



PROJECT FOR THE PRODUCTION OF A MOBILE GRAIN DRYER WITH SUBSEQUENT PROVISION OF GRAIN DRYING SERVICES.

“Coming together is a beginning, being together is progress,
and working together is success.”

Henry Ford

Ukraine, Odesa 2023

PROJECT DESCRIPTION

The main goal of the project is to create high-tech equipment for drying grain (mobile dryer), capable of moving between farm facilities or even large grain storages. The modern grain dryer will perform grain drying on the client's territory, ensuring careful product storing at the customer's silos.

The main objective of the project will be to find the optimal number of customers for the grain drying season and provide them with high-quality grain drying services while generating profit for the project.

It is also assumed that the form of production organization will be based on cooperation with enterprises, organizations and other structures, each specializes in the production of individual components of the whole or a separate type of performed works.

The main crops for drying are corn, sunflower, wheat, and soybeans.

Geography of the district: central and northern Ukraine, black soil zone.



GOALS AND STRATEGY



The main goal of the project is to create a unit of high-tech grain drying equipment, aimed at farms to increase their own efficiency.



Open a company to produce a unit of grain drying equipment, provide grain drying services, and make a profit.



TARGET CUSTOMER

It is difficult to determine the capacity of our target audience, cause not only the lack of an offer affects the readiness to use such service.

Below are the reasons that directly or indirectly affect a potential client. They can also be divided into objective and subjective.

Objective:

- Climatic: amount of humidity in each specific season.
- Average price of the crop in a specific season.
- Average price at the nearest grain storage facility in a specific season.
- Average yield by region.
- Political and economic situation in the country.

Subjective:

- Size of land bank and distribution area of different crops.
- Availability of grain storage containers at a specific client, type of container.
- Availability of equipment, and every specific client's yield.
- Mentality and every specific client's progressiveness.



