



# NEW TECHNOLOGY



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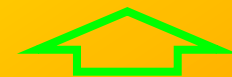
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# ЦЕЛЬ. ЗАДАЧИ. УЧАСТНИКИ ПРОЕКТА



## TARGET.

Apply a new phosphogypsum processing technology for world production and storage volumes

## TASKS.

Conduct an ICO company.

To create enterprises for the conversion of technogenic deposits and the processing of phosphogypsum.

Get patents from world manufacturers for new technology.

Certify new technology.

Confirm the value of the intangible asset (intangible asset) conversion of man-made deposits.

To buy up the world production and storage of phosphogypsum.

Introduce a new technology based on domestic and foreign enterprises.

Spread the new technology to other objects of world production and storage of phosphogypsum.

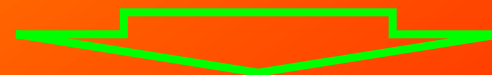
## PARTICIPANTS OF THE PROJECT.

Team of SBI CJSC, Kiev, Ukraine, ECOLOGY IS FAVORABLE Programs, PEOPLE'S COOPERATION Consumer Society

Authors of the project and technology

Investors

Crowdfunding, crowdfunding



# PROJECT ORGANIZATION

The project is functionally divided into 3 parts and is based on 2 sites - 3 enterprises with their own tasks, working in a single complex.

## ENTERPRISE "0":

Conversion of technogenic waste into secondary raw materials.

Quick return on investment.

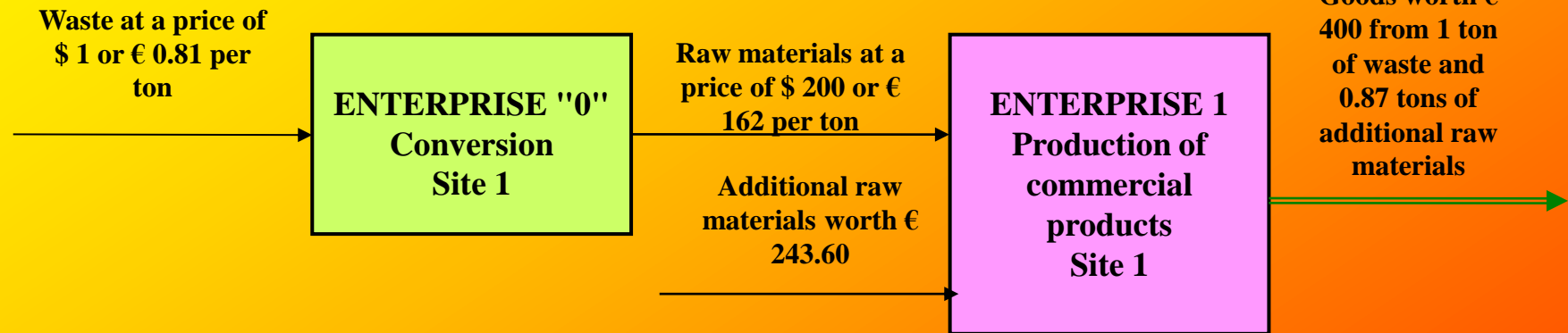
International patenting.

Technology certification.

Purchase of world raw materials.

**ENTERPRISES 1:** Implementation, development of technical solutions.

**ENTERPRISES 2:** Starting the expansion of technology to the world market



ENTERPRISE "0" allows for 2 years to reach payback and profit in the equivalent of a tangible asset - raw materials demanded under the contract by ENTERPRISE 1

# WORLD PRODUCTION AND OUR STRATEGY

**225 million tons per year** - the expected production of phosphogypsum back in 2015.

With the growth of the world's population, the need for phosphorus fertilizers will increase, and, consequently, the production of phosphogypsum as well.

**3 billion tons** (or more) - world reserves of technogenic waste

**OUR OFFER** is similar to the prototype - “treatment of ammonium phosphogypsum with the production of ammonium sulfate and industrial calcium carbonate”, but differs in addition to the processing of calcium carbonate for marketable calcium chloride and potassium sulfate, which have a wider demand and higher price in the market. Our profitability is an order of magnitude greater than any analogues.

