

# **Business plan**

# Construction of a plant for the production of milk and dairy products



June 2023.



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#### Methodological comments on the feasibility study

This feasibility study is a blueprint for the implementation of business operations of the firm, which contains information about the firm, the product, its production, the organization of operations and their effectiveness.

The planning period is 2024-2033.

#### Object and subject of the feasibility study

The object of the study is the creation of a plant for the production of milk and dairy products.

#### Goals and objectives of the feasibility study

The purpose of the feasibility study: to assess the economic efficiency of the construction of a plant for the production of milk and dairy products.

Tasks of the feasibility study:

- Assessment of the economic efficiency of the project;
- Justification of investment funds for the implementation of the project.

#### **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 from websites of the investigated of the subject web-resources of manufacturers and suppliers, electronic trading platforms, bulletin boards, specialized forums, online stores);
- Regional and federal media;
- Portals of information disclosure (reporting of public companies);

#### Dissemination of the feasibility study

The feasibility study materials are not intended for wide distribution or publication. When submitting a feasibility study users should be made aware of the purpose of this document, the assumptions adopted for its preparation, and any restrictions on its use.



#### Scope of analysis

The feasibility study was 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

The purpose of this project is to substantiate the economic efficiency and feasibility of constructing a plant for the production of milk and sour-milk products.

The initiator of this project is specified, which is a diversified enterprise and operates in several markets:

- Construction;
- Milk production;
- Crop Production;
- Soybean processing.

Within the framework of this project it is supposed to organize a plant for processing whole milk, its own production capacity of 18,250 tons per year, for the production of dairy and dairy products. The plant will be built in Kamashinsky district, in the vicinity of the district center.

The projected plant will produce dairy and fermented dairy products, with a total production capacity of about 16,000 tons of finished products per year:

- Pasteurized milk with fat content of 3.2%, 2.5%, 1.5%;
- Dairy products with a fat content of 3.2%, 2.5%, 1.5%;
- Cottage cheese with a fat content of 1-9%;
- Drinking cream with a fat content of 10%;
- Sour cream 20%, 15%;
- Butter with a fat content of 72.5%;
- Cheese.

The equipment of the Bulgarian company "DONIDO machine industry" will be purchased for production. DONIDO is the largest manufacturer of equipment and production lines for dairy industry in Bulgaria. All components used in the production of the equipment are supplied by leading Western European companies, which are flawless and proven leaders in their field of production1.

The idea behind the project is to produce dairy and fermented dairy products by processing whole milk, which will not be inferior in quality to imported counterparts, while the price will be at the level of Russian producers.



The place of the project implementation - Kamashi district.

The required area of land - 0.8 hectares.

The required area of production facilities - 5,000 square meters. m.

Mode of operation - 7 days a week.

The staff - 124 people, of which the number of production personnel is 73 people.

The stages of project implementation are shown in Table 1.1:

Table 1.1 Stages of project implementation

Project Stage	Beginni ng of work	Duration, days	End of job
Rationale for the effectiveness of the project	01.11.2023	91	31.01.2024
Registration of permits	01.01.2024	90	31.03.2024
Development of project documentation	01.01.2024	182	01.07.2024
Construction of production facilities	01.03.2024	245	01.11.2024
Selection, purchase, delivery and installation of basic equipment	01.08.2024	122	01.12.2024
Lease of a land plot at the time of the project launch	01.12.2024	30	31.12.2024
Equipping production facilities	01.09.2024	91	01.12.2024
Development of a marketing plan, making a brand book, website, etc.	01.11.2024	60	31.12.2024
Formation of the staff schedule and staff recruitment	01.11.2024	60	31.12.2024
Formation of working capital (purchase of raw materials and consumables)	01.12.2024	30	31.12.2024
Start of plant operations	01.01.2025	59	01.03.2025

Source: Global Innovation Trade analysis and calculations



#### **Investments**

The volume of investment for the implementation of the project is **5.6 million dollars.** Payback period of the project under consideration is 2 years and 3 months, taking into account discounting. The figure below shows the required amount of investments.

Preparatory works \$0.274 million. Own funds 2.05 million dollars Preparing 30% of investment Required amount plant rooms 1.68 million. of investment 5.6 million. Buying Borrowed funds \$2.9 million. equipment 70% of the investment 3.9 million. \$0.134 million. Extras.

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		
Calculation period (planning horizon), months.	120	
Net income (NV), thousand dollars.	53029,1	
Net discounted income (NPV), thousand dollars.	29992,9	
Internal rate of return (IRR), % per year	109%	
Profitability index (PI), units.	6,33	
Payback period (PB), months.	25,9	
Discounted payback period (DPB), months.	27,3	
Investments in the project, thousand dollars.	5627,6	
Average return on sales for the project, %	33%	
Net income (cumulative), thousand dollars.	53400,4	
Discount rate, %	10,07%	

Source: Global Innovation Trade calculations



0,

-10 000,0 <del>-5 305,2</del>

-5 000,0

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:

35 000,0 30 000,0 25 000,0 20 000,0 15 000,0 10 000,0 5 000,0 3 023,5 7 919,8

Jan/24 Jan/25 Jan/26 Jan/27 Jan/28 Jan/29 Jan/30 Jan/31 Jan/32 Jan/33

Figure 1.2 Graph of the NPV of the project

- 184,8

-3 435,5

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 2033 will be **9.9 million dollars.** 



#### 2. THE MERITS OF THE PROPOSAL

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

As part of this project in the Kamashinsky district it is planned to organize the production of dairy and fermented milk products with the introduction of advanced technologies and means of mechanization of the Bulgarian company "DONIDO machine industry", the construction of modern production facilities.

The main activity of the complex is the production of dairy and fermented milk products. One of the advantages of the project is its own raw material base. The production capacity of the projected plant is 18,250 tons of whole milk per year.

The main goal of the project is to produce dairy and fermented dairy products by processing whole milk, which will not be inferior in quality to imported counterparts, and the price will be at the level of Russian producers.

The company's strategic goals are:

- Making a profit from the activities carried out;
- Creation of a vertically integrated holding;
- Creating a quality competitive product;

The planned annual production figures at 100% production load are:

- Pasteurized milk with fat content of 1.5-3.2% 8,103 tons;
- Dairy products (kefir, ryazhenka, etc.), fat content 1.5-3.2% 4,884 tons;
- Cottage cheese, fat content 1-9% 337 tons;
- Whey 1,177 tons;
- Cream of potable water, fat content 10% 199 tons;
- Sour cream, 15-20% fat content 394 tons;
- Butter with a fat content of 72.5% 267 tons;
- Cheese 433 tons.

Channels of sale of dairy and fermented milk products:

- Network and non-network stores:
- Wholesale grocery stores Kashkadarya region, the Republic of Uzbekistan.
- CIS Food Markets.



## 2.2 Project Location

The dairy and sour-milk products plant will be located in Kamashi district of Kashkadarya region. The area of the plant will be 0.8 ha.

The diagram below shows the location of the plant.

Figure 2.1 Plant layout

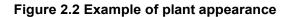


From the city center - 600 meters; electricity is available; sewage is available; water supply is available.

Source: Global Innovation Trade

An example of the appearance of the plant is shown in the figure below.







Source : https://yandex.ru

The projected dairy plant will meet all quality standards. A description of the production facilities and calculation of construction costs will be given in paragraphs 4.1 and 4.2 of this draft respectively.



#### 3. MARKETING PLAN

#### Milk market analysis

The Republic of Uzbekistan is the 56th largest country in the world by area (448,924 km²), 35,821 thousand people. - population as of October 1, 2022 (+549.7 thousand people +1.6% by 2022). 49.1% share of agricultural land

According to statistics from the State Committee of the Republic of Uzbekistan, the party GDP and independent party in 2022 amounted to 888.3 trillion soums, the true GDP and the real expression was 5.7%.

The share of agriculture, forestry and fisheries in the republic's GDP was 25,1%. Dairy Cattle Breeding Uzbekistan

According to statistics from the State Committee of the Republic of Uzbekistan on January 1, 2023 there were 4.9 million heads of cattle (+2% or +99.6 thousand heads in 2021), of which 4.5 million heads in dehkan farms, 367 thousand heads contained in farms, 82 thousand heads - in agricultural enterprises.

2 Dehkan farms, thousand heads Farms,ths heads Agricultural enterprises, thousand cattle

Table 3 Population of cows in Uzbekistan



In Uzbekistan, the non-commodity sector, dekhkan farms, dominates dairy cattle breeding, but farms and agricultural enterprises show high growth rates. The number of cows in dekhkan farms increased by 14.4% compared to 2015, the growth of cows in farms by 2022 compared to 2015 was 95.3%, in agricultural enterprises 122%.

The number of cows per square kilometer in Uzbekistan in 2022 was 11 heads, in Russia by comparison this indicator is 0.3 heads. There are 7 people per cow in Uzbekistan and 31 people per cow in Russia. It is worth noting that in Uzbekistan, the population grew by an average of 2% per year in 2015-2022.



Table 4 Number of inhabitants per one roof, heads

Source: Global Innovation Trade

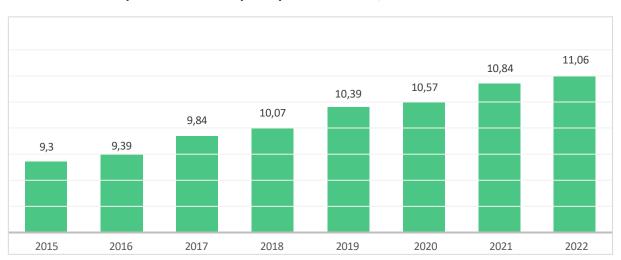


Table 5 Population of cows per square kilometer, heads



Raw milk production in Uzbekistan in 2022 reached 11.6 million tons, 3% more than in 2021 and 29% more than in 2015. 93.4% of milk is produced in dehkan farms, 5.4% in farms, and 1.2% in agricultural enterprises. Production on dekhan farms in 2022 was 10.8 million tons, 3% more than in 2021. Farms produced 632,200 tons in 2022, 8% more than in 2021. Farms produced 135.8 thousand tons, 25% more than in 2021.