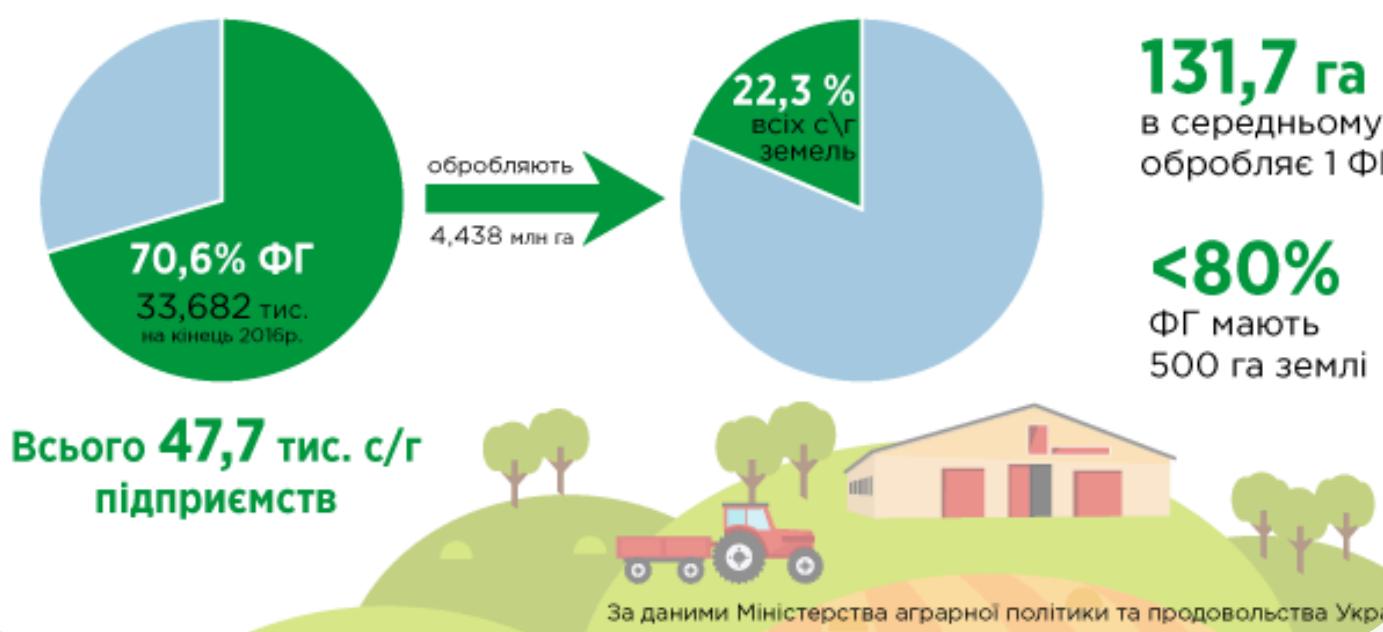
MARKET CAPACITY

- Farms with a land bank of 500 - 5,000 hectares (main).
- Farms with a land bank of up to 500 hectares (purchase of the service of grain drying cooperatively).
- Farms with a land bank of more than 5,000 hectares or grain holdings (with insufficient amount of own grain drying equipment and its parallel use to ensure the necessary productivity).



Фермерські господарства України

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ABOUT 47,7 THOUSAND FARMS

As of 2020, there were **47,772** farms in Ukraine. Of which, **8,645** farms had a land bank of 500 to 5,000 hectares.

COMPETITIVE MARKET ANALYSIS

There is no production of mobile grain dryers in Ukraine.

There are foreign manufacturers on the market just a little presented:

- Continues type – Stela (Germany), Riela (Germany), Tornum (Sweden) (distinct in mobility, high productivity, high cost).
- Portion type – Mecmar (Italy), Agrex (Italy), Pedrotti (Italy) and others (distinct in limited mobility, low productivity, low quality of the initial product, still high price).

Drying service

Currently, there are practically no grain drying service companies that offer such a service on the client's territory. At the same time, competitors also include linear storage facilities and private farms with existing grain dryers, the productivity of which is not filled at 100%.



GERMANY

STELA

This manufacturer not presented on Ukraine market due to high price of equipment.



aprox. cost 300, 000 USD



Continues type grain dryer.
Good quality of output product.



Requires significant time of assembling before starting work.



GERMANY

RIELA

This manufacturer not presented in Ukraine market due to high cost of equipment and significant total cost of ownership.



aprox. cost 250, 000 USD



Continues type grain dryer.
Acceptable quality of output product.



Low grain volume capacity
and requires additional exploitation costs.



FINLAND

MEPU

This manufacturer mostly not wide presented on Ukrainian market due to the high cost of equipment and bad ability to transport unit.



aprox. cost 210, 000 USD



Continues type grain dryer.
Acceptable quality of output product.



Low grain volume capacity
and high difficulties to transport.



ITALY

MECMAR

This manufacturer mostly not wide presented on Ukrainian market due to the high cost of equipment, bad ability to transport unit, low capacity.



aprox. cost 230, 000 USD



Good manufacturer's service support.



Low grain volume capacity and high difficulties to transport.



ITALY AGREX

This manufacturer mostly not wide presented on Ukrainian market due to the high cost of equipment, bad ability to transport unit, low capacity, and low quality of output product.