## STRATEGY.

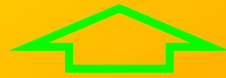
Expand ICO Companies from 3 enterprises, the work of which is organized in parallel at 2 sites: the 1st for certification of technology, conversion of waste into raw materials, development of technical solutions in Ukraine, and the 2nd for production abroad.

**At the ENTERPRISE “0”** (platform 1), certification and conversion, purchase of global reserves of phosphogypsum

**AT ENTERPRISE 1** (site 1) to work out the technology.

**From ENTERPRISE 2** (platform 2), begin the expansion of technology to the international market.

# ECONOMIC EXPEDIENCY



**More than 3 billion tons** - a deposit of man-made deposits.

**4.5 billion tons** - the minimum increase in waste over the 20 years of the license (225 million tons per year).

**7.5 billion tons** - total raw material base.

**€ 162 / t** - ENTERPRISE "0" income from the conversion of industrial waste into raw materials (€ 0.81 \* 200)

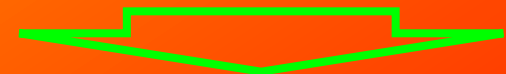
**€ 400 / t** - ENTERPRISE 1 income from the production of marketable products.

**€ 562 / t** - total income of both enterprises.

**€ 4,215 billion** is the profitability potential for 20 years of the entire company.

**BONUS** - we did not determine the presence of rare-earth elements (REE), but the yield of its allocation is

**€ 100-600 per tonne** of phosphogypsum from apatites of the Kola Peninsula.



# BASE. AN OBJECT. PERFORMANCE

**BASIS** - initiative development.

World priority, confirmed by patents of Ukraine 41069, 60983, 92756.

**OBJECT - ENTERPRISE 1 - "VINNITSAKHIMPROM" (preliminary)** - is privately owned and is offered for sale. All documentation for the purchase is.

More details at: <http://vinnytsia.all.biz/prodam-fosfogips-g1457247#fulldescription>, <http://vinnytsia.all.biz/prodam-fosfogips-g1457247>

500 thousand tons - an estimated amount of technogenic waste;

\$ 400 thousand - the cost of phosphogypsum;

\$ 60 thousand - the cost of the workshop is 1240 m<sup>2</sup> with a height of 5 m.

**\* HOWEVER, THE VINNITSAKHIMPROM OBJECT IS EXCLUSIVELY EXCLUSIVELY AS AN EXAMPLE CONVENIENT FOR THE PROCESSING OF TECHNICAL SOLUTIONS, DEMONSTRATION AND CERTIFICATION OF TECHNOLOGY AND CAN BE OPERATEDLY REPLACED !!!**

The total cost of the Property may be up to € 0.5 million.

**PRODUCTIVITY OF THE COMPANY 1**, thousand tons per year

**18.72** - RAW MATERIALS:

10.00 - phosphogypsum in terms of  $\text{CaSO}_2 \cdot 2\text{H}_2\text{O}$ ;

8.72 - potassium chloride KCl.

**16.56** - **PRODUCTS**;

10.08 - potassium sulfate  $\text{K}_2\text{SO}_4$ ;

5.89 - calcium chloride  $\text{CaCl}_2$ ;

0.56 - REE concentrate (if any)

2.16 - industrial water

With a working time of 8000 hours per year, production capacity will be 2.07 tons per hour, and for phosphogypsum - 1.25 tons per hour, for REE concentrate - 0.07 (?) Tons per hour.

