. Structure of investment costs of the project**



Source: Global Innovation Trade analysis and calculations

#### 6.4 Initial working capital requirement

The initial working capital requirement is made up of the costs of purchasing raw materials and materials that will be used in the production of frame-panel wooden houses, based on the need to form a monthly inventory of these materials.

Working capital is included in the investment costs of this project and amounts to 19.0 thousand dollars.

#### 6.5 Operating costs (fixed and variable)

**Project fixed costs** are project costs that do not depend on changes in the volume of production. The key fixed costs of the project are shown in the table below:

**Table 10. Fixed costs**

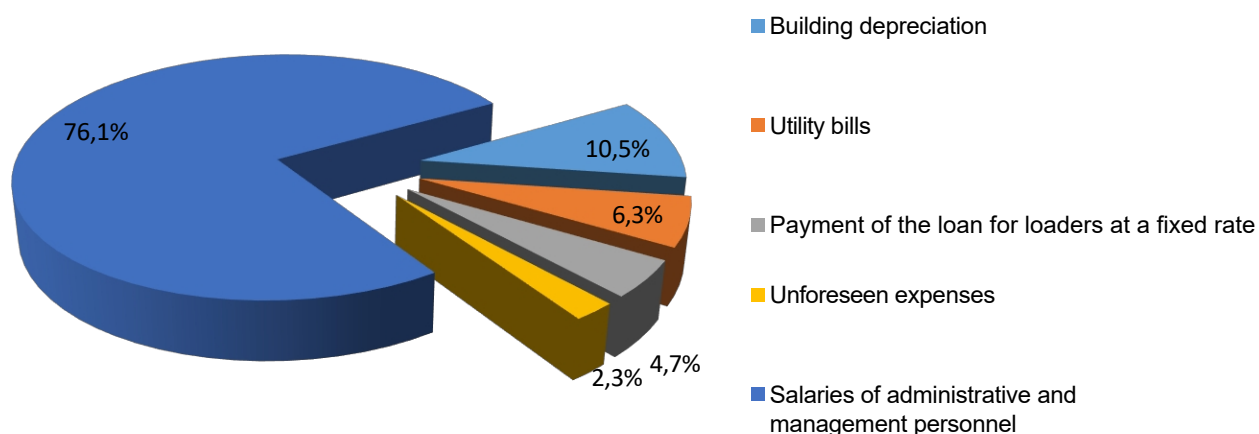
№	Indicator	Consumption	Thousands of dollars per month.
1	Building depreciation	2.7 thousand dollars per month.	2,70
2	Utility bills	1.63 thousand dollars per month.	1,63

No	Indicator	Consumption	Thousands of dollars per month.
3	Payment of the loan for loaders at a fixed rate	1.2 thousand dollars per month.	1,20
4	Unforeseen expenses	60 thousand dollars per month.	0,60
5	Salaries of administrative and management personnel	19.5 thousand dollars per month.	19,50
	<b>TOTAL</b>		25,63

Source: Global Innovation Trade analysis and calculations

The structure of fixed costs of the project by cost items was calculated:

**Figure 9. Structure of fixed costs of the project**



Source: Global Innovation Trade analysis and calculations

About 76.1% of all fixed costs of the project will be spent on salaries of administrative and management personnel (as well as engineers and technicians), about 6.3% of all fixed costs of the project will be spent on utility bills.

**The variable costs of the project** are the costs of raw materials, goods and materials required for the production of frame-and-panel wooden houses, as well as the wage costs of workers.

**Table 11. Variable costs of the project**

<b>№</b>	<b>Variable costs</b>	<b>Average costs in month (thousands of dollars)</b>
1	Sawn timber 42*192*6000	6,462
2	Sawn timber 42*192*12000	6,640
3	Sawn timber 42*145*6000	0,625
4	Lumber 42*95*6000	1,266
5	Sawn timber 140*280*12000	0,162
6	Sawn timber 120*120*12000	0,062
7	Lumber 145*192*12000	0,056
8	Lumber 42*192*2700	3,302
9	Lumber 42*145*2700	1,229
10	Lumber 42*95*2700	2,990
11	Lumber 42*42*2700	0,005
12	Lumber 95*95*2700	0,250
13	Lumber 42*145*2800	0,025
14	Lumber 42*95*2800	0,186
15	Lumber 42*42*2800	0,006
16	Lumber 42*192*2800	0,146
17	Sawn timber 20*80*2500	1,662
18	Lumber 42*50*2500	1,167
19	Sawn timber 60*300*6000	0,342
20	Lumber 42*192*6000	1,060
21	Sawn timber 42*192*12000	2,097
22	Sawn timber 42*145*6000	0,062
23	Lumber 145*220*12000	2,542
24	Sawn timber 120*120*12000	0,704
25	Lumber 30*50*2500	0,093
26	Lumber 42*50*2500	0,436
27	Sawn timber 50*100*3000	1,317
28	Sawn timber 20*80*2500	0,042
29	Sawn timber (antiseptic) 42*50*2500	1,221
30	Sawn timber (antiseptic) 30*50*3000	1,505