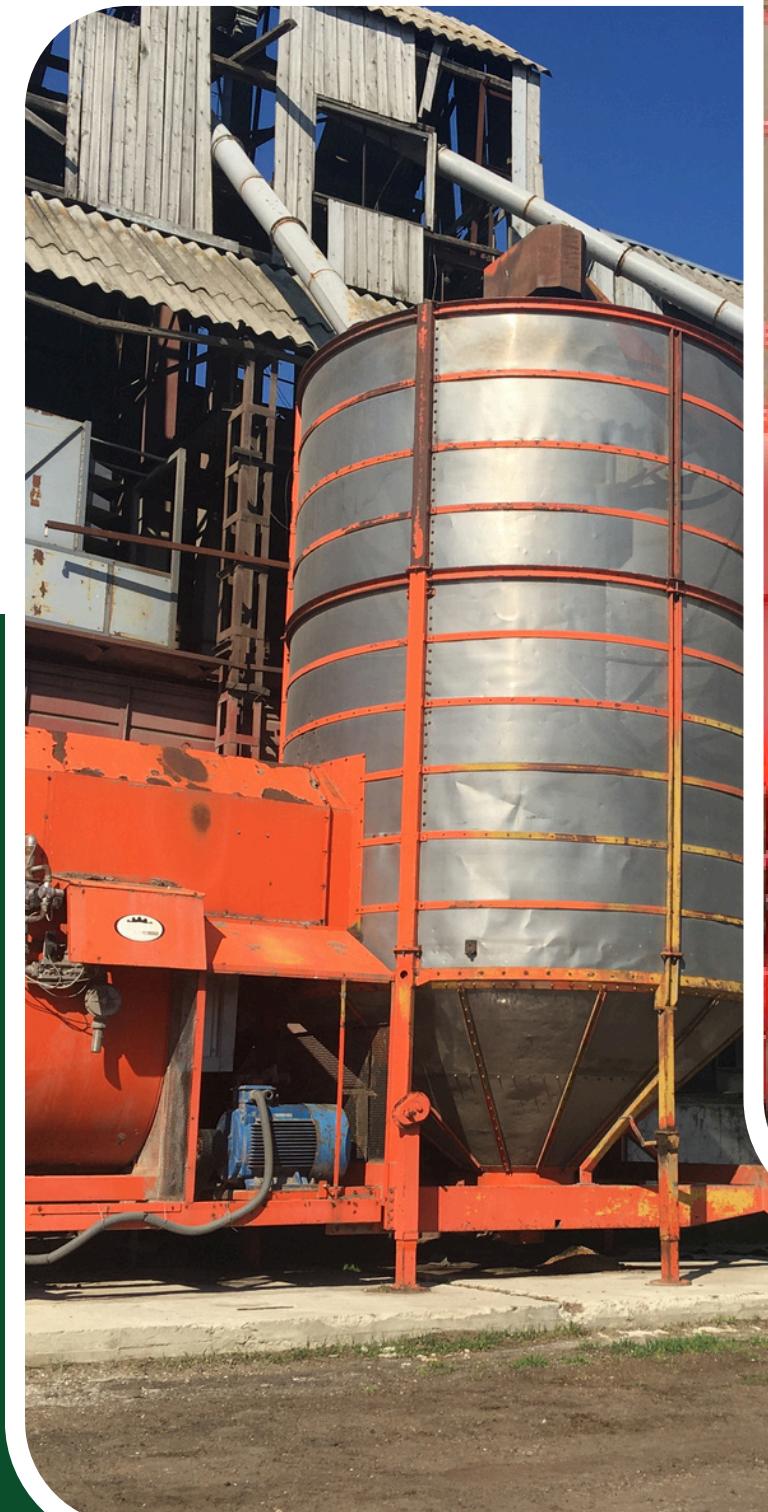
aprox. cost 190, 000 USD



Lower price comparing to other existing competitors.



Low grain volume capacity, high difficulties to transport and low quality of output product.



PROJECT PROTOTYPE

HAMMOND

A distinctive feature of the designed grain dryer is it's real mobility with increased productivity and high quality of the output product.