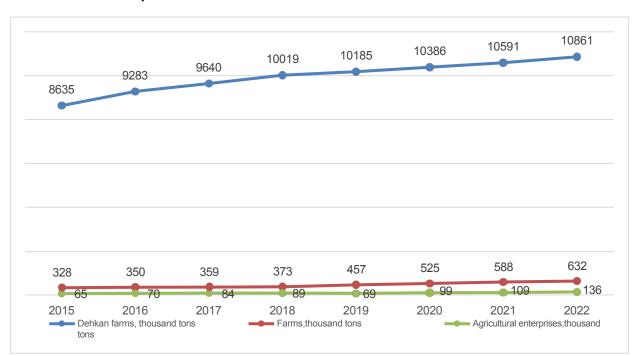
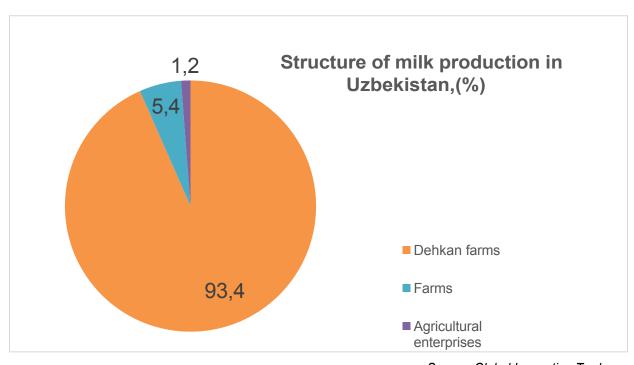


Table 6 Milk production in Uzbekistan





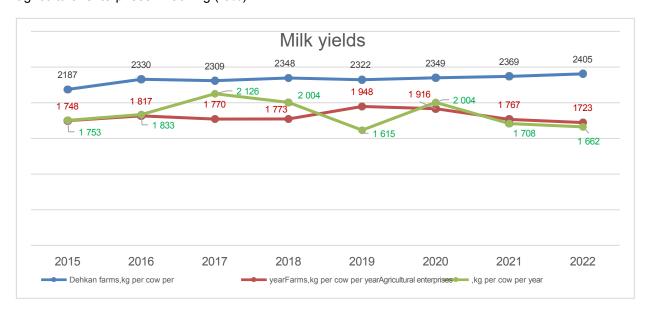
In terms of milk production in Uzbekistan, Samarkand province is the leader (1.4 million tons in 2022), with Kashkadarya province in second place (1.3 million tons) and Ferghana province in third (1.1 million tons).

Samarkand region 1378 Kashkadarya region 1278 Ferghana region Khorezm 1105 region Bukhara region 1097 Andijan region Tashkent 1053 region Surkhandarya region 1038 Namangan region Jizzak 975 region Navoi region Republic of Karakalpakstan 758 674 521 434

Table 7 Milk production in the regions of Uzbekistan in 2022, thousand tons

Source: Global Innovation Trade

In Uzbekistan today the productivity is low, in 2022 the average milk yield in dehkan farms was 2405 kg per cow (+1% compared to 2021), in farms 1723 kg per cow (-2% compared to 2021), in agricultural enterprises - 1662 kg (-3%).





Source: Global Innovation Trade

#### Dairy industry in Uzbekistan

According to estimates of the analytical network IFCN, the marketability of milk in Uzbekistan is only 30%, in fact, no more than 3 million tons are received for processing.

According to the State Statistics Committee, large enterprises in Uzbekistan produced 389.4 tons of butter and 5659.1 tons of yogurt in January-December 2022.

#### Imports of dairy products to Uzbekistan

Imports of milk and cream to Uzbekistan according to UN Comtrade in 2021 amounted to 3.1 thousand tons, 946 tons more than in 2020. The largest supplier of milk and cream to Uzbekistan in 2021 was the Republic of Belarus (55%), followed by Russia (31%).

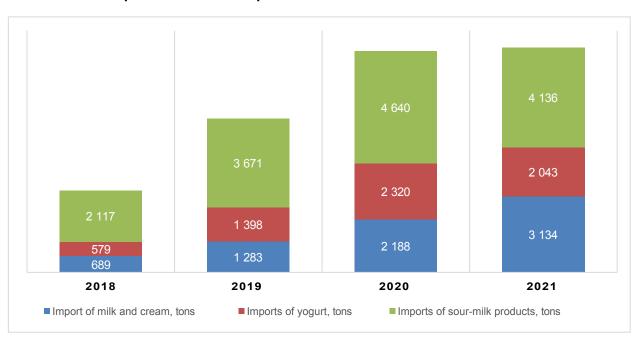


Table 8 Imports of whole-milk products in Uzbekistan

Source: Global Innovation Trade

Imports of yogurt in 2021 was 2 thousand tons, 277 tons less than in 2020. The Republic of Kazakhstan accounted for 89% of supplies.

Imports of other sour-milk products in 2021 were 4.1 thousand tons, 503 tons less than in 2020. 95% of deliveries were from Russia.

Imports of cheese and cottage cheese in Uzbekistan in 2021 was 3.3 thousand tons, 117 tons more than in 2020. 54% of supplies are from Russia, 20% from the Republic of Belarus.



2 701 1 587 2 701 2

Table 9 Imports of cheese and cottage cheese to Uzbekistan (tons)

Source: Global Innovation Trade

Imports of butter in 2021 decreased by 481 tons to 2.3 thousand tons. 34% supplies from France, 16% from New Zealand, 13% from the Republic of Belarus.

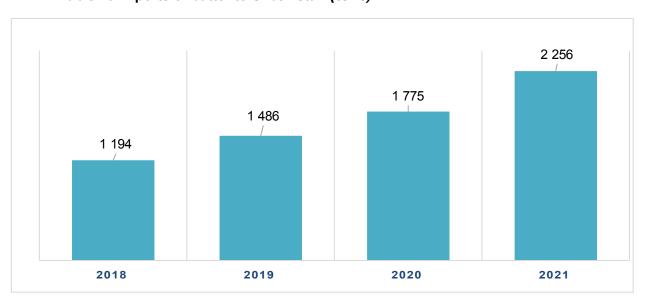


Table 10 Imports of butter to Uzbekistan (tons)

Source: Global Innovation Trade

Imports of COM in 2021 was 2.7 thousand tons (-113 tons), imports of CCM only 8 tons (-293 tons). The largest supplier of COM is the Republic of Belarus (51%), also COM to Uzbekistan



Iran (16%) and Kyrgyzstan (17%). The only supplier of SCM in 2021 was the Republic of Kyrgyzstan.

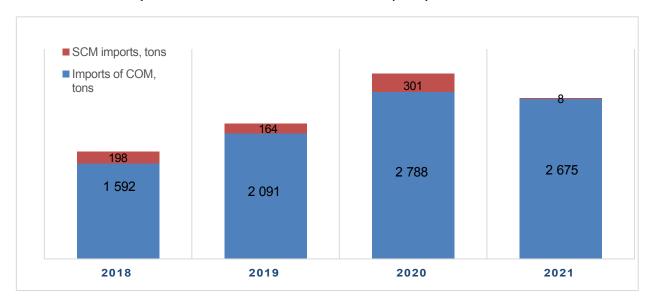


Table 11 Imports of COM and CCM in Uzbekistan (tons)

Source: Global Innovation Trade

Imports of dry whey in 2021 was 3 thousand tons, 3.1 thousand tons less than in 2020. The largest supplier was the Republic of Belarus (32%).

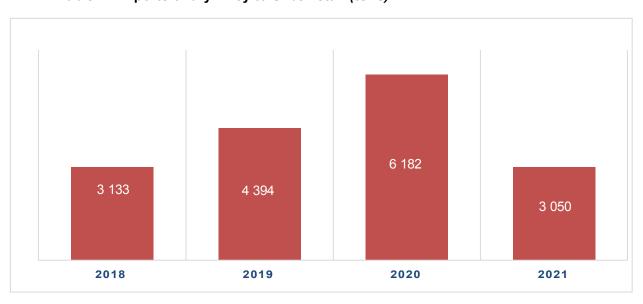


Table 12 Imports of dry whey to Uzbekistan (tons)



Supplies of condensed milk to Uzbekistan in 2021 were 337 tons, 872 tons less than in 2020. 56% of supplies in 2021 were from Russia, 22% from Ukraine.

 469
 539

 2018
 2019

 2020
 2021

Table 13 Imports of condensed milk in Uzbekistan (tons)

Source: Global Innovation Trade

#### **Export of dairy products from Uzbekistan**

Exports of dairy products from Uzbekistan are small at the moment, mainly small amounts of supplies go to the countries of Central Asia.

Milk and cream exports from Uzbekistan in 2021 amounted to 312.8 tons, 42 tons less than in 2020. 61% of milk and cream exports from Uzbekistan went to Tajikistan, 37% to Afghanistan, and 2% to Turkmenistan.

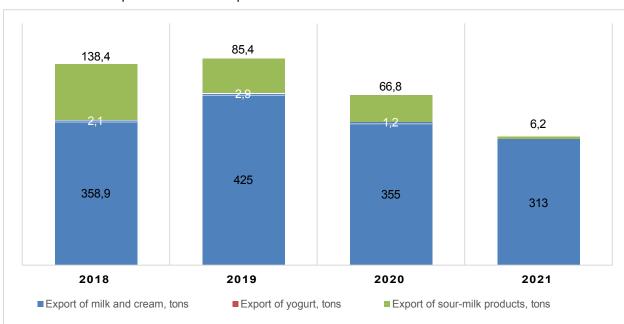


Table 14 Exports of whole-milk products from Uzbekistan



Export of sour-milk products in 2021 was 6.2 tons, 60.5 tons less than in 2020. 65% of this volume was supplied to the US market, 28% to Kazakhstan, and 7% to the Czech Republic.

Exports of cheese and cottage cheese in 2021 from Uzbekistan was only 0.3 tons, 4.6 tons less than in 2020. 0.14 tons (55%) was supplied to the U.S., 0.1 ton (38%) supplied 38% to Kazakhstan.

 4,936

 0,003

 2019

 2020

 2021

Table 15 Export of cheese and cottage cheese from Uzbekistan (tons)

Source: Global Innovation Trade

Export of butter in 2021 increased by 115 tons to 152 tons. 78% of deliveries were to Georgia and 22% to Iraq.