31	Lumber 42*192*6000 (strapping)	0,934
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<b>№</b>	<b>Variable costs</b>	<b>Average costs in month (thousands of dollars)</b>
32	OSB-3 12*1250*2800	6,064
33	OSB-3 9*1250*2500	6,929
34	GKLV 12,5*1200*2700	6,820
35	Plywood FSF grade 3/3 15*1220*2440	7,885
36	TSPS 16*1500*3000	0,219
37	Plywood FSF grade 3/3 15*1220*2440	0,867
38	Basalt heater pl.35 kg./m3 100 mm	3,579
39	Basalt heater plates 35 kg./m3 50 mm	0,371
40	Insulation with 22 kg/m3 100 mm	6,725
41	Vapor barrier film	0,397
42	Super diffusion membrane	0,371
43	Super diffusion membrane	0,233
44	Bracket Z 45	0,716
45	Clamp KG 725 CNK	0,301
46	Bracket SD 91120 CNK (1 set -3200 pcs.)	0,355
47	Nail RB 34 x 90 (1 set 2000 pcs.)	0,421
48	Bracket 95/10	0,059
49	Wave bracket WN 25 (1 cor. -5000 pcs.)	1,834
50	Clamp KG 764 CNK (1 set -5000 pcs.)	0,085
51	Ragged nail (loose)	0,002
52	Bar support 50*140	0,008
53	Girder holder left 40x210 (DBL-210)	0,003
54	Right beam holder 40x210 (DBP-210)	0,003
55	Sling under 160 Spax to 192 rafters	0,631
56	Ventilation tape	0,017
57	Spax 8*160 screw (plate head)	0,078
58	Anchor. Plates	0,045
59	Self-tapping screw 4*50 (galvanized)	0,013
60	Metallized adhesive tape	0,021
61	Adhesive tape 50 m.p.	0,006
62	Self-tapping screw 3,9x25 with metal drill, galvanized	0,006
63	Assembly foam, 750 ml.	0,246

<b>№</b>	<b>Variable costs</b>	<b>Average costs in month (thousands of dollars)</b>
64	Nail 3 x 70	0,008
65	Nail 3.5 x 90	0,008
66	Film p / e packaging 3200mm.	1,222
67	Steel packing tape 19*06	0,180
68	Mounting angle reinforced, galvanized 50x50x32x2	0,040
69	Lag Screws DIN 571 6-facet head. Zinc 8*100	0,037
70	Lag Screws DIN 571 6-facet head. Zinc 10*80	0,055
71	D10 washer, reinforced DIN 9021, zinc.	0,014
72	Stretch-film 17 microns. (Pallet film)	0,012
73	Firebioprotection	0,051
74	Rope	0,426
75	PVC window constructions	9,010
76	Salaries of production personnel	15,600
	<b>Total</b>	<b>110,565</b>

Source: Global Innovation Trade analysis and calculations

## **6.6 Cost calculation**

The production cost of frame-panel wooden houses was calculated in the financial model of the business plan and is \$ 63.24 per 1 m<sup>2</sup> house (this cost includes the cost of raw materials and energy).

Detailed costs (cost elements) for various categories are given in the financial model of the business plan, taking into account the planned production volume of frame-panel houses.

## 6.7 Sales Plan

Below is a sales plan for frame and panel wooden houses planned for production at the plant:

**Table 12. Sales plan by years of the forecast period (m<sup>2</sup>)**

Period	2024 г.	2025 г.	2026 г.	2027 г.	2028 г.	2029 г.	2030 г.
House sets built with the technology of of frame and panel construction, with windows	4 200	16 500	18 000	18 000	18 000	18 000	18 000
<b>Total</b>	<b>4 200</b>	<b>16 500</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>

Source: Global Innovation Trade analysis and calculations

## 6.8 Revenue Calculation

Below is a plan of revenues from the sale of products planned for production by years of the project.

**Table 13. Calculation of revenue by years of the forecast period (thousand dollars)**

Period	2024 г.	2025 г.	2026 г.	2027 г.	2028 г.	2029 г.	2030 г.
House sets built with the technology of of frame and panel construction, with windows	529,20	2 079,00	2 358,72	2 453,07	2 551,19	2 627,73	2 706,56
<b>Total</b>	<b>529,20</b>	<b>2 079,00</b>	<b>2 358,72</b>	<b>2 453,07</b>	<b>2 551,19</b>	<b>2 627,73</b>	<b>2 706,56</b>

Source: Global Innovation Trade analysis and calculations

## 6.9 Profit and loss forecast

Table 14. Profit and loss statement (thousands of dollars)

Income / expense item	2024	2025	2026	2027	2028	2029	2030
Revenue from sales WITHOUT VAT	448	1 762	1 999	2 079	2 162	2 227	2 294
Variable costs without VAT	318	1 044	1 124	1 153	1 183	1 214	1 246
Gross profit excluding VAT	131	718	875	926	979	1 013	1 048
Fixed costs without VAT	152	211	261	261	261	253	248
Taxes (except profit tax) without VAT	77	132	132	132	132	132	132
<b>EBITDA</b>	<b>-98</b>	<b>375</b>	<b>482</b>	<b>533</b>	<b>586</b>	<b>628</b>	<b>668</b>
EBITDA, % (to revenue) average	-22%	21%	24%	26%	27%	28%	29%
Depreciation of fixed assets	0	6	6	6	6	6	6
<b>EBIT</b>	<b>-98</b>	<b>369</b>	<b>476</b>	<b>527</b>	<b>580</b>	<b>622</b>	<b>662</b>
Payment of interest on loans and credits	0	0	0	0	0	0	0
Profit (Loss) before taxation	-98	369	476	527	580	622	662
Income tax	0	74	95	105	116	124	132
<b>Retained earnings</b>	<b>-98</b>	<b>295</b>	<b>381</b>	<b>422</b>	<b>464</b>	<b>497</b>	<b>530</b>
<b>Retained earnings on an accrual basis</b>	<b>-98</b>	<b>197</b>	<b>578</b>	<b>1 000</b>	<b>1 464</b>	<b>1 961</b>	<b>2 491</b>
Net income	-98	295	381	422	464	497	530
Return on sales	-22%	17%	19%	20%	21%	22%	23%

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 15. Cash flow forecast (thousands of dollars)**