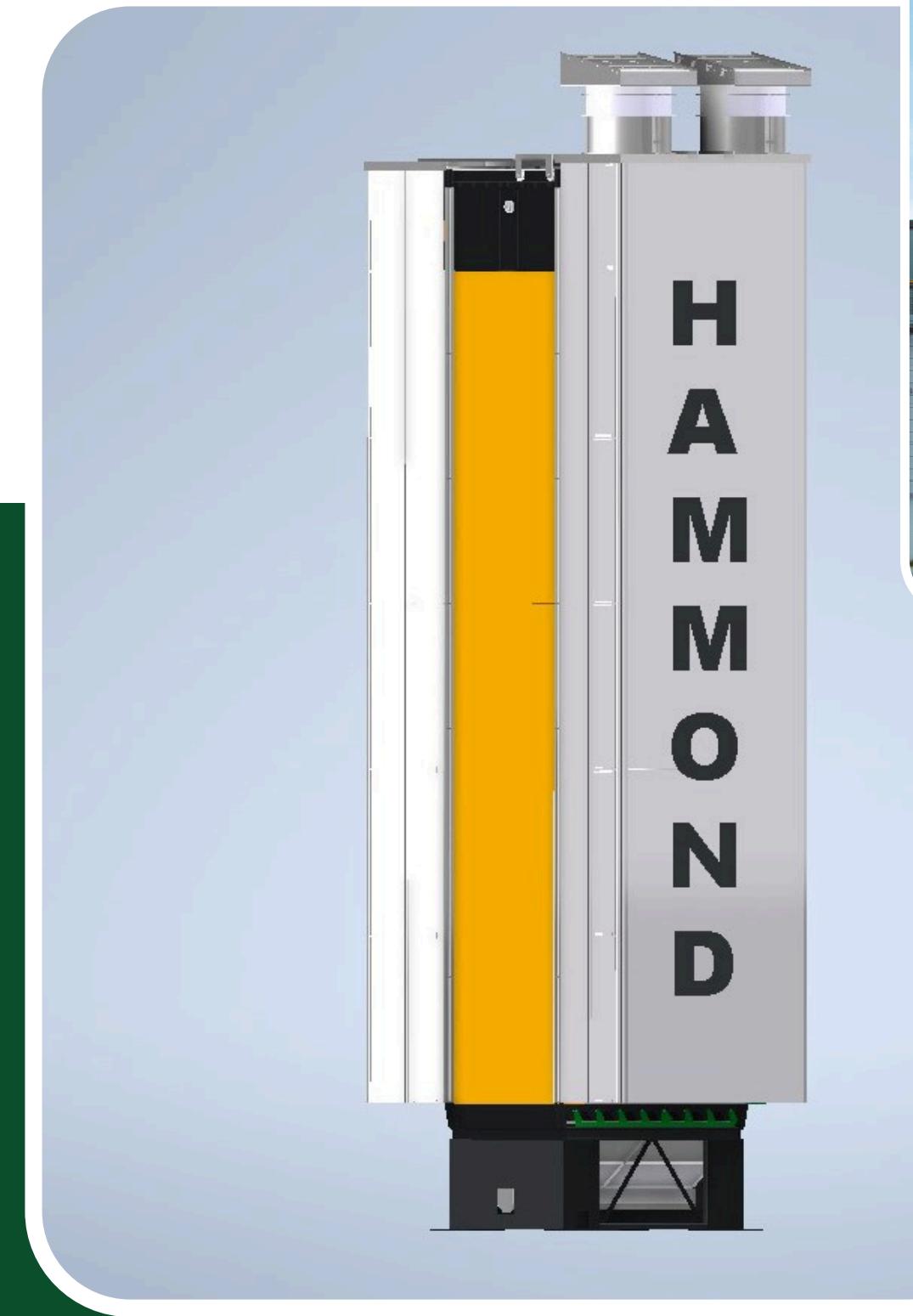
aprox. cost 150, 000 USD



Continues type grain dryer.
Good quality of output
product by gentle mix-flow
drying process.



Not present units
manufactured.



MODEL OF PROTOTYPE

HAMMOND

High efficiency achieved thanks to the technical solution of folding and unfolding the dryer's air plenums in transport and working states.