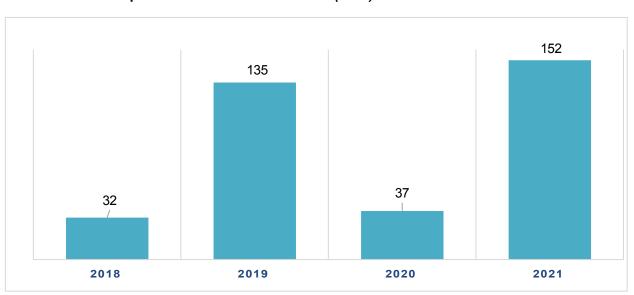


Table 16 Export of butter from Uzbekistan (tons)



In 2021, exports of COM amounted to 35.5 thousand tons (-69.5 tons), exports of SCM only 0.5 tons (-11 tons). 75% of exports of COM was delivered to Tajikistan, 0.3 tons of CCM was also delivered to Tajikistan, 0.2 tons of CCM was delivered to Kyrgyzstan. Also in 2021 Uzbekistan supplied 0.5 tons of dry whey to the United States.

SCM exports, tons
Export of COM, tons

11,5

105,0

0,5

35,5

2018

2019

2020

2021

Table 17 Export of COM and CCM from Uzbekistan (tons)

Source: Global Innovation Trade

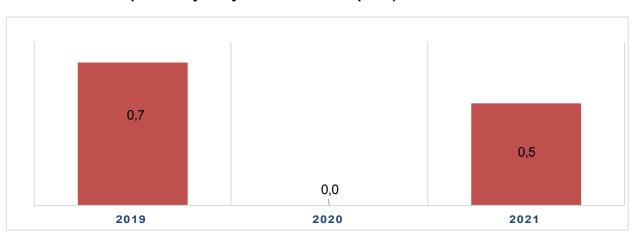


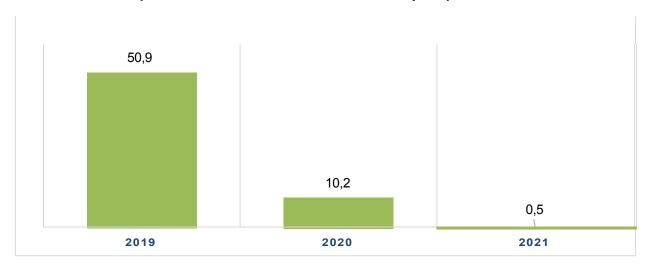
Table 18 Export of dry whey from Uzbekistan (tons)

Source: Global Innovation Trade

In 2021, Uzbekistan exported 0.5 tons of condensed milk to Tajikistan.



Table 19 Export of condensed milk from Uzbekistan (tons)





### 4. ORGANIZATIONAL PLAN

#### 4.1 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;
- Additional staff.

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 4.1. Formation of payroll and staff schedule of the enterprise, thous.

Nº	Job title	Number of employees	Salary of one employee, thousand dollars/month.	Total payroll, thous. dollars.
1	Administrative management personnel	28	0,00	13,52
1.1	CEO	1	0,96	0,96
1.2	Chief Engineer	1	0,66	0,66
1.3	Chief Accountant	1	0,66	0,66
1.4	Accountant	3	0,30	0,90
1.5	Head of TVET	1	0,42	0,42
1.6	The Economist	2	0,36	0,72
1.7	Director of Production	1	0,60	0,60
1.8	Head of Procurement	1	0,54	0,54
1.9	Purchasing Manager	2	0,42	0,84
1.10	Head of the boiler room	1	0,54	0,54
1.11	Head of Compressor Shop	1	0,52	0,52
1.12	Chief mechanic	1	0,58	0,58
1.13	Chief Power Engineer	1	0,54	0,54
1.14	Head of I&C	1	0,54	0,54
1.15	Chief Technology Officer	1	0,60	0,60



1.16	Head of Laboratory	2	0,40	0,79
1.17	Warehouse manager	2	0,42	0,84
1.18	Head of Sales	1	0,60	0,60
1.19	Sales Manager	4	0,42	1,68
2	Production personnel	73	0,00	26,93
2.1	Boiler operator	4	0,42	1,68
2.2	Assistant boiler engineer	4	0,40	1,58
2.3	Boiler mechanic	2	0,42	0,84
2.4	Compressor shop operator	4	0,44	1,78
2.5	Compressor shop fitter	3	0,46	1,37
2.6	Production shop fitter	12	0,42	5,04
2.7	Welder	1	0,44	0,44
2.8	The Mechanic	2	0,46	0,91
2.9	Electrician	3	0,40	1,19
2.10	Locksmith	2	0,52	1,03
2.11	Master	3	0,48	1,44
2.12	Technologist	3	0,34	1,01
2.13	Laboratory Technician	6	0,26	1,58
2.14	Operators of the milk intake department	4	0,31	1,25
2.15	Hardware shop operators	2	0,30	0,60
2.16	Fermentation department operator	4	0,30	1,20
2.17	Bagging department operator	12	0,29	3,46
2.18	Operator of the starter section	2	0,26	0,53
3	Additional personnel	23	0,00	6,70
3.1	Loader	12	0,30	3,60
3.2	Warehouse Clerk	6	0,34	2,02
3.3	Other additional personnel	5	0,22	1,08
	Total	124	0,00	47,15

Source: Global Innovation Trade, Global Innovation Trade calculations

Thus, with a total headcount of 124 people, the monthly payroll turned out to be equal to 47.15 thousand dollars.



# 4.2 Work schedule for the project

A schedule of events for the launch of the project was formed.

Conventionally speaking, the project can be divided into two fundamentally different phases:

- The creation and launching phase of the business;
- project implementation phase.

The table below summarizes the stages of the project.

**Table 4.2 Project Implementation Stages** 

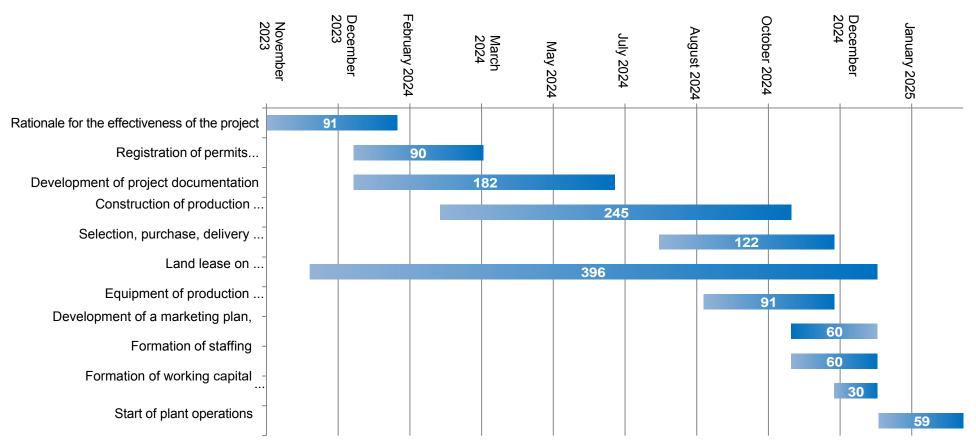
Project Stage	Beginni ng of work	Duration, days	End of job
Rationale for the effectiveness of the project	01.11.2023	91	31.01.2024
Registration of permits	01.01.2024	90	31.03.2024
Development of project documentation	01.01.2024	182	01.07.2024
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Selection, purchase, delivery and installation of basic equipment	01.08.2024	122	01.12.2024
Lease of a land plot at the time of the project launch	01.12.2024	30	31.12.2024
Equipping production facilities	01.09.2024	91	01.12.2024
Development of a marketing plan, making a brand book, website, etc.	01.11.2024	60	31.12.2024
Formation of the staff schedule and staff recruitment	01.11.2024	60	31.12.2024
Formation of working capital (purchase of raw materials and consumables)	01.12.2024	30	31.12.2024
Start of plant operations	01.01.2025	59	01.03.2025

Source: Global Innovation Trade, Global Innovation Trade analysis and calculations

The project implementation schedule is shown in the figure below.







Source: Global Innovation Trade, Global Innovation Trade analysis and calculations

Thus, reaching full capacity and repayment of borrowed funds is calculated up to 2023-2025.



#### 4.3 Sources, forms and conditions of financing

The main investment of the project will be \$5.6 million.

The project is planned to use borrowed funds - 70%. The figure below shows the financing structure of the project.

70%

Figure 4.2 Structure of investment project financing

Own funds of the Project Initiator

Source: Global Innovation Trade analysis and calculations

Thus, the investment of own funds of the Initiator of the project will amount to 3,4 million dollars, borrowed funds - 3,9 million dollars.

The interest rate on the loan (credit) is 10%. The term of the loan is 8 years with a deferred payment of interest and the debt body for 6 months.

Table 4.3. Lending terms and conditions

Borrowed funds

Terms of the investment loan	Per	Month	
	year		
Interest rate on the loan	10%	0,80%	
Loan term	8	96	
Loan vacations	-	6	

Source: Global Innovation Trade analysis and calculations



#### 5. WORK PLAN

#### 5.1 Description of production facilities

0.8 hectares will be allocated for the organization of an enterprise for the production of milk and dairy products. The plant will be located in Kamashi district of Kashkadarya region. A capital building with a total area of 5,000 sq.m. is planned to be constructed on the 0.8 hectare area, which will include:

- Whole milk intake area:
- Centralized apparatus area preparation of whole milk for various technological processes;
- Production shops production of drinking milk and dairy products;
- The sourdough division;
- Premises for storage of finished products;
- Rooms for storage of cleaning equipment, etc.

#### 5.2 Calculating the cost of construction

As part of the project it is planned to bring communications (gas, water, electricity) to the designed plant. The preliminary cost of the communications will be \$ 0.6 million.

The preliminary cost of construction and installation work will be \$1.15 million.

#### 5.3 Equipment description

Suppliers of equipment for the organization of production of dairy and fermented milk products will be a debtor company. The plant will be equipped with modern production equipment of the Bulgarian company "DONIDO machine industry", which will allow to achieve high performance.

DONIDO is the largest manufacturer of equipment and production lines for the dairy industry in Bulgaria. All components used in the equipment is supplied by leading Western European companies, which are impeccable and proven leaders in their industry.



The figure below shows the appearance of the equipment.

Figure 5.1 Appearance of DONIDO equipment



The table below shows the main investments for the purchase of the necessary equipment and vehicles.

Table 5.1 Capital costs for equipment and vehicles

Nº	Capital expenditures	Cost, thousand dollars.
1	Equipment purchase	2 941
2	Equipment installation (10%)	0,294
3	Purchase of motor vehicles	0,62
	Total	3 349



The total cost of purchasing equipment and vehicles will be 3,0 K.