	2024	2025	2026	2027	2028	2029	2030
<b>INVESTMENT CASH FLOW (IDP).</b>	<b>-233,8</b>	<b>-84,0</b>					
Capital expenditures	233,8	84,0					
<b>OPERATING CASH FLOW (OPF)</b>	<b>-132,7</b>	<b>258,7</b>	<b>322,6</b>	<b>363,4</b>	<b>406,0</b>	<b>439,0</b>	<b>471,2</b>
Revenue total	<b>529,2</b>	<b>2 079,0</b>	<b>2 358,7</b>	<b>2 453,1</b>	<b>2 551,2</b>	<b>2 627,7</b>	<b>2 706,6</b>
Expenses total	554,5	1 480,8	1 634,3	1 668,5	1 703,7	1 731,6	1 762,9
<i>Variable costs</i>	<i>375,1</i>	<i>1 231,8</i>	<i>1 326,8</i>	<i>1 361,0</i>	<i>1 396,2</i>	<i>1 432,4</i>	<i>1 469,8</i>
<i>Fixed costs</i>	<i>179,4</i>	<i>249,0</i>	<i>307,5</i>	<i>307,5</i>	<i>307,5</i>	<i>299,1</i>	<i>293,1</i>
Accrued taxes and payments	107,4	339,4	401,8	421,2	441,5	457,1	472,4
<b>FINANCIAL CASH FLOW (FDP)</b>	<b>233,8</b>	<b>84,0</b>					
Own funds	233,8	84,0					
<b>Net cash flow (NFC)</b>	<b>-366,5</b>	<b>174,7</b>	<b>322,6</b>	<b>363,4</b>	<b>406,0</b>	<b>439,0</b>	<b>471,2</b>
<b>Cumulative NPD</b>	<b>-366,5</b>	<b>-191,7</b>	<b>130,9</b>	<b>494,3</b>	<b>900,3</b>	<b>1 339,3</b>	<b>1 810,5</b>

Source: Global Innovation Trade analysis and calculations

## 6.11 Project efficiency analysis

### 6.11.1 Methodology for assessing the effectiveness of the project

Evaluation of investment projects is carried out according to the following main indicators:

- Net present value NPV
- Profitability index PI
- PBP payback period
- Discounted payback period DPBP
- Internal rate of return IRR

### 6.11.2 Project performance indicators

Indicators of investment project efficiency allow you to determine the effectiveness of the investment of funds in a particular 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), PBP; Discounted Payback period, DPBP; Internal rate of return (profitability), Rate of Return, IRR (Modified Rate of Return, MIRR); Profitability index, profitability index, profitability index, PI.

### 6.11.3 Net present value (NPV)

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.

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

Where i is the discount rate;

CF<sub>t</sub> - net cash flow of period t;

T - the 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.

#### **6.11.4 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, the total discounted value of all outflows and the total accrued value of all inflows are calculated, and both discounting and accretion are performed at the price of the project's financing source. 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:

$$\sum_{t=0}^N \frac{OF_t}{(1+r)^t} = \frac{\sum_{t=0}^M IF_t(1+r)^{n-1}}{(1+MIRR)^n} \quad (2)$$

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.

---



### 6.11.5 Return on investment 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 3.

$$PI = \frac{NPV}{Investments} \quad (3)$$

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.

### 6.11.6 Payback Period (PBP)

Payback period (PBP) - the expected period of recovery 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 the investment.

PBP payback period is calculated by formula 4.  $PBP =$

$$Investments/ACF \quad (4)$$

Where Investments is the initial investment;

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

### 6.11.7 Discounted Payback Period (DPBP)

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

The discounted payback period DPBP is calculated by formula 5.

$$DPBP = t - \frac{NPV_t}{NPV_{t+} - NPV_t} \quad (5)$$

Where  $t - t +$  is the period when negative and positive NPV was observed.

### 6.11.8 Analysis of project efficiency/profitability indicators

The main financial indicators of the project are shown in the table below:

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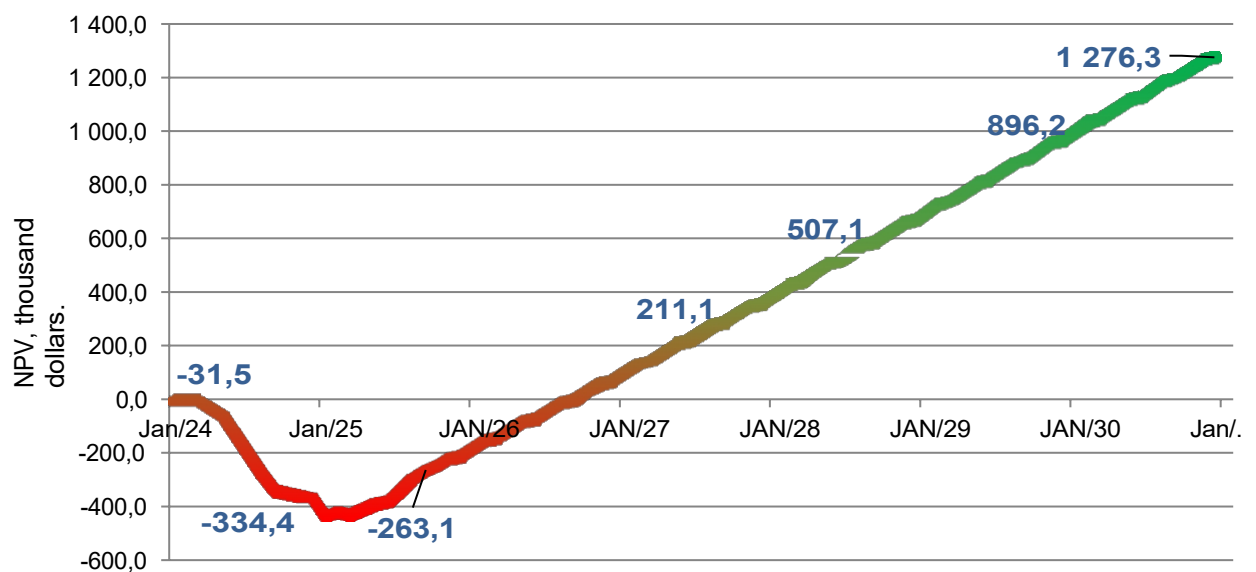
**Table 16. Indicators of investment efficiency**