Mobility



High productivity



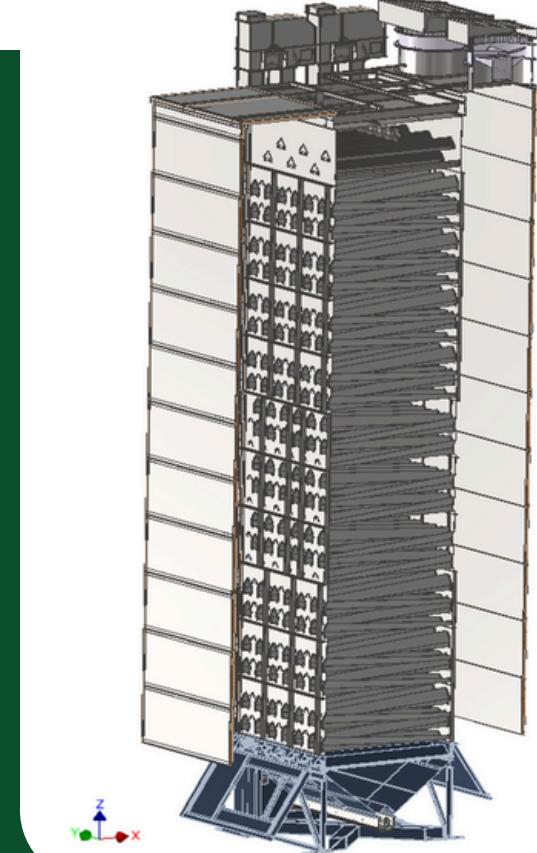
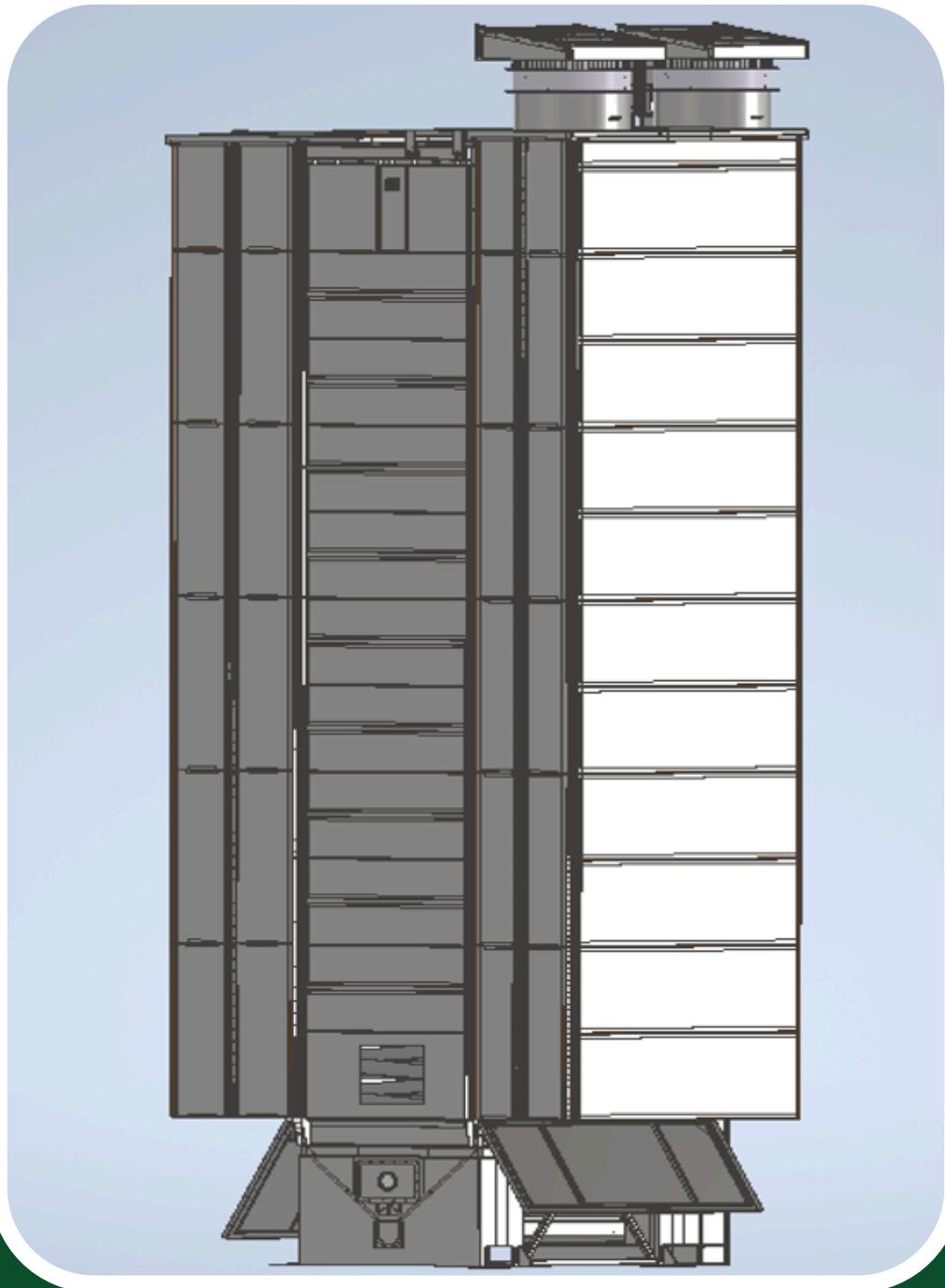
Low price