#### 5.4 Description of the technological process

#### 1. Receiving area

Properly organized milk intake is a prerequisite for successful milk processing. The main goal of milk intake is to maintain the quality of the milk coming from the farms. General requirements for which the milk intake is responsible:

- optimal capacity of the receiving system to ensure fast processing and transportation of raw materials into the tanks for storage;
- possibility of raw material deaeration and accurate measurement of its quantity;
- possibility of fast cooling of raw materials in the flow;
- the possibility of rapid laboratory analysis of raw materials;
- high level of hygiene of tdol pipelines and storage tanks, possibility of CIP-washing.

The receiving area can be designed with a high (HLA), medium (MLA) or low (LLA) degree of automation, depending on the customer's wishes.

**Operation scheme:** Accepted raw material enters the receiving and measuring station with a cooler, cooled in the flow using ice water (0÷1°C) to a temperature of 4°C and fed into the tank for milk intake, V=10000 I.

If required, the milk powder is dissolved in the dry product dissolving module, filtered, cooled on the cream plate cooler and fed into the milk receiving tank.

This scheme is used in small and medium-sized plants where the raw material is processed on the same day and the raw material is bacterially clean. Automation level: MLA, CIP wash.

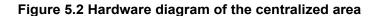
#### 2. Centralized hardware area

Preparation of milk for various technological processes takes place in the apparatus area, which can be centralized, when the technological equipment is located in one room and the processed product is fed to the various technological areas.

The centralized apparatus section is suitable for small and medium-sized enterprises with relatively short process lines, regardless of the number of process sections, or for large enterprises with one or two process sections.

The hardware diagram is shown in the figure below.







#### Work scheme:

- Pasteurized dairy products. The raw milk from the receiving section is fed to the POU, then the milk is deaerated in the deaerator and separated,
  It is normalized to a given fatness, homogenized and pasteurized at 72 ÷ 74°C, followed by a holding time of 20 seconds. In many cases high-temperature pasteurization (for example at 94 ÷ 96°C) with a long soak (for example 5 min) is preferable in order to increase the shelf life of the product. Then the milk is cooled to a temperature of 4 ° C. And is fed into the pasteurized milk tank. Sterile air at a pressure of 0.2 bar is fed into the tank to avoid resuspension of the pasteurized product.
- Raw materials for cheese (or cottage cheese) production arrive at the POU, where Pasteurization mode is established for cheese production, then separated, normalized to a given fat content and pasteurized at a temperature of 72 74 ° C, followed by cooling to 28 34 ° C, depending on the type of final product and fed into the cheese maker (curds).
- Production of sour-milk products by tank method.
   The milk normalized in the receiving and apparatus department goes to the tank. The prepared mixture is fed to the pasteurization and cooling unit, the mixture is deaerated



at 68°C, homogenized at 60°C and pasteurized at 94 ÷ 96°C. The minimum recommended soaking time is 5 minutes, but in some cases it can be as long as 30 minutes. High pasteurization temperature and long exposure is a prerequisite to obtain the best quality clot. The pasteurized product is cooled down to the desired fermentation temperature and transferred to the fermenter, where the fermentation process takes place. At this time, the required quantity of the starter culture and liquid additives (e.g. sterile jam) is dosed into the fermenter by means of a module. The processes in the fermenter are controlled according to preset parameters depending on the type of product under sterile conditions (sterile air at 0.2 bar is fed into the fermenter). The finished product is cooled and sent for packaging. To preserve the clot, the product is transported by volume pumps or under sterile air pressure.

- Production of sour-milk products using the thermostatic method. Distinction from the tank method begins at the point of pasteurization in the pasteurization-cooling unit, from which the product cooled to fermentation temperature enters the fermenter. The product starter from the module is dosed directly into the fermenter. After that the mixture is intensively mixed and fed to the packing. During the filling process, the mixing mechanism works with low intensity in order to keep the product in a homogeneous state. As a starter culture is used, the filling process should be delayed from 20 to 30 minutes in order to avoid the formation of clots in the tank. If dried starter culture is used, the process can last from 60 minutes, depending on the activity of the starter culture. Fermentation takes place in a thermostatic chamber at the temperature required for the product. After reaching the required acidity the product is removed from the chamber and quickly cooled to a temperature of 4 ÷ 6°C, at which the clot is finally formed.
- The production of cottage cheese. A traditional and popular type of cottage cheese, characterized by fine grain, the structure of which depends on the method of processing and packaging. The color of cottage cheese is white to pale yellow with a pronounced lactic acid flavor and a delicate creamy taste if the cottage cheese is fatty. The yield of the product is from 11% to 15%, depending on the content of protein and fat in the milk from which the product is produced. Fermentation, cutting and heat treatment of the product takes place in a module, followed by whey draining, cooling the mass to 8÷10°C and packaging.
  - Production of soft and shaped cheeses such as "pasta filata". Characteristic feature at production cheese like "pasta filata is



thermoplasticization. Thermoplasticization is a type of thermo-mechanical processing of cheese dough, uninterrupted kneading and stretching in order to obtain a fibrous structure. The cheddarized cheese mass is heated until it reaches a doughy state, then fed into molds or multiforms in which the product is formed to a given weight. Figured cheeses are produced from strands 4-16 mm in diameter, which are then braided into various shapes.

#### 5.5 Raw materials and components

The main raw material for the production of dairy and fermented milk products is whole milk. Whole milk will be supplied at the average market price from farms and from the local population. The initial working capital requirement is \$166.1 thousand.

#### 5.6 Other technological issues

As an IT-solution for the organization of the production enterprise offered a specialized software - "1C Dairy 8".

This configuration is characterized by an automated system that allows you to accurately account for the amount of milk delivered. It is possible to account for the milk delivered by the main milk suppliers, with automatic registration of the parameters according to which the grade is set. The program can also set purchase prices based on the data entered in advance. For each type of raw material, the quality composition can be edited by the user at any time.

#### Software Features:

- Complete management of milk production, including planning for further consolidation;
- Competent planning of production capacity utilization with its breakdown by necessary technological operations, formation of detailed technological schedule for each shift, accounting and determination of resource reserves, as well as constant monitoring of the performance of all production operations;
- Continuous analysis and identification of deviations between the planned and actual implementation of the production plan, identifying the causes;
- Cost management;
- Competent and detailed calculation of the cost of all manufactured products;



- In addition, the system can keep a recipe of products, use this data in production planning and determining the real cost of production;
- Maintaining operational accounting: the formation of all the necessary package of documents, taking into account the specifics of the range of dairy products produced by the plant;
- Maintaining and processing the resulting data on the production of products.



#### 6. FINANCIAL PLAN

**6.1** The assumptions made the project are described below.

#### **Product assumptions**

The main products of this project are:

- Pasteurized milk with fat content of 3.2%, 2.5%, 1.5%;
- Dairy products with a fat content of 3.2%, 2.5%, 1.5%;
- Cottage cheese with a fat content of 1-9%;
- Drinking cream with a fat content of 10%;
- Sour cream 20%, 15%;
- Butter with a fat content of 72.5%;
- Cheese.

#### Assumptions about price

Prices for all products of the company are set at the level of the average market. Detailed information on the selling price of each type of manufactured products is presented in paragraph 5.2 of this project.

#### Assumption about the production plan

The volume of annual production at 100% utilization is and is conditioned by the capacity of equipment and market demand:

- Pasteurized milk with fat content of 1.5-3.2% 8,103 tons;
- Dairy products (kefir, ryazhenka, etc.), fat content 1.5-3.2% 4,884 tons;
- Cottage cheese, fat content 1-9% 337 tons;
- Whey 1,177 tons;
- Cream of potable water, fat content 10% 199 tons;
- Sour cream, 15-20% fat content 394 tons;
- Butter with a fat content of 72.5% 267 tons;
- Cheese 433 tons.

The production plan is shown in the table below.



Table 6.1 Production plan for dairy and fermented milk products

Parameters	2025	2026	2027	2028	2029	2030	2031	2032	2033
Receipt of whole milk for production		18 250							
Consumption of whole milk for pasteurized milk production, tons	8 384	8 384	8 384	8 384	8 384	8 384	8 384	8 384	8 384
Production volume of pasteurized milk, tons	8 103	8 103	8 103	8 103	8 103	8 103	8 103	8 103	8 103
Production volume of pasteurized milk (3.2% fat), tons	4 052	4 052	4 052	4 052	4 052	4 052	4 052	4 052	4 052
Production volume of pasteurized milk (2.5% fat), tons	2 431	2 431	2 431	2 431	2 431	2 431	2 431	2 431	2 431
Production volume of pasteurized milk (1.5% fat), tons	1 621	1 621	1 621	1 621	1 621	1 621	1 621	1 621	1 621
Weight of normalized mixture for the production of drinking milk, tons	8 138	8 138	8 138	8 138	8 138	8 138	8 138	8 138	8 138
Weight of normalized mixture for the production of drinking milk (3.2% fat content), tons	4 069	4 069	4 069	4 069	4 069	4 069	4 069	4 069	4 069
Weight of normalized mixture for the production of drinking milk (2.5% fat content), tons	2 441	2 441	2 441	2 441	2 441	2 441	2 441	2 441	2 441
Weight of normalized mixture for the production of drinking milk (1.5% fat content), tons	1 628	1 628	1 628	1 628	1 628	1 628	1 628	1 628	1 628
Consumption of whole milk for the production of dairy products, tons	5 138	5 138	5 138	5 138	5 138	5 138	5 138	5 138	5 138
Production volume of sour-milk products, tons	4 884	4 884	4 884	4 884	4 884	4 884	4 884	4 884	4 884
Production volume of sour-milk products (3.2% fat), tons	1 465	1 465	1 465	1 465	1 465	1 465	1 465	1 465	1 465
Production volume of sour-milk products (2.5% fat content), tons	2 442	2 442	2 442	2 442	2 442	2 442	2 442	2 442	2 442
Production volume of sour-milk products (1.5% fat), tons	977	977	977	977	977	977	977	977	977
Mass of normalized mixture for the production of sour-milk products, tons	4 965	4 965	4 965	4 965	4 965	4 965	4 965	4 965	4 965