Investment performance indicators	
Calculation period (planning horizon), months.	81
Net income (NV), thousand dollars.	1 810,5
Net discounted income (NPV), thousand dollars.	1 276,3
Internal rate of return (IRR), % per year	73%
Profitability index (PI), units.	3,80
Payback period (PB), months.	28,9
Discounted payback period (DPB), months.	30,3
Investments in the project, thousand dollars.	456,4
Average return on sales for the project, %	14%
Net income (cumulative), thousand dollars.	2 490,8
Discount rate, %	7,29%

Source: Global Innovation Trade analysis and calculations

According to the data presented, it is clear that the project is profitable. It will pay off in 2.41 years after the start of the project (April 2024). Payback period with discounting will also be 2.53 years. The figure below shows the NPV of the project:

**Figure 10. Graph 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 \$1,276.3 thousand at the end of the period, shows the amount of cash that the investor will receive from the project after the cash flows have recovered its initial investment costs and the periodic cash outflows associated with the implementation of the project, taking into account the time value of money and project risks. The project's NPV will only increase in the future, because by the end of 2030 all of the project's investments will have been recovered.

The internal rate of return of the project is 73% (due to the low investment needed to implement the project), which is several times higher than the discount rate. The PI is 3.8 units. It should be understood that the PI value will only improve in the future.

## 7 PROJECT RISK ANALYSIS

### 7.1 Qualitative analysis of project risks

A qualitative analysis of the main risks of the project is presented in the table below:

**Table 17. Qualitative risk analysis of the project for the resumption of production of frame-panel wooden houses according to European technology**

Risk	Probability and degree of hazards. Manifestations of Negative Influence	Risk leveling tools
<b>Production risks</b>		
Breakdowns Process equipment failures	Probability: medium Degree of danger: high Impact: production stoppage	Timely maintenance of equipment plant, spare parts availability
Lack of qualified personnel, lack of competent technologists/engineers	Probability: medium Degree of danger: high Impact: disruption production cycle	Effective personnel policy, attractive motivation system
Disruption of deliveries to the consumer due to logistics problems	Probability: medium Hazard level: medium Impact: decrease in sales	Optimization supply chain optimization
<b>Market risks</b>		
Dumping competitors' prices	Probability: low Degree of danger: high Impact: decrease in profit	Cost reduction
<b>Financial risks</b>		
Delayed payments to customers	Probability: medium Degree of danger: medium Impact: Shortage turnover company resource	Tracking payment schedule for delivered products, control upholding commitments
Shortage of working capital in the investment phase of the company	Probability: low Degree of danger: low Impact: "freezing" the project	Planning of expenditures and cash receipts in the investment phase of the project

Source: *Global Innovation Trade analysis*

In general, we can say that the project does not have any extraordinary risks.

## 7.2 Quantitative risk analysis

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

**Table 18. Sensitivity analysis of the project to changes in key conditions**

Indicator	NPV		IRR	
<b>Base value</b>	<b>1 276,3</b>		<b>73%</b>	
<b>Deviations</b>	$\Delta$	%	$\Delta$	%
Product price reduction by 5%	1 144,5	-10,3%	111%	52,0%
Increase in investment costs by 5%	1 166,1	-8,6%	120%	64,3%
Increase in variable costs by 5%	1 354,4	6,1%	135%	84,8%
Increase in fixed costs by 5%	1 546,5	21,2%	160%	119,1%

**Continued**

Indicator	PI		PB	
<b>Base value</b>	<b>3,8</b>		<b>28,9</b>	
<b>Deviations</b>	$\Delta$	%	$\Delta$	%
Product price reduction by 5%	5,43	43,0%	23,8	17,6%
Increase in investment costs by 5%	5,75	51,5%	23,0	20,3%
Increase in variable costs by 5%	6,49	71,0%	22,2	23,1%
Increase in fixed costs by 5%	7,62	100,7%	20,1	30,4%

*Source: Financial model calculations*

According to the results of the analysis, there is the greatest dependence of the project on reducing the selling price of the planned production.