High output product quality



Good technical support 24h/365d



Dryer in unfolded state
(ready for operation)



Dryer in folded state
(ready for transport)

Technical specifications

Capacity:

- corn 30% - 14% (T=120 °C)
- corn 28% - 14% (T=120 °C)
- corn 24% - 14% (T=120 °C)
- corn 19% - 14% (T=115 °C)

Value

- 7,7 TPH
- 8,3 TPH
- 10,2 TPH
- 15,6 TPH

Dimensions:

- folded 2,5 x 3,1 x 12,7 m
- unfolded 4,45 x 3,1 x 12,7 m

Weight

- 12 T
- 25 T

Grain volume

- 2558 kW/h

Burner

COMPARISON OF COMPETITORS AND PROJECT MODEL

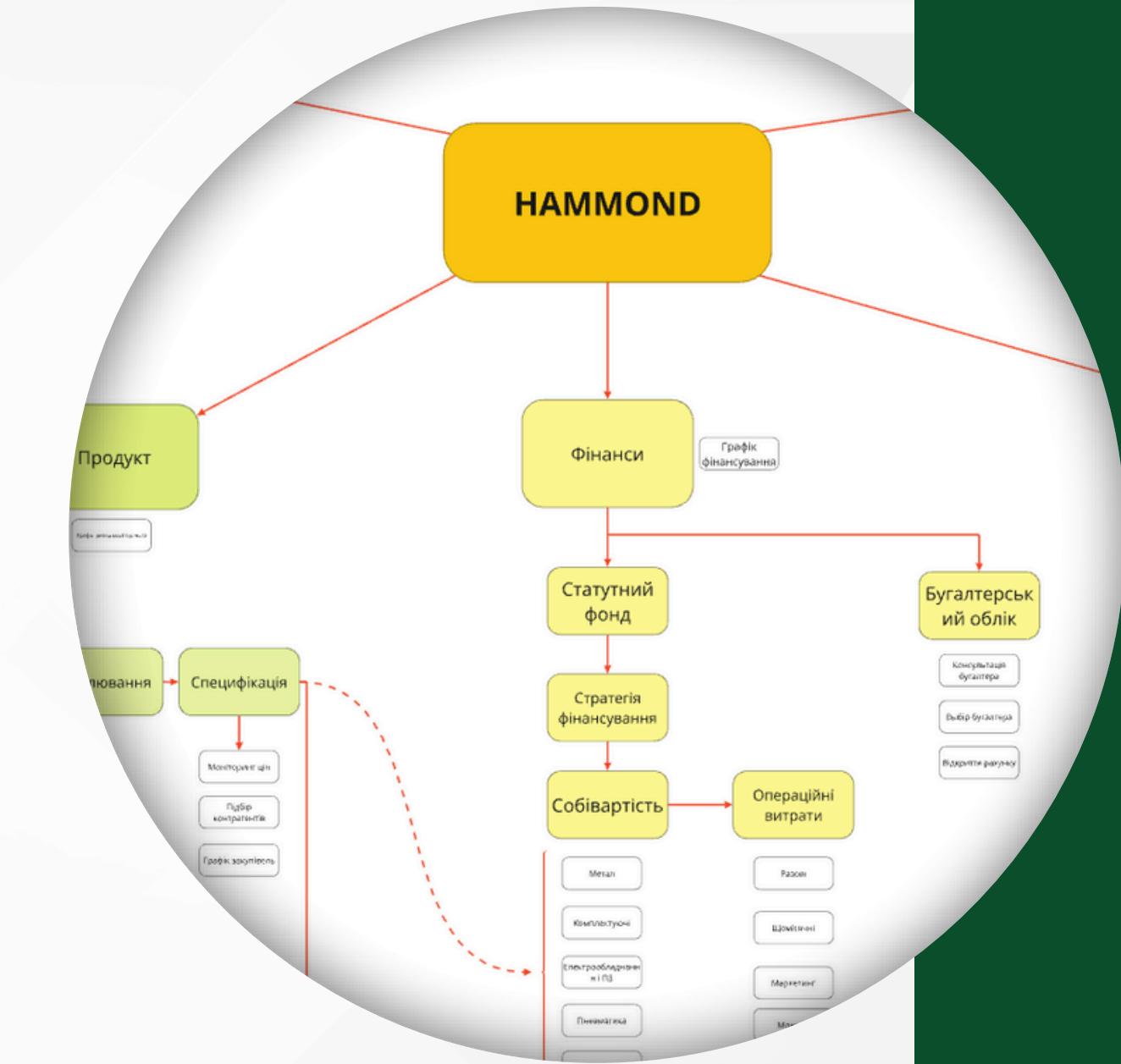
Dryer	Capacity (corn 28%-14%)	Product quality	Notes	Mobility	Notes	Oriental price, USD
Dryers portion type						
Mecmar	up to 150 T/24h	✗ low	The drying technology of this type of grain dryers provides for low drying quality, namely non-uniformity, thermal shock, and mechanical damage.	✗ relative	This type of grain dryer is not intended for transportation without complete disassembly. Therefore, significant resources and time are required to set it up for operation.	230 000
Agrex	up to 100 T/24h	✗ low		✗ relative		190 000
Pedrotti	up to 100 T/24h	✗ low		✗ relative		200 000
Dryers continues type						
Stela	200 T/24h	✓ high	The drying technology of this type of grain dryer is modern and provides high quality of the output product. Gentle and uniform drying with minimal product damage.	✓ high	They are characterized by quick installation in the working position and the possibility of transportation without disassembly.	300 000
Riela	160 T/24h	✓ high		✓ high		250 000
Project model Hammond	200 T/24h	✓ high		✓ high		150 000