Weight of normalized mixture for the production of sour-milk products (3.2% fat content), tons	1 490	1 490	1 490	1 490	1 490	1 490	1 490	1 490	1 490
Weight of normalized mixture for the production of sour-milk products (2.5% fat content), tons	2 483	2 483	2 483	2 483	2 483	2 483	2 483	2 483	2 483
Weight of normalized mixture for the production of sour-milk products (1.5% fat content), tons	993	993	993	993	993	993	993	993	993
Consumption of whole milk for cottage cheese production, tons	912	912	912	912	912	912	912	912	912
Volume of cottage cheese production, tons	337	337	337	337	337	337	337	337	337
Weight of the normalized mixture to produce cottage cheese, tons	339	339	339	339	339	339	339	339	339
Weight of normalized milk, directed to the production of cottage cheese, tons	2 089	2 089	2 089	2 089	2 089	2 089	2 089	2 089	2 089
Weight of calcium chloride for the production of cottage cheese, tons	0,84	0,84	0,84	0,84	0,84	0,84	0,84	0,84	0,84
Weight of rennet powder for cottage cheese production, tons	0,0042	0,0042	0,0042	0,0042	0,0042	0,0042	0,0042	0,0042	0,0042
Weight of starter for cottage cheese production, tons	0,209	0,209	0,209	0,209	0,209	0,209	0,209	0,209	0,209
Weight of normalized mixture after fermentation, tons	2 090	2 090	2 090	2 090	2 090	2 090	2 090	2 090	2 090
Whey production volume, tons	1 567	1 567	1 567	1 567	1 567	1 567	1 567	1 567	1 567
Weight of skimmed milk for whey production, tons	1 177	1 177	1 177	1 177	1 177	1 177	1 177	1 177	1 177
Consumption of whole milk for the production of drinking cream, tons	158	158	158	158	158	158	158	158	158
Production volume of cream of potable water, tons	197	197	197	197	197	197	197	197	197
Weight of normalized mixture for the production of drinking cream, tons	199	199	199	199	199	199	199	199	199
Mass of cream 35% required for normalization of milk, tons	40	40	40	40	40	40	40	40	40
Consumption of whole milk for the production of sour cream (15%, 20% fat), tons	238	238	238	238	238	238	238	238	238
Production volume of sour cream (15%, 20% fat), tons	394	394	394	394	394	394	394	394	394
Production volume of sour cream 15% fat, tons	296	296	296	296	296	296	296	296	296
Production volume of sour cream 20% fat, tons	99	99	99	99	99	99	99	99	99
Weight of normalized mixture aimed at the production of sour cream 15% fat, tons	299	299	299	299	299	299	299	299	299



Weight of normalized mixture, aimed at the production of sour cream 20% fat, tons	100	100	100	100	100	100	100	100	100
Weight of cream 35% required for normalization of milk (sour cream 15% fat), tons	108	108	108	108	108	108	108	108	108
Mass of cream 35% required for normalization of milk (sour cream 20% fat), tons	52	52	52	52	52	52	52	52	52
Weight of the remaining whole milk after the production of drinking milk, dairy products, cottage cheese, sour cream and cream of potable milk	3 420	3 420	3 420	3 420	3 420	3 420	3 420	3 420	3 420
Consumption of whole milk for butter production, tons	1 304	1 304	1 304	1 304	1 304	1 304	1 304	1 304	1 304
Production volume of butter, tons	267	267	267	267	267	267	267	267	267
Mass of cream directed to the production of butter, tons	564	564	564	564	564	564	564	564	564
Mass of cream obtained during normalization of drinking milk, tons	246	246	246	246	246	246	246	246	246
Mass of cream obtained during normalization of sour-milk products, tons	172	172	172	172	172	172	172	172	172
Mass of cream obtained from the separation of the remaining whole milk, tons	346	346	346	346	346	346	346	346	346
Total mass of cream obtained from normalization in the flow and separation of whole milk, tons	765	765	765	765	765	765	765	765	765
Share of whole milk consumption for butter production from the remaining whole milk, %	38%	38%	38%	38%	38%	38%	38%	38%	38%
Consumption of whole milk for the production of cheese (skimmed cottage cheese), tons	2 116	2 116	2 116	2 116	2 116	2 116	2 116	2 116	2 116
Volume of cheese production (skimmed cottage cheese), tons	433	433	433	433	433	433	433	433	433
Weight of skimmed milk obtained from the separation of the remaining whole milk, tons	3 074	3 074	3 074	3 074	3 074	3 074	3 074	3 074	3 074
Share of whole milk consumption for cheese production (skimmed cottage cheese) from the remaining whole milk, %	62%	62%	62%	62%	62%	62%	62%	62%	62%



#### Assumptions about investment costs

Investment costs are divided into 5 categories:

- Preparatory work;
- Preparation of the plant premises;
- Additional costs;
- Current assets;
- Cache-flo deficit coverage.

#### Assumptions about the initial working capital requirements

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

- Administrative costs;
- Employee payroll;
- Production costs;
- Other costs.

#### Assumption about the discount rate

The project adopted a discount rate of 10.07% 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 best of all types 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:

$$r = {}_{rb} + \sum_{i=1}^{n} {}_{Ri}$$

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

Table 6.2. Determination of the cost of equity

Constituents	%
The size of the risk-free rate*	8,34%
Amount of country risk adjustment	2,55%
Amount of industry risk adjustment	2,00%



Constituents	%
Amount of other risk adjustment	2,00%
Cost of equity	14,89%

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

Table 6.3. Determination of the discount rate

Constituents	%
Equity share	30%
Share of borrowed capital (leasing)	70%
Tax	20,00%
Cost of equity	14,89%
Cost of borrowed capital	10%
Total discount rate	10,07%

Source: Global Innovation Trade analysis and calculations

Thus, the expert calculation of the discount rate was 10.07% 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**

For the calculation in this project, the following product nomenclature and price was adopted:

**Table 6.4 Nomenclature and prices** 

Company products	Unit of measure	Sales price, \$/t	Maximum production volume, t/year
Pasteurized drinking milk	\$/t	432,12	8 103
Fermented milk products	\$/t	1416	4 884
Cheese 9% fat	\$/t	2424	337
Cheese	\$/t	4152	433



Company products	Unit of measure	Sales price, \$/t	Maximum production volume, t/year
Sour cream	\$/t	1401,6	394
Oil	\$/t	3888	267
Other (drinking cream, whey)	\$/t	112,87	1 764

The cost listed in the table is an average according to the Ministry of Agriculture in the region studied.

#### 6.3 Investment costs

The volume of main investments of the project will be 468 963 thousand dollars. Capital expenditures, which will be required for the organization of production, are shown in the table:

Table 6.5 Investment costs of the project, thousand dollars.

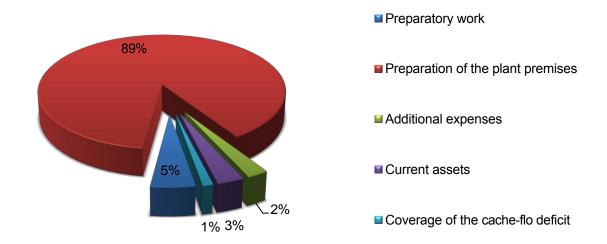
Nº	Capital expenditures	Cost, thousand dollars.
1	Preparatory work	274,6
1.1	Developing a business plan	1,0
1.2	Land plot lease 39,742 square meters (280 dollars/year for the entire area)	0,0
1.3	Registration of permits	43,2
1.4	Development of design and estimate documentation (20% of the cost of construction and assembly work)	230,4
2	Preparation of the plant premises	4987,2
2.1	Costs of communications (electricity, gas, water, wastewater)	600,0
2.2	Equipment purchase	2941,1
2.3	Construction of production facilities	1152,0
2.4	Equipment installation (10%)	294,1
2.5	Equipping production facilities (furniture, office equipment)	8,4
3	Additional expenses	134,9
3.1	Marketing campaign, advertising before the launch of the project	12,0
3.2	Unforeseen expenses (0.5%)	26,9
3.3	Purchase of motor vehicles	60,0
3.4	Other additional expenses	36,0
4	Current assets	166,1
4.1	Purchase of raw materials for the first month of operation of the plant	166,1
	Total capital costs	5562,8

Source: Global Innovation Trade analysis and calculations

The structure of investment costs is shown in the figure below.



Figure 6.1 Structure of investment costs of the project, %



As can be seen from the structure, most of the project investment is the cost of preparing the production facilities, namely the construction and installation work, equipping the premises and the purchase of equipment - 89%.



#### 6.4 Initial working capital requirement

The initial working capital requirement is \$166.1 thousand and is needed to purchase whole milk (the main raw material), rennet powder, calcium chloride and sourdough.

#### 6.5 Tax deductions

General system of taxation will be applied to this production.

The general tax regime (or as it is often called DST) refers to the tax payment regime established for organizations with different organizational and legal forms (if they do not use special tax regimes).

Businesses that use the DTO keep complete accounting records using all accounting accounts, as well as analytics and sub-accounts. In addition, such organizations must fill out tax registers with a number not exceeding a hundred. In the case of an accountant's error in accounting for income and expenses, it may be perceived by the tax authority as an artificial understatement of an enterprise's income, which will lead to the imposition of penalties.

Thus, the main taxes of the regime are shown in the table:

**Table 6.6 Tax environment** 

Tax environment	Amount of tax
Tax regime	DOS
Income tax	12,0%
VAT	12,0%
Insurance premiums	30,0%
Property tax	1,5%

The amounts of taxes paid during the project period are shown in the table below



Table 6.7 Tax deductions in 2023-2032, thousand dollars.

Taxes	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Insurance premiums	0,3	169,7	169,7	169,7	169,7	169,7	169,7	169,7	169,7	169,7
Property tax	62,7	59,4	56,1	52,8	49,5	46,2	42,9	39,6	36,3	33,0
VAT payable	0,0	654,0	945,0	948,3	948,3	948,3	948,3	948,3	948,3	948,3
VAT to accrue	0,0	1039,0	1541,1	1546,7	1546,7	1546,7	1546,7	1546,7	1546,7	1546,7
VAT recoverable	0,0	385,0	596,0	598,4	598,4	598,4	598,4	598,4	598,4	598,4
Taxes (excluding income tax)	63,0	883,2	1170,9	1170,8	1167,5	1164,2	1160,9	1157,6	1154,3	1151,0
Income tax	0,0	1050,8	1627,8	1642,5	1651,3	1661,0	1671,6	1683,2	1695,9	1704,5
All taxes	63,0	1934,0	2798,7	2813,3	2818,9	2825,3	2832,5	2840,8	2850,2	2855,5

Source: Global Innovation Trade calculations



## **6.6 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 6.8 Fixed costs, thousand dollars.

Nº	Indicator	Consu mption	Thousands of dollars per month.
1	Electricity	dollars per month.	10,8
2	Land lease	dollars per month.	0,0
3	Diesel fuel	dollars per month.	6,5
4	Water	dollars per month.	1,2
5	GSF	dollars per month.	3,5
6	Household expenses	dollars per month.	1,8
7	Office expenses	dollars per month.	1,1
8	Marketing and advertising	dollars per month.	0,7
9	Telephone and Internet	dollars per month.	1,3
10	Accounting department expenses	dollars per month.	0,8
11	Other expenses	10%	2,8
12	Salary of administrative and technical staff + service personnel	Personnel sheet	20,2
	staff TOTAL		
	10 IAE		50,6

Source: Global Innovation Trade analysis and calculations

**Project variable costs** are costs that directly depend on the volume of production:



#### Table 6.9 Variable costs, thousand dollars.

Nº	Name	Composition of raw materials	Average cost per month (2026), thousand dollars.
1	Drinking milk pasteurized	Whole milk	217,1
2	Fermented milk products	Whole milk	133,0
3	Cheese 9% fat	Whole milk, calcium chloride, rennet powder, starter	23,7
4	Cheese	Whole milk	54,8
5	Sour cream	Whole milk	6,2
6	Oil	Whole milk	33,8
7	Other (cream of potable water, serum)	Whole milk	4,1
8	Unforeseen expenses	10%	46,8
9	Wages and salaries for production staff	See Personnel sheet	26,9
	Total		546,4

Source: Global Innovation Trade analysis and calculations

Variable costs are indexed to production and sales volume.