### 7.3 Project break-even point

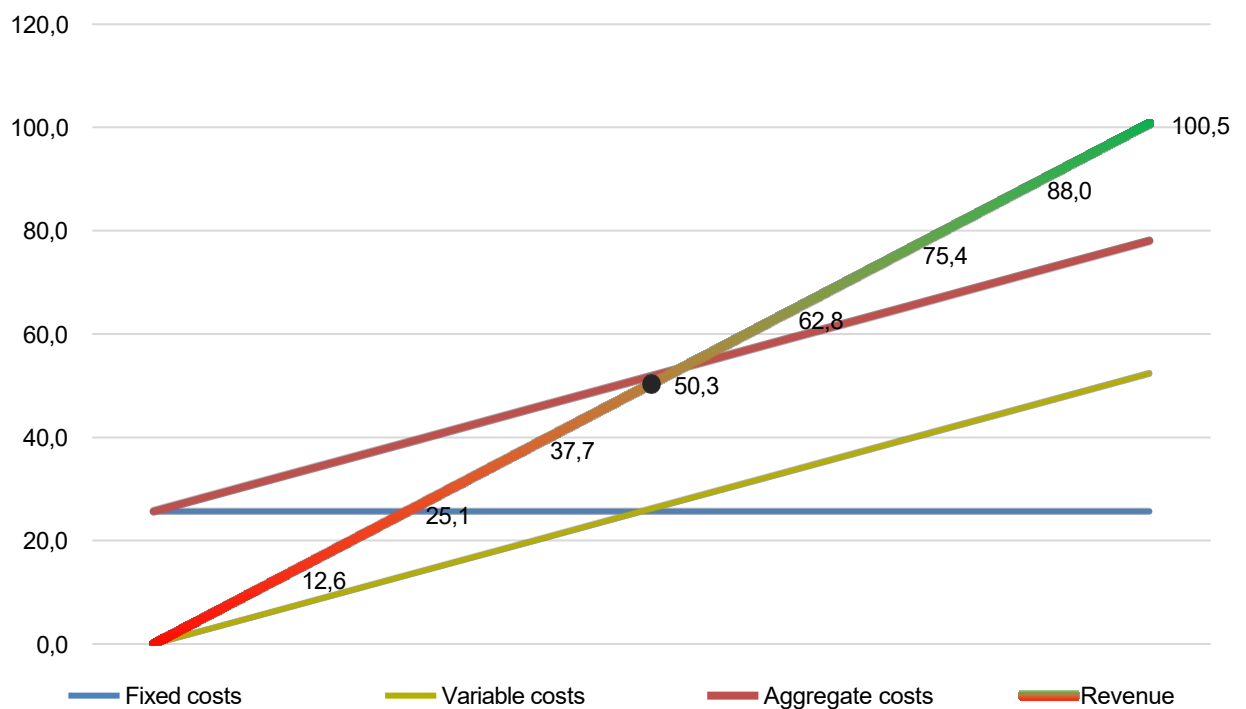
The break-even point determines what the volume of sales should be in order for production to work on a break-even basis, to cover all its costs without making a profit. To calculate the break-even point, we have to divide the costs into two components:

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.

For this project, the break-even point graph will look as follows (figure below):

Figure 11. Break-even point chart (thousands of dollars)



Source: Global Innovation Trade analysis and calculations

The break-even point is of great importance in the stability of the company and its solvency. Thus, the degree to which sales volume exceeds the break-even point determines the financial strength (margin of safety) of the company.

The break-even point chart shows that a month at the plant should produce at least 50.3 thousand dollars, to receive a profit on sales (which is about 24% of the planned sales of frame-panel wooden houses).

## 8 APPLICATIONS

### 8.1 Statement of cash flows 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
<b>INVESTMENT CASH FLOW (ICEF)</b>			-1,5	-30,0	-33,4	-36,0	-45,6	-45,6	-41,7			
Capital expenditures			1,5	30,0	33,4	36,0	45,6	45,6	41,7			
<b>OPERATING CASH FLOW (OPF)</b>						-33,4	-28,8	-24,7	-19,4	-14,1	-8,8	-3,5
Revenue total						37,8	50,4	63,0	75,6	88,2	100,8	113,4
Expenses total						60,2	66,6	72,9	79,2	85,5	91,9	98,2
<i>Variable costs</i>						34,6	40,9	47,3	53,6	59,9	66,2	72,6
<i>Fixed costs</i>						25,6	25,6	25,6	25,6	25,6	25,6	25,6
Accrued taxes and payments						11,0	12,7	14,8	15,8	16,7	17,7	18,7
<b>FINANCIAL CASH FLOW (FDP)</b>			1,5	30,0	33,4	36,0	45,6	45,6	41,7			
Own funds			1,5	30,0	33,4	36,0	45,6	45,6	41,7			
<b>Net cash flow (NFC)</b>			-1,5	-30,0	-33,4	-69,4	-74,4	-70,3	-61,1	-14,1	-8,8	-3,5
<b>Cumulative NPD</b>			-1,5	-31,5	-64,9	-134,3	-208,7	-279,1	-340,1	-354,2	-363,0	-366,5
Cash balance at the beginning of the period							-33,4	-62,2	-87,0	-106,4	-120,4	-129,2
Cash balance at the end of the period						-33,4	-62,2	-87,0	-106,4	-120,4	-129,2	-132,7
<b>Net discounted income (NPV)</b>			-1,5	-30,0	-33,2	-68,6	-73,1	-68,7	-59,3	-13,6	-8,4	-3,3
<b>NPV on an accrual basis</b>			-1,5	-31,5	-64,7	-133,3	-206,5	-275,1	-334,4	-348,0	-356,5	-359,8