FINANCIAL PLAN

The project aims to produce a pilot model (prototype), conduct tests, and organize marketing events.

The total cost of the project (production of the pilot model and the first year of operation) is **150,000 USD** (exchange rate 42 UAH/1USD).

There are three stages of project financing. The first stage is the purchase and manufacture of equipment in the amount of 70%. The second, organization of marketing events and preparation of working locations 10%. And the third stage is financing of operating costs for work on the client's side, rest amount of 20%.



EXPENSES

Product cost

- Direct material costs – 4,500,000 UAH
- Installation, commissioning, testing – 250,000 UAH
- Operating costs – 350,000 UAH
- Marketing costs – 190,000 UAH
- Other unexpected operating costs – 200,000 UAH

Additional costs

- Propane station – 450,000 UAH



SWOT ANALYSIS

Strengths

- Extensive experience with grain drying equipment that meets modern requirements.
- The company's staff has experience in the agricultural sector and can perform all stages of work.
- A small team at the beginning, which reduces administrative costs and increases the company's mobility.
- The presence of some established customer base.
- Interest in reducing costs and distrust of grain storage companies from customers.

Weaknesses

- Novelty of the service (difficult for customers to perceive the benefits).
- Low material base for development.
- Lack of feedback and recommendations from previous customers.
- Lack of storage capacity for potential customers.