#### 6.7 Sales Plan

The monthly production volume was calculated based on the production capacity of the projected plant. Below is the planned production volume of the company in 2025-2033:

Table 6.10 Production Plan for 2025-2033, tons

Period	2025 г.	2026 г.	2027 г.	2028 г.	2029 г.	2030 г.	2031 г.	2032 г.	2033 г.
Pasteurized drinking milk	5 064	8 069	8 103	8 103	8 103	8 103	8 103	8 103	8 103
Fermented milk products	3 052	4 863	4 884	4 884	4 884	4 884	4 884	4 884	4 884
Cheese 9% fat	211	336	337	337	337	337	337	337	337
Cheese	271	431	433	433	433	433	433	433	433
Sour cream	246	393	394	394	394	394	394	394	394
Oil	167	266	267	267	267	267	267	267	267
Other (drinking cream, whey)	1 690	1 763	1 764	1 764	1 764	1 764	1 764	1 764	1 764
Total	10 701	16 121	16 182	16 182	16 182	16 182	16 182	16 182	16 182

Source: Global Innovation Trade analysis and calculations

In the future the volume of production is assumed to be at the level of 2033.



#### **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 6.11 Revenue plan for 2025-2033, thousand dollars.

Period	2025 г.	2026 г.	2027 г.	2028 г.	2029 г.	2030 г.	2031 г.	2032 г.	2033 г.
Pasteurized drinking milk	2188,6	3487,2	3501,8	3501,8	3501,8	3501,8	3501,8	3501,8	3501,8
Fermented milk products	4322,1	6886,5	6915,3	6915,3	6915,3	6915,3	6915,3	6915,3	6915,3
Cheese 9% fat	510,9	814,1	817,5	817,5	817,5	817,5	817,5	817,5	817,5
Cheese	1124,9	1792,3	1799,8	1799,8	1799,8	1799,8	1799,8	1799,8	1799,8
Sour cream	345,4	550,4	552,7	552,7	552,7	552,7	552,7	552,7	552,7
Oil	648,5	1033,3	1037,6	1037,6	1037,6	1037,6	1037,6	1037,6	1037,6
Other (drinking cream, whey)	2288,8	2387,8	2388,9	2388,9	2388,9	2388,9	2388,9	2388,9	2388,9
Total	11429,2	16951,6	17013,6	17013,6	17013,6	17013,6	17013,6	17013,6	17013,6

Source: Global Innovation Trade analysis and calculations

Further revenues from product sales are assumed at the level of 2027. The forecast of profits and losses until 2033 is considered further below.



## **6.9** Forecast of profits and losses

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

Table 6.12 Profit and loss statement, thous.

Income / expense item	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Revenue from sales	0,0	11429,2	16951,6	17013,6	17013,6	17013,6	17013,6	17013,6	17013,6	17013,6
Variable costs	0,0	4235,1	6556,3	6582,4	6582,4	6582,4	6582,4	6582,4	6582,4	6582,4
Gross profit	0,0	7194,1	10395,3	10431,2	10431,2	10431,2	10431,2	10431,2	10431,2	10431,2
Fixed costs	1,0	607,3	607,3	607,3	607,3	607,3	607,3	607,3	607,3	607,3
Taxes (except income tax)	63,0	883,2	1170,9	1170,8	1167,5	1164,2	1160,9	1157,6	1154,3	1151,0
EBITDA	-64,0	5703,6	8617,1	8653,1	8656,4	8659,7	8663,0	8666,3	8669,6	8672,9
EBIT, % (to revenue) average	0%	50%	51%	51%	51%	51%	51%	51%	51%	51%
Depreciation of fixed assets	150,1	150,1	150,1	150,1	150,1	150,1	150,1	150,1	150,1	150,1
EBIT	-214,0	5553,6	8467,1	8503,1	8506,4	8509,7	8513,0	8516,3	8519,6	8522,9
Payment of interest on loans and credits	0,0	299,4	328,1	290,8	249,7	204,6	155,0	100,4	40,3	0,5



Profit (Loss) before taxation	-214,0	5254,1	8139,0	8212,3	8256,6	8305,1	8358,0	8415,9	8479,3	8522,4
Income tax (DST)	0,0	1050,8	1627,8	1642,5	1651,3	1661,0	1671,6	1683,2	1695,9	1704,5
Retained earnings	-214,0	4203,3	6511,2	6569,8	6605,3	6644,0	6686,4	6732,7	6783,4	6817,9
Retained earnings on an accrual basis	-214,0	3989,3	10500,5	17070,3	23675,6	30319,7	37006,1	43738,8	50522,2	57340,1
Repayment of accounts payable	0,0	343,2	373,0	410,3	451,3	496,4	546,1	600,7	660,8	58,0
Net income	-214,0	3860,1	6138,2	6159,5	6154,0	6147,6	6140,3	6132,0	6122,7	6760,0
Net profit on an accrual basis	-214,0	3646,1	9784,3	15943,8	22097,8	28245,4	34385,7	40517,8	46640,4	53400,4
Return on sales	0%	34%	36%	36%	36%	36%	36%	36%	36%	40%



#### 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 6.13 Cash flow forecast, thousand USD.

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
INVESTMENT CASH FLOW (ICEF)	-5 562,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital expenditures	5 562,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPERATING CASH FLOW (OPF)	-64,0	4 353,4	6 661,2	6 719,9	6 755,3	6 794,1	6 836,5	6 882,8	6 933,5	6 968,0
Revenue total	0,0	11 429,2	16 951,6	17 013,6	17 013,6	17 013,6	17 013,6	17 013,6	17 013,6	17 013,6
Expenses total	1,0	4 842,4	7 163,6	7 189,6	7 189,6	7 189,6	7 189,6	7 189,6	7 189,6	7 189,6
Variable costs	0,0	4 235,1	6 556,3	6 582,4	6 582,4	6 582,4	6 582,4	6 582,4	6 582,4	6 582,4
Fixed costs	1,0	607,3	607,3	607,3	607,3	607,3	607,3	607,3	607,3	607,3
Accrued taxes and payments	63,0	1 934,0	2 798,7	2 813,3	2 818,9	2 825,3	2 832,5	2 840,8	2 850,2	2 855,5
Payments of interest on the loan	0,0	299,4	328,1	290,8	249,7	204,6	155,0	100,4	40,3	0,5
FINANCIAL CASH FLOW (FDP)	5 627,6	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Own funds	1 687,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Borrowed funds	3 939,7	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	343,2	373,0	410,3	451,3	496,4	546,1	600,7	660,8	58,0
Net cash flow (NFC)	-5 626,7	4 353,4	6 661,2	6 719,9	6 755,3	6 794,1	6 836,5	6 882,8	6 933,5	6 968,0
Cumulative NPD	-5 626,7	-1 273,4	5 387,9	12 107,8	18 863,1	13 514,2	32 244,9	39 127,6	46 061,1	53 029,1



#### 6.11 Project efficiency analysis

#### 1.1.1. 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

#### 1.1.2. 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, PI.

The main financial indicators are shown in the table below.

**Table 6.14 Investment Performance Indicators** 

Investment performance indicators	
Calculation period (planning horizon), months.	120
Net income (NV), thousand dollars.	53029,1
Net discounted income (NPV), thousand dollars.	29992,9
Internal rate of return (IRR), % per year	109%
Profitability index (PI), units.	6,33
Payback period (PB), months.	25,9
Discounted payback period (DPB), months.	27,3
Investments in the project, thousand dollars.	5627,6
Average return on sales for the project, %	33%
Net income (cumulative), thousand dollars.	53400,4
Discount rate, %	10,07%



According to the study, it is clear that the project is profitable. It will pay off in 2 years and 1 month. Payback period, taking into account discounting will be 2 years and 3 months. The net profit of the project after payback will be about 29.9 million dollars. The figure below shows the NPV of the project:

35 000.0 29 992,9 NPV, thousand dollars. 30,000,0 25 000,0 24 751,0 20 000,0 17 980,8 15 000.0 10 000,0 10 653,0 3 023,5 5 000,0 7 919,8 -184.80,0 -5 000.0 <sup>↓</sup> Jan/26 Jan/27 Jan/28 Jan/29 Jan/30 Jan/31 Jan/32 Jan/33 -3 435,5 -10 000,0 -<del>5 305,2</del>

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 of \$29.9 million 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 the periodic cash outflows associated with the project, taking into account the time value of money and the risks of the project.

The internal rate of return was 105%, which is higher than the discount rate (11.86%), which is a good indicator for similar projects.

A PI of 6.3 means that at the end of 2033, for every dollar invested, the Investor will receive \$6.3 (discounted).

#### 1.1.3. 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.

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

Where i is the discount rate;

CFt - 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.

#### 1.1.4. 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:

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



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

IF, - cash inflow in the N-th period; y-cost of the source of

financing of this project; n-length of the project.

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

#### 1.1.5. 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.

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

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.

#### 1.1.6. Payback Period (PBP)

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

PBP payback period is calculated by formula 4.

PBP = Investments / ACF (4)

Where Investments is the initial investment;

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



#### 1.1.7. Discounted Payback Period (DPBP)

Discounted Payback Period (DPBP) - payback period (see above), but taking into account discounting.