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	Jan.25	fev.25	mar.25	Apr. 25	May.25	Jun 25	July 25	Aug. 25	sen.25	Oct. 25	Nov. 25	Dec. 25
<b>INVESTMENT CASH FLOW (ICEF)</b>	<b>-84,0</b>											
Capital expenditures	84,0											
<b>OPERATING CASH FLOW (OPF)</b>	<b>10,5</b>	<b>11,3</b>	<b>-6,0</b>	<b>17,8</b>	<b>23,1</b>	<b>10,0</b>	<b>47,9</b>	<b>47,9</b>	<b>29,5</b>	<b>28,4</b>	<b>28,4</b>	<b>10,0</b>
Revenue total	126,0	138,6	151,2	163,8	176,4	189,0	189,0	189,0	189,0	189,0	189,0	189,0
Expenses total	104,5	110,9	117,2	123,5	129,9	136,2	116,7	116,7	116,7	136,2	136,2	136,2
<i>Variable costs</i>	<i>78,9</i>	<i>85,2</i>	<i>91,6</i>	<i>97,9</i>	<i>104,2</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>
<i>Fixed costs</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>6,1</i>	<i>6,1</i>	<i>6,1</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>
Accrued taxes and payments	11,0	16,4	40,0	22,5	23,4	42,9	24,4	24,4	42,9	24,4	24,4	42,9
<b>FINANCIAL CASH FLOW (FDP)</b>	<b>84,0</b>											
Own funds	84,0											
<b>Net cash flow (NFC)</b>	<b>-73,5</b>	<b>11,3</b>	<b>-6,0</b>	<b>17,8</b>	<b>23,1</b>	<b>10,0</b>	<b>47,9</b>	<b>47,9</b>	<b>29,5</b>	<b>28,4</b>	<b>28,4</b>	<b>10,0</b>
<b>Cumulative NPD</b>	<b>-440,0</b>	<b>-428,6</b>	<b>-434,6</b>	<b>-416,8</b>	<b>-393,7</b>	<b>-383,8</b>	<b>-335,9</b>	<b>-287,9</b>	<b>-258,5</b>	<b>-230,1</b>	<b>-201,7</b>	<b>-191,7</b>
Cash balance at the beginning of the period	-132,7	-122,2	-110,9	-116,9	-99,1	-76,0	-66,0	-18,1	29,8	59,3	87,7	116,1
Cash balance at the end of the period	-122,2	-110,9	-116,9	-99,1	-76,0	-66,0	-18,1	29,8	59,3	87,7	116,1	126,0
<b>Net discounted income (NPV)</b>	<b>-69,7</b>	<b>10,7</b>	<b>-5,6</b>	<b>16,6</b>	<b>21,4</b>	<b>9,2</b>	<b>43,9</b>	<b>43,6</b>	<b>26,7</b>	<b>25,6</b>	<b>25,4</b>	<b>8,9</b>
<b>NPV on an accrual basis</b>	<b>-429,5</b>	<b>-418,8</b>	<b>-424,4</b>	<b>-407,8</b>	<b>-386,4</b>	<b>-377,3</b>	<b>-333,4</b>	<b>-289,8</b>	<b>-263,1</b>	<b>-237,5</b>	<b>-212,1</b>	<b>-203,3</b>



	Jan.26	Feb.26	mar.26	Apr.26	May.26	Jun 26	July 26.	Aug 26	sen.26	Oct. 26	Nov. 26	Dec. 26
<b>INVESTMENT CASH FLOW (ICEF)</b>												
Capital expenditures												
<b>OPERATING CASH FLOW (OPF)</b>	<b>34,8</b>	<b>34,8</b>	<b>11,0</b>	<b>34,8</b>	<b>34,8</b>	<b>11,0</b>	<b>34,8</b>	<b>34,8</b>	<b>11,0</b>	<b>34,8</b>	<b>34,8</b>	<b>11,0</b>
Revenue total	196,6	196,6	196,6	196,6	196,6	196,6	196,6	196,6	196,6	196,6	196,6	196,6
Expenses total	136,2	136,2	136,2	136,2	136,2	136,2	136,2	136,2	136,2	136,2	136,2	136,2
<i>Variable costs</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>	<i>110,6</i>
<i>Fixed costs</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>
Accrued taxes and payments	25,5	25,5	49,4	25,5	25,5	49,4	25,5	25,5	49,4	25,5	25,5	49,4
<b>FINANCIAL CASH FLOW (FDP)</b>												
Own funds												
<b>Net cash flow (NFC)</b>	<b>34,8</b>	<b>34,8</b>	<b>11,0</b>	<b>34,8</b>	<b>34,8</b>	<b>11,0</b>	<b>34,8</b>	<b>34,8</b>	<b>11,0</b>	<b>34,8</b>	<b>34,8</b>	<b>11,0</b>
<b>Cumulative NPD</b>	<b>-156,9</b>	<b>-122,1</b>	<b>-111,1</b>	<b>-76,2</b>	<b>-41,4</b>	<b>-30,4</b>	<b>4,4</b>	<b>39,2</b>	<b>50,2</b>	<b>85,1</b>	<b>119,9</b>	<b>130,9</b>
Cash balance at the beginning of the period	126,0	160,9	195,7	206,7	241,5	276,3	287,3	322,2	357,0	368,0	402,8	437,6
Cash balance at the end of the period	160,9	195,7	206,7	241,5	276,3	287,3	322,2	357,0	368,0	402,8	437,6	448,6
<b>Net discounted income (NPV)</b>	<b>30,8</b>	<b>30,6</b>	<b>9,6</b>	<b>30,2</b>	<b>30,1</b>	<b>9,5</b>	<b>29,7</b>	<b>29,5</b>	<b>9,3</b>	<b>29,2</b>	<b>29,0</b>	<b>9,1</b>
<b>NPV on an accrual basis</b>	<b>-172,5</b>	<b>-141,9</b>	<b>-132,3</b>	<b>-102,0</b>	<b>-71,9</b>	<b>-62,5</b>	<b>-32,8</b>	<b>-3,2</b>	<b>6,1</b>	<b>35,3</b>	<b>64,3</b>	<b>73,4</b>