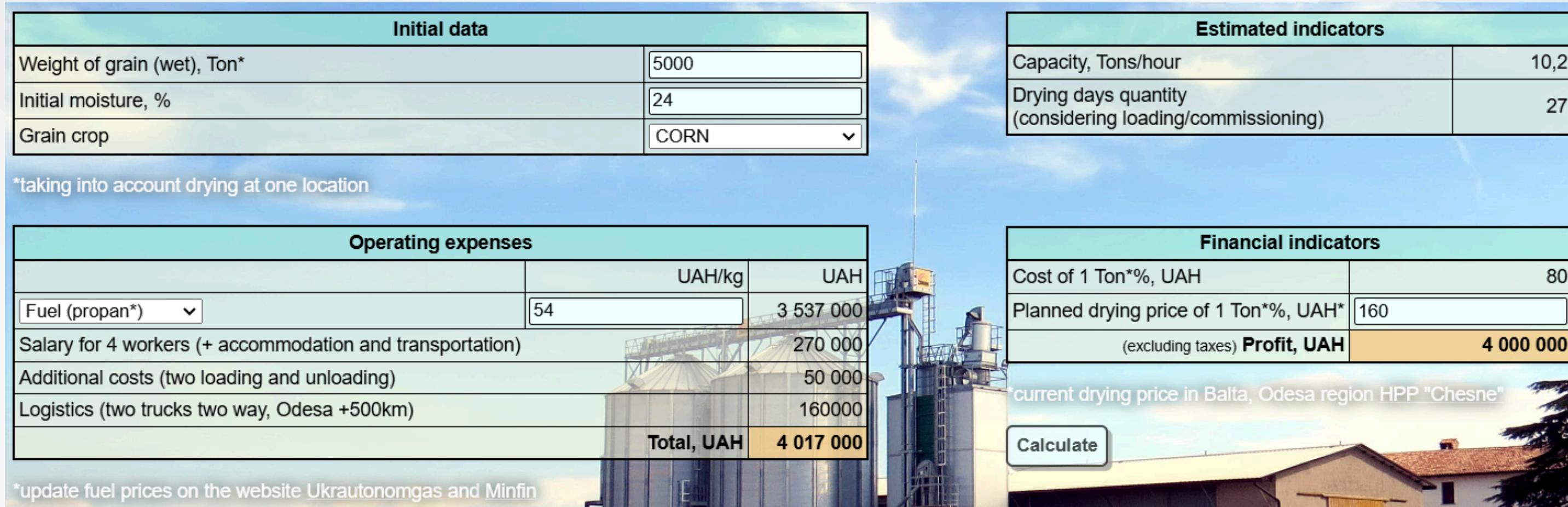
Opportunity Side

- Expanding the geography of services.
- Production new units of grain drying equipment.
- Provision of new types of services (storage, transportation, etc.).

Threat Side

- Raising prices for production components.
- Dumping by competitors (unlikely, rather the opposite).
- Unfavorable political and economic component in the country.

GRAIN DRYING SERVICE PROFIT



The form consists of four tables: Initial data, Estimated indicators, Operating expenses, and Financial indicators. A note at the bottom left indicates fuel price updates via Ukrautonomgas and Minfin.

Initial data	
Weight of grain (wet), Ton*	5000
Initial moisture, %	24
Grain crop	CORN

Estimated indicators	
Capacity, Tons/hour	10,2
Drying days quantity (considering loading/commissioning)	27

*taking into account drying at one location

Operating expenses		
	UAH/kg	UAH
Fuel (propan*)	54	3 537 000
Salary for 4 workers (+ accommodation and transportation)		270 000
Additional costs (two loading and unloading)		50 000
Logistics (two trucks two way, Odesa +500km)		160000
Total, UAH		4 017 000

Financial indicators	
Cost of 1 Ton*%, UAH	80
Planned drying price of 1 Ton*%, UAH*	160
(excluding taxes) Profit, UAH	4 000 000

*current drying price in Balta, Odesa region HPP "Chesne"

Calculate

*update fuel prices on the website [Ukrautonomgas](#) and [Minfin](#)

- The calculation table (hammonddryers.netlify.app) shows that under the condition of drying 5,000 tons (at one point) with a humidity of 24% and a price of 160 UAH/t*%, the profit (excluding taxes) will be **4,000,000 UAH**, which is **60%** of the initial investment. This will happen in **27 days** of dryer operation. Changes in data in either direction will cause a change in the time and volume of drying.
- To calculate other input data, go to the link: hammonddryers.netlify.app

PERSPECTIVE AND DEVELOPMENT

- As the investment returns and the grain drying service becomes more popular, customer demand is expected to grow, with the subsequent production of new units and provision of the service to a wider range of customers.
- It is also planned, if necessary, to attract investment from outside or to jointly develop a grain drying project with the client (farmer).
- Reducing the cost (compared to the prototype) of subsequent units by manufacturing a number of components independently, as well as by optimizing work with contractors.
- Entering the market of neighboring countries: Moldova, Romania, Poland, Kazakhstan and others.



THANK YOU FOR YOUR ATTENTION!

OUR CONTACTS



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“Great things should be done, not endlessly contemplated.”
J. Caesar



Ukraine, Odesa 2023