The discounted payback period of DPBP is calculated by formula 5.

$$DPBP = {}_{t^{-}} - \frac{\underline{NPVt}}{NPVt + NPVt} (5)$$

Where t -, t + - the period when negative and positive NPV were observed.

#### 1.1.8. Other indicators

The discount rate is the interest rate used to convert future income streams into a single present value. The discount rate is used in calculating the discounted value of future NPV cash flows.

The discount rate is calculated according to the formula:

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

Where i is the discount rate - a variable that depends on a number of factors:

- factors affecting future cash flows, which are determined individually for each investment project;
- the value of an alternative investment for a given period, whether the bank interest on deposits, refinancing rate, average profitability of existing businesses, etc;
- an estimate of the inflation rate for the selected period, as an estimate of the value of the risk of depreciation of funds over the period.



## 7. PROJECT RISK ANALYSIS

# 7.1 Project sensitivity analysis

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

Table 7.1 Sensitivity analysis

Indicator	NP	/	IR	R.	F	Pl	РВ		
Base value	29 99	2,9	109	9%	6,	33		25,9	
Deviations	Δ %		Δ	%	Δ	%	Δ	%	
Sales prices decrease by 5%	26765,8	-10,8%	99%	-9,1%	5,76	-9,1%	27,3	-5,5%	
Decrease in sales volumes by 5%	24671,9	-17,7%	93%	-15,0%	5,39	- 14,9%	27,9	-8,0%	
Increase in variable costs for 5%	28626,2	-4,6%	105%	-3,8%	6,09	-3,8%	26,5	-2,4%	
Increase in fixed costs for 5%	29859,0	-0,4%	109%	-0,4%	6,31	-0,4%	25,9	-0,2%	

Source: Financial model calculations

According to the results of the analysis, there is the greatest dependence of the project on the volume of production and sales price.



### 7.2 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.
- Tax payments.

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

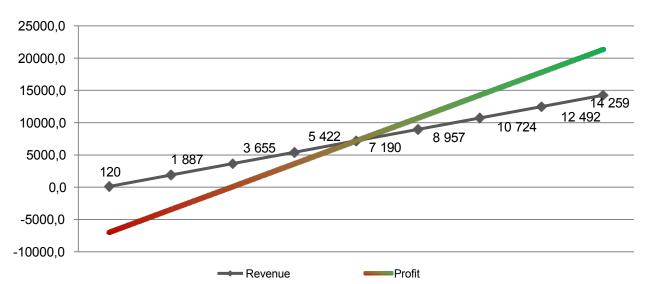


Figure 7.1 Break-even point chart

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).

Due to the fact that the largest project costs are variable costs, the impact of other costs on the project is not significant.



# 2. APPLICATIONS

# 2.1. Cash flow statement (by month)

	Jan.24	Feb.24	mar.24	Jan.24	Feb.24	mar.24	Jan.24	Feb.24	mar.24	Jan.24	Feb.24	mar.24
INVESTMENT CASH FLOW (ICEF)	-59,0	-58,0	-202,0	-187,6	-307,6	-307,6	-269,2	-1 916,8	-269,2	-149,2	-1 658,8	-177,3
Capital expenditures	59,0	58,0	202,0	187,6	307,6	307,6	269,2	1 916,8	269,2	149,2	1 658,8	177,3
OPERATING CASH FLOW (OPF)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	-64,0
Revenue total	0,0	0,0	0,0	0,0	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	0,0	0,0	0,0	1,0
Variable costs	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Fixed costs	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,0
Accrued taxes and payments	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	63,0
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)	59,0	58,0	202,0	187,6	307,6	307,6	269,2	1 916,8	269,2	149,2	1 658,8	242,1
Own funds	59,0	58,0	202,0	187,6	307,6	307,6	269,2	296,5	0,0	0,0	0,0	0,0
Borrowed funds	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1 620,3	269,2	149,2	1 658,8	242,1
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)	-59,0	-58,0	-202,0	-187,6	-307,6	-307,6	-269,2	-1 916,8	-269,2	-149,2	-1 658,8	-241,3
Cumulative NPD	-59,0	-117,1	-319,1	-506,8	-814,4	-1 122,1	-1 391,3	-3 308,1	-3 577,4	-3 726,6	-5 385,4	-5 626,7
Cash balance at the beginning of the period	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	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	0,0	0,0	0,0	0,8
Net discounted income (NPV)	-59,0	-57,6	-198,8	-183,2	-298,0	-295,6	-256,6	-1 812,5	-252,6	-138,9	-1 531,4	-221,0
NPV on an accrual basis	-59,0	-116,6	-315,5	-498,7	-796,6	-1 092,2	-1 348,8	-3 161,4	-3 413,9	-3 552,8	-5 084,2	-5 305,2



	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	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)	300,4	333,1	72,2	367,8	400,7	170,9	466,5	499,5	269,7	565,3	598,3	309,1
Revenue total	611,2	673,2	735,3	797,3	859,4	921,4	983,5	1 045,5	1 107,6	1 169,6	1 231,7	1 293,7
Expenses total	260,1	286,2	312,3	338,3	364,4	390,5	416,6	442,7	468,7	494,8	520,9	547,0
Variable costs	209,5	235,6	261,6	287,7	313,8	339,9	366,0	392,0	418,1	444,2	470,3	496,4
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	50,7	53,9	319,9	60,5	63,7	329,7	70,3	73,5	339,5	80,1	83,4	408,8
Payments of interest on the loan	0,0	0,0	31,0	30,7	30,5	30,3	30,1	29,8	29,6	29,4	29,1	28,9
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	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	58,4	27,5	27,7	27,9	28,1	28,4	28,6	28,8	29,0	29,3	29,5
Net cash flow (NFC)	300,4	333,1	72,2	367,8	400,7	170,9	466,5	499,5	269,7	565,3	598,3	309,1
Cumulative NPD	-5 326,3	-4 993,2	-4 921,1	-4 553,3	-4 152,6	-3 981,7	-3 515,1	-3 015,7	-2 746,0	-2 180,7	-1 582,4	-1 273,4
Cash balance at the beginning of the period	0,8	301,2	575,9	620,6	960,7	1 333,5	1 476,3	1 914,4	2 385,3	2 626,2	3 162,5	3 731,4
Cash balance at the end of the period	301,2	575,9	620,6	960,7	1 333,5	1 476,3	1 914,4	2 385,3	2 626,2	3 162,5	3 731,4	4 011,0
Net discounted income (NPV)	272,9	300,2	64,5	326,2	352,6	149,2	404,0	429,1	229,8	478,0	501,8	257,2
NPV on an accrual basis	-5 032,3	-4 732,0	-4 667,5	-4 341,3	-3 988,7	-3 839,5	-3 435,5	-3 006,4	-2 776,5	-2 298,6	-1 796,8	-1 539,7



	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)	664,1	697,1	290,3	697,5	697,8	291,1	698,3	698,5	291,8	699,0	699,3	236,5
Revenue total	1 355,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8
Expenses total	573,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1
Variable costs	522,4	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	89,9	93,2	500,1	93,2	93,2	500,1	93,2	93,2	500,1	93,2	93,2	556,2
Payments of interest on the loan	28,7	28,4	28,2	28,0	27,7	27,5	27,2	27,0	26,7	26,5	26,2	26,0
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	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	29,7	30,0	30,2	30,5	30,7	30,9	31,2	31,4	31,7	31,9	32,2	32,5
Net cash flow (NFC)	664,1	697,1	290,3	697,5	697,8	291,1	698,3	698,5	291,8	699,0	699,3	236,5
Cumulative NPD	-609,2	87,8	378,2	1 075,7	1 773,5	2 064,5	2 762,8	3 461,3	3 753,1	4 452,2	5 151,4	5 387,9
Cash balance at the beginning of the period	4 011,0	4 645,4	5 312,4	5 572,6	6 239,6	6 906,7	7 166,8	7 833,9	8 501,0	8 761,1	9 428,2	10 095,2
Cash balance at the end of the period	4 645,4	5 312,4	5 572,6	6 239,6	6 906,7	7 166,8	7 833,9	8 501,0	8 761,1	9 428,2	10 095,2	10 299,3
Net discounted income (NPV)	548,2	570,8	235,9	562,1	557,8	230,8	549,4	545,2	226,0	536,9	532,9	178,8
NPV on an accrual basis	-991,5	-420,7	-184,8	377,3	935,2	1 166,0	1 715,4	2 260,6	2 486,6	3 023,5	3 556,4	3 735,1



	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)	699,8	700,1	289,7	700,6	700,8	290,5	701,4	701,7	291,3	702,2	702,5	239,3
Revenue total	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8
Expenses total	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1
Variable costs	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	93,2	93,2	503,8	93,2	93,2	503,8	93,2	93,2	503,8	93,2	93,2	556,6
Payments of interest on the loan	25,7	25,4	25,2	24,9	24,6	24,4	24,1	23,8	23,6	23,3	23,0	22,7
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	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	32,7	33,0	33,2	33,5	33,8	34,0	34,3	34,6	34,9	35,1	35,4	35,7
Net cash flow (NFC)	699,8	700,1	289,7	700,6	700,8	290,5	701,4	701,7	291,3	702,2	702,5	239,3
Cumulative NPD	6 087,7	6 787,7	7 077,4	7 778,0	8 478,9	8 769,4	9 470,7	10 172,4	10 463,7	11 165,9	11 868,4	12 107,8
Cash balance at the beginning of the period	10 299,3	10 966,3	11 633,4	11 889,9	12 556,9	13 224,0	13 480,5	14 147,5	14 814,6	15 071,1	15 738,1	16 405,2
Cash balance at the end of the period	10 966,3	11 633,4	11 889,9	12 556,9	13 224,0	13 480,5	14 147,5	14 814,6	15 071,1	15 738,1	16 405,2	16 608,9
Net discounted income (NPV)	524,8	520,8	213,8	512,9	509,1	209,3	501,4	497,6	204,9	490,1	486,4	164,4
NPV on an accrual basis	4 259,9	4 780,8	4 994,6	5 507,5	6 016,6	6 225,9	6 727,3	7 224,8	7 429,8	7 919,8	8 406,2	8 570,6