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	Jan.27	fev.27	mar.27	Apr.27	May.27	Jun.27	July 27.	Aug. 27	sen.27	Oct. 27	Nov.27	Dec. 27
<b>INVESTMENT CASH FLOW (ICEF)</b>												
Capital expenditures												
<b>OPERATING CASH FLOW (OPF)</b>	<b>39,1</b>	<b>39,1</b>	<b>12,7</b>	<b>39,1</b>	<b>39,1</b>	<b>12,7</b>	<b>39,1</b>	<b>39,1</b>	<b>12,7</b>	<b>39,1</b>	<b>39,1</b>	<b>12,7</b>
Revenue total	204,4	204,4	204,4	204,4	204,4	204,4	204,4	204,4	204,4	204,4	204,4	204,4
Expenses total	139,0	139,0	139,0	139,0	139,0	139,0	139,0	139,0	139,0	139,0	139,0	139,0
<i>Variable costs</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>	<i>113,4</i>
<i>Fixed costs</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>
Accrued taxes and payments	26,3	26,3	52,7	26,3	26,3	52,7	26,3	26,3	52,7	26,3	26,3	52,7
<b>FINANCIAL CASH FLOW (FDP)</b>												
Own funds												
<b>Net cash flow (NFC)</b>	<b>39,1</b>	<b>39,1</b>	<b>12,7</b>	<b>39,1</b>	<b>39,1</b>	<b>12,7</b>	<b>39,1</b>	<b>39,1</b>	<b>12,7</b>	<b>39,1</b>	<b>39,1</b>	<b>12,7</b>
<b>Cumulative NPD</b>	<b>169,9</b>	<b>209,0</b>	<b>221,7</b>	<b>260,8</b>	<b>299,9</b>	<b>312,6</b>	<b>351,6</b>	<b>390,7</b>	<b>403,4</b>	<b>442,5</b>	<b>481,6</b>	<b>494,3</b>
Cash balance at the beginning of the period	448,6	487,7	526,8	539,5	578,6	617,6	630,3	669,4	708,5	721,2	760,2	799,3
Cash balance at the end of the period	487,7	526,8	539,5	578,6	617,6	630,3	669,4	708,5	721,2	760,2	799,3	812,0
<b>Net discounted income (NPV)</b>	<b>32,2</b>	<b>32,0</b>	<b>10,4</b>	<b>31,6</b>	<b>31,4</b>	<b>10,2</b>	<b>31,1</b>	<b>30,9</b>	<b>10,0</b>	<b>30,5</b>	<b>30,4</b>	<b>9,8</b>
<b>NPV on an accrual basis</b>	<b>105,6</b>	<b>137,6</b>	<b>148,0</b>	<b>179,6</b>	<b>211,1</b>	<b>221,2</b>	<b>252,3</b>	<b>283,2</b>	<b>293,2</b>	<b>323,7</b>	<b>354,1</b>	<b>363,9</b>

	Jan.28	fev.28	mar.28	Apr.28	May.28	Jun.28	July 28.	Aug.28	sen.28	Oct. 28	Nov.28	Dec. 28
<b>INVESTMENT CASH FLOW (ICEF)</b>												
Capital expenditures												
<b>OPERATING CASH FLOW (OPF)</b>	<b>43,5</b>	<b>43,5</b>	<b>14,5</b>	<b>43,5</b>	<b>43,5</b>	<b>14,5</b>	<b>43,5</b>	<b>43,5</b>	<b>14,5</b>	<b>43,5</b>	<b>43,5</b>	<b>14,5</b>
Revenue total	212,6	212,6	212,6	212,6	212,6	212,6	212,6	212,6	212,6	212,6	212,6	212,6
Expenses total	142,0	142,0	142,0	142,0	142,0	142,0	142,0	142,0	142,0	142,0	142,0	142,0
<i>Variable costs</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>	<i>116,3</i>
<i>Fixed costs</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>
Accrued taxes and payments	27,1	27,1	56,1	27,1	27,1	56,1	27,1	27,1	56,1	27,1	27,1	56,1
<b>FINANCIAL CASH FLOW (FDP)</b>												
Own funds												
<b>Net cash flow (NFC)</b>	<b>43,5</b>	<b>43,5</b>	<b>14,5</b>	<b>43,5</b>	<b>43,5</b>	<b>14,5</b>	<b>43,5</b>	<b>43,5</b>	<b>14,5</b>	<b>43,5</b>	<b>43,5</b>	<b>14,5</b>
<b>Cumulative NPD</b>	<b>537,8</b>	<b>581,3</b>	<b>595,8</b>	<b>639,3</b>	<b>682,8</b>	<b>697,3</b>	<b>740,8</b>	<b>784,3</b>	<b>798,8</b>	<b>842,3</b>	<b>885,8</b>	<b>900,3</b>
Cash balance at the beginning of the period	812,0	855,5	899,0	913,5	957,0	1 000,6	1 015,0	1 058,5	1 102,1	1 116,5	1 160,1	1 203,6
Cash balance at the end of the period	855,5	899,0	913,5	957,0	1 000,6	1 015,0	1 058,5	1 102,1	1 116,5	1 160,1	1 203,6	1 218,1
<b>Net discounted income (NPV)</b>	<b>33,4</b>	<b>33,2</b>	<b>11,0</b>	<b>32,8</b>	<b>32,6</b>	<b>10,8</b>	<b>32,3</b>	<b>32,1</b>	<b>10,6</b>	<b>31,7</b>	<b>31,5</b>	<b>10,4</b>
<b>NPV on an accrual basis</b>	<b>397,3</b>	<b>430,6</b>	<b>441,6</b>	<b>474,4</b>	<b>507,1</b>	<b>517,9</b>	<b>550,1</b>	<b>582,2</b>	<b>592,8</b>	<b>624,5</b>	<b>656,0</b>	<b>666,5</b>

Organization of the work of the enterprise for the production of frame and panel wooden houses

	Jan.29	fev.29	mar.29	Apr.29	May.29	June 29	July 29.	Aug. 29	sen.29	Oct. 29	Nov. 29	Dec. 29
<b>INVESTMENT CASH FLOW (ICEF)</b>												
Capital expenditures												
<b>OPERATING CASH FLOW (OPF)</b>	<b>46,4</b>	<b>46,4</b>	<b>15,3</b>	<b>46,4</b>	<b>46,4</b>	<b>16,3</b>	<b>47,4</b>	<b>47,4</b>	<b>16,3</b>	<b>47,4</b>	<b>47,4</b>	<b>16,3</b>
Revenue total	219,0	219,0	219,0	219,0	219,0	219,0	219,0	219,0	219,0	219,0	219,0	219,0
Expenses total	145,0	145,0	145,0	145,0	145,0	143,8	143,8	143,8	143,8	143,8	143,8	143,8
<i>Variable costs</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>	<i>119,4</i>
<i>Fixed costs</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>25,6</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>
Accrued taxes and payments	27,6	27,6	58,7	27,6	27,6	58,9	27,8	27,8	58,9	27,8	27,8	58,9
<b>FINANCIAL CASH FLOW (FDP)</b>												
Own funds												
<b>Net cash flow (NFC)</b>	<b>46,4</b>	<b>46,4</b>	<b>15,3</b>	<b>46,4</b>	<b>46,4</b>	<b>16,3</b>	<b>47,4</b>	<b>47,4</b>	<b>16,3</b>	<b>47,4</b>	<b>47,4</b>	<b>16,3</b>
<b>Cumulative NPD</b>	<b>946,7</b>	<b>993,0</b>	<b>1 008,3</b>	<b>1 054,6</b>	<b>1 101,0</b>	<b>1 117,3</b>	<b>1 164,6</b>	<b>1 212,0</b>	<b>1 228,3</b>	<b>1 275,7</b>	<b>1 323,0</b>	<b>1 339,3</b>
Cash balance at the beginning of the period	1 218,1	1 264,4	1 310,8	1 326,0	1 372,4	1 418,7	1 435,0	1 482,4	1 529,8	1 546,1	1 593,4	1 640,8
Cash balance at the end of the period	1 264,4	1 310,8	1 326,0	1 372,4	1 418,7	1 435,0	1 482,4	1 529,8	1 546,1	1 593,4	1 640,8	1 657,1
<b>Net discounted income (NPV)</b>	<b>33,2</b>	<b>33,0</b>	<b>10,8</b>	<b>32,6</b>	<b>32,4</b>	<b>11,3</b>	<b>32,7</b>	<b>32,5</b>	<b>11,1</b>	<b>32,2</b>	<b>32,0</b>	<b>10,9</b>
<b>NPV on an accrual basis</b>	<b>699,6</b>	<b>732,6</b>	<b>743,4</b>	<b>776,0</b>	<b>808,5</b>	<b>819,8</b>	<b>852,5</b>	<b>885,1</b>	<b>896,2</b>	<b>928,4</b>	<b>960,3</b>	<b>971,3</b>

Organization of the work of the enterprise for the production of frame and panel wooden houses

	Jan.30	fev.30	mar.30	Apr.30	May.30	Jun 30	July 30	Aug 30	sen.30	Oct. 30	Nov. 30	Dec. 30
<b>INVESTMENT CASH FLOW (ICEF)</b>												
Capital expenditures												
<b>OPERATING CASH FLOW (OPF)</b>	<b>50,3</b>	<b>50,3</b>	<b>17,2</b>	<b>50,3</b>	<b>50,3</b>	<b>17,2</b>	<b>50,3</b>	<b>50,3</b>	<b>17,2</b>	<b>50,3</b>	<b>50,3</b>	<b>17,2</b>
Revenue total	225,5	225,5	225,5	225,5	225,5	225,5	225,5	225,5	225,5	225,5	225,5	225,5
Expenses total	146,9	146,9	146,9	146,9	146,9	146,9	146,9	146,9	146,9	146,9	146,9	146,9
<i>Variable costs</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>	<i>122,5</i>
<i>Fixed costs</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>	<i>24,4</i>
Accrued taxes and payments	28,3	28,3	61,4	28,3	28,3	61,4	28,3	28,3	61,4	28,3	28,3	61,4
<b>FINANCIAL CASH FLOW (FDP)</b>												
Own funds												
<b>Net cash flow (NFC)</b>	<b>50,3</b>	<b>50,3</b>	<b>17,2</b>	<b>50,3</b>	<b>50,3</b>	<b>17,2</b>	<b>50,3</b>	<b>50,3</b>	<b>17,2</b>	<b>50,3</b>	<b>50,3</b>	<b>17,2</b>
<b>Cumulative NPD</b>	<b>1 389,6</b>	<b>1 439,9</b>	<b>1 457,1</b>	<b>1 507,4</b>	<b>1 557,7</b>	<b>1 574,9</b>	<b>1 625,2</b>	<b>1 675,5</b>	<b>1 692,7</b>	<b>1 743,0</b>	<b>1 793,3</b>	<b>1 810,5</b>
Cash balance at the beginning of the period	1 657,1	1 707,4	1 757,7	1 774,9	1 825,2	1 875,5	1 892,7	1 943,0	1 993,3	2 010,5	2 060,8	2 111,1
Cash balance at the end of the period	1 707,4	1 757,7	1 774,9	1 825,2	1 875,5	1 892,7	1 943,0	1 993,3	2 010,5	2 060,8	2 111,1	2 128,3
<b>Net discounted income (NPV)</b>	<b>33,6</b>	<b>33,4</b>	<b>11,3</b>	<b>33,0</b>	<b>32,8</b>	<b>11,1</b>	<b>32,4</b>	<b>32,2</b>	<b>11,0</b>	<b>31,8</b>	<b>31,7</b>	<b>10,8</b>
<b>NPV on an accrual basis</b>	<b>1 004,8</b>	<b>1 038,2</b>	<b>1 049,6</b>	<b>1 082,5</b>	<b>1 115,3</b>	<b>1 126,5</b>	<b>1 158,9</b>	<b>1 191,1</b>	<b>1 202,0</b>	<b>1 233,9</b>	<b>1 265,5</b>	<b>1 276,3</b>

## **Information about the excuter of the project**

Business plan "Opening of clinker 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.

### **RESEARCH PERFORMER:**

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