	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)	703,1	703,3	290,8	703,9	704,2	291,7	704,8	705,1	292,6	705,7	706,0	244,0
Revenue total	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8
Expenses total	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1
Variable costs	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	93,2	93,2	506,0	93,2	93,2	506,0	93,2	93,2	506,0	93,2	93,2	555,5
Payments of interest on the loan	22,4	22,1	21,9	21,6	21,3	21,0	20,7	20,4	20,1	19,8	19,5	19,1
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	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	36,0	36,3	36,6	36,9	37,1	37,4	37,7	38,0	38,3	38,7	39,0	39,3
Net cash flow (NFC)	703,1	703,3	290,8	703,9	704,2	291,7	704,8	705,1	292,6	705,7	706,0	244,0
Cumulative NPD	12 810,8	13 514,2	13 805,0	14 508,9	15 213,1	15 504,8	16 209,6	16 914,8	17 207,4	17 913,1	18 619,1	18 863,1
Cash balance at the beginning of the period	16 608,9	17 275,9	17 943,0	18 197,2	18 864,3	19 531,4	19 785,6	20 452,7	21 119,8	21 374,0	22 041,1	22 708,2
Cash balance at the end of the period	17 275,9	17 943,0	18 197,2	18 864,3	19 531,4	19 785,6	20 452,7	21 119,8	21 374,0	22 041,1	22 708,2	22 912,9
Net discounted income (NPV)	479,0	475,4	195,0	468,3	464,7	191,0	457,7	454,3	187,0	447,5	444,1	152,3
NPV on an accrual basis	9 049,6	9 525,0	9 720,0	10 188,3	10 653,0	10 844,0	11 301,7	11 756,0	11 943,0	12 390,5	12 834,6	12 986,8



	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)	706,7	707,0	292,0	707,6	707,9	293,0	708,6	708,9	294,0	709,6	709,9	248,8
Revenue total	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8
Expenses total	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1
Variable costs	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	93,2	93,2	508,4	93,2	93,2	508,4	93,2	93,2	508,4	93,2	93,2	554,6
Payments of interest on the loan	18,8	18,5	18,2	17,9	17,6	17,2	16,9	16,6	16,2	15,9	15,6	15,2
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	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	39,6	39,9	40,2	40,5	40,9	41,2	41,5	41,9	42,2	42,5	42,9	43,2
Net cash flow (NFC)	706,7	707,0	292,0	707,6	707,9	293,0	708,6	708,9	294,0	709,6	709,9	248,8
Cumulative NPD	19 569,8	20 276,8	20 568,8	21 276,4	21 984,4	22 277,4	22 986,0	23 694,9	23 988,9	24 698,5	25 408,4	25 408,4
Cash balance at the beginning of the period	22 912,9	23 580,0	24 247,0	24 498,9	25 165,9	25 833,0	26 084,8	26 751,9	27 419,0	27 670,8	28 337,9	29 004,9
Cash balance at the end of the period	23 580,0	24 247,0	24 498,9	25 165,9	25 833,0	26 084,8	26 751,9	27 419,0	27 670,8	28 337,9	29 004,9	29 210,5
Net discounted income (NPV)	437,4	434,2	177,9	427,7	424,4	174,3	418,1	415,0	170,7	408,8	405,7	141,1
NPV on an accrual basis	13 424,3	13 858,5	14 036,4	14 464,0	14 888,5	15 062,8	15 480,9	15 895,8	16 066,5	16 475,3	16 881,0	17 022,1



	Jan.30	Feb.3	mar.30	Apr.30	May.30	Jun.3 0	July 3 0	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)	710,6	711,0	293,4	711,7	712,0	294,5	712,7	713,1	295,6	713,8	714,2	253,8
Revenue total	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8
Expenses total	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1
Variable costs	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	93,2	93,2	511,1	93,2	93,2	511,1	93,2	93,2	511,1	93,2	93,2	554,0
Payments of interest on the loan	14,9	14,5	14,2	13,8	13,5	13,1	12,8	12,4	12,0	11,6	11,3	10,9
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	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	43,5	43,9	44,2	44,6	45,0	45,3	45,7	46,0	46,4	46,8	47,1	47,5
Net cash flow (NFC)	710,6	711,0	293,4	711,7	712,0	294,5	712,7	713,1	295,6	713,8	714,2	253,8
Cumulative NPD	26 119,0	26 830,0	27 123,4	27 835,1	28 547,1	28 841,6	29 554,3	30 267,4	30 563,0	31 276,9	31 991,1	32 244,9
Cash balance at the beginning of the period	29 210,5	29 877,6	30 544,7	30 793,9	31 460,9	32 128,0	32 377,2	33 044,3	33 711,3	33 960,5	34 627,6	35 294,7
Cash balance at the end of the period	29 877,6	30 544,7	30 793,9	31 460,9	32 128,0	32 377,2	33 044,3	33 711,3	33 960,5	34 627,6	35 294,7	35 500,9
Net discounted income (NPV)	399,7	396,7	162,4	390,8	387,9	159,1	382,1	379,2	155,9	373,6	370,8	130,7
NPV on an accrual basis	17 421,7	17 818,4	17 980,8	18 371,6	18 759,5	18 918,6	19 300,7	19 679,9	19 835,9	20 209,5	20 580,3	20 711,0



	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)	715,0	715,4	294,9	716,1	716,5	296,1	717,3	717,7	297,3	718,5	718,9	258,9
Revenue total	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8
Expenses total	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1
Variable costs	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	93,2	93,2	514,0	93,2	93,2	514,0	93,2	93,2	514,0	93,2	93,2	553,6
Payments of interest on the loan	10,5	10,1	9,8	9,4	9,0	8,6	8,2	7,8	7,4	7,0	6,6	6,1
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	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	47,9	48,3	48,7	49,1	49,4	49,8	50,2	50,6	51,0	51,4	51,9	52,3
Net cash flow (NFC)	715,0	715,4	294,9	716,1	716,5	296,1	717,3	717,7	297,3	718,5	718,9	258,9
Cumulative NPD	32 959,8	33 675,2	33 970,1	34 686,3	35 402,8	35 698,9	36 416,2	37 133,9	37 431,3	38 149,8	38 868,7	39 127,6
Cash balance at the beginning of the period	35 500,9	36 168,0	36 835,1	37 081,3	37 748,4	38 415,5	38 661,8	39 328,8	39 995,9	40 242,2	40 909,3	41 576,3
Cash balance at the end of the period	36 168,0	36 835,1	37 081,3	37 748,4	38 415,5	38 661,8	39 328,8	39 995,9	40 242,2	40 909,3	41 576,3	41 783,0
Net discounted income (NPV)	365,3	362,6	148,3	357,3	354,6	145,4	349,4	346,8	142,5	341,7	339,1	121,2
NPV on an accrual basis	21 076,3	21 439,0	21 587,3	21 944,5	22 299,1	22 444,5	22 793,9	23 140,7	23 283,2	23 624,8	23 964,0	24 085,1



	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)	719,8	720,2	296,6	721,0	721,5	297,9	722,3	722,8	299,3	723,7	724,1	264,3
Revenue total	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8
Expenses total	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1
Variable costs	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	93,2	93,2	517,1	93,2	93,2	517,1	93,2	93,2	517,1	93,2	93,2	553,4
Payments of interest on the loan	5,7	5,3	4,9	4,5	4,0	3,6	3,2	2,7	2,3	1,8	1,4	0,9
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	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	52,7	53,1	53,5	54,0	54,4	54,8	55,3	55,7	56,1	56,6	57,0	57,5
Net cash flow (NFC)	719,8	720,2	296,6	721,0	721,5	297,9	722,3	722,8	299,3	723,7	724,1	264,3
Cumulative NPD	39 847,4	40 567,6	40 864,2	41 585,3	42 306,7	42 604,7	43 327,0	44 049,8	44 349,0	45 072,7	45 796,8	46 061,1
Cash balance at the beginning of the period	41 783,0	42 450,1	43 117,1	43 360,2	44 027,3	44 694,4	44 937,5	45 604,6	46 271,7	46 514,8	47 181,8	47 848,9
Cash balance at the end of the period	42 450,1	43 117,1	43 360,2	44 027,3	44 694,4	44 937,5	45 604,6	46 271,7	46 514,8	47 181,8	47 848,9	48 055,7
Net discounted income (NPV)	334,1	331,7	135,5	326,8	324,4	132,9	319,6	317,3	130,3	312,6	310,3	112,4
NPV on an accrual basis	24 419,3	24 751,0	24 886,5	25 213,3	25 537,7	25 670,6	25 990,2	26 307,5	26 437,8	26 750,5	27 060,8	27 173,2



	Jan.33	Feb.33	mar.33	Apr.33	May.33	June 33	July 33	Aug.33	sen.33	Oct. 33	Nov.33	Dec. 33
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)	725,0	725,5	299,4	725,5	725,5	299,4	725,5	725,5	299,4	725,5	725,5	266,4
Revenue total	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8	1 417,8
Expenses total	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1	599,1
Variable costs	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5	548,5
Fixed costs	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6	50,6
Accrued taxes and payments	93,2	93,2	519,3	93,2	93,2	519,3	93,2	93,2	519,3	93,2	93,2	552,3
Payments of interest on the loan	0,5	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	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	58,0	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)	725,0	725,5	299,4	725,5	725,5	299,4	725,5	725,5	299,4	725,5	725,5	266,4
Cumulative NPD	46 786,2	47 511,6	47 811,0	48 536,5	49 262,0	49 561,4	50 286,9	51 012,4	51 311,8	52 037,2	52 762,7	53 029,1
Cash balance at the beginning of the period	48 055,7	48 722,8	49 448,3	49 747,6	50 473,1	51 198,6	51 498,0	52 223,5	52 949,0	53 248,4	53 973,9	54 699,4
Cash balance at the end of the period	48 722,8	49 448,3	49 747,6	50 473,1	51 198,6	51 498,0	52 223,5	52 949,0	53 248,4	53 973,9	54 699,4	54 965,7
Net discounted income (NPV)	305,8	303,6	124,3	298,7	296,4	121,3	291,7	289,3	118,4	284,8	282,5	102,9
NPV on an accrual basis	27 479,0	27 782,5	27 906,8	28 205,6	28 501,9	28 623,2	28 914,9	29 204,3	29 322,7	29 607,5	29 890,0	29 992,9



# Information about the performer of the project

The feasibility study "Construction of milk and dairy products plant" was performed by the marketing agency "Global Innovation Trade". All our specialists have an impressive experience in developing business plans, supported by deep knowledge in various spheres of economy and business, the presence of a strong information base, knowledge of the most advanced approaches to business organization, knowledge of the latest calculation methods and their competent adaptation to the specifics of the region or a particular industry.

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