# PROJECT COST. TOTAL PROCESS

€ 50.00 million - the total cost of the Project, including:

€ 2.50 million - ENTERPRISE “0” - conversion of waste into raw materials

€ 22.50 million - ENTERPRISE 1 - implementation and development of technical solutions, including;

€ 0.5 million - the value of the OBJECT

€ 22 million - the cost of introducing technology

€ 25.00 million - ENTERPRISE 2 - pilot production in Europe, including:

## TOTAL PROCESS



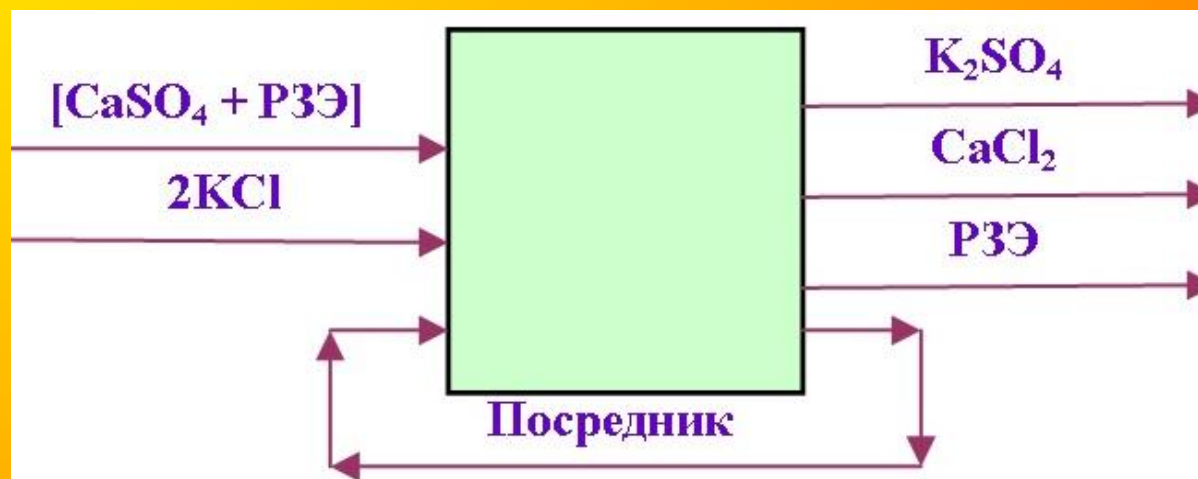
# ENTERPRISE 1

№	Naming of expenditures	€ million
1.	Property Cost	0,5
2	Organization and project management: (at \$ 0.5 million / year)	1,5
3	Design	5,0
4	Licensing obligations (royalties and first payment $0.25 * 3 + 0.05$ ), author's support and overhead costs ( $0.06 + 0.07 + 0.07$ ),	1,0
5	Technological equipment (manufacturing, commissioning and testing of a pilot plant).	10,5
6	Construction (buildings and structures, roads and communications)	3,4
7	Commissioning works	0,6
	<b>TOTAL:</b>	<b>22,5</b>



# RAW MATERIALS AND PRODUCTS

Raw materials phosphogypsum. Overview  
Additional raw materials. Potassium chloride  
Products. Potassium sulfate  
Products. Calcium chloride  
Rare earth elements



# ADDITIONAL RAW MATERIALS. POTASSIUM CHLORIDE



**Potassium salt** (or Potassium salt) - a mineral resource is a raw material for the chemical industry for the production of potash fertilizers

**Potassium chloride KCl** is used: to bind sulfates to form a marketable product - potassium sulfate fertilizer.

Scope of supply: **8.7 thousand tons / year** (about 0.5 wagons per day).

There is an option to exclude the supply of imported raw materials - potassium chloride and a proportional decrease in the production of potassium sulfate, the use of sodium with the production of sodium sulfate.

This will completely eliminate dependence on imports, but significantly reduce profitability.

This production option can be considered in case of adverse domestic and foreign policy for ENTERPRISE 1 and the need to exclude competitive pressure on production.

The correct solution to the issue of KCl supply is the purchase of the Dombrovsky quarry, an industrial deposit in Kalush, Ivano-Frankivsk Oblast, Ukraine

# PRODUCTS POTASSIUM SULFATE



**Potassium sulfate**  $K_2SO_4$ , or potassium sulfate, is one of the most widely used chlorine-free fertilizers in the world. It can be used on all types of soils, for all crops, as well as for balcony and indoor floriculture. It is recommended to apply under crops that do not tolerate excess chlorine (potatoes, beans, peas, beans). It is highly recommended for vegetables of the plain family (cabbage, turnip, radish, radish).



Suitable for all methods of application: for feeding during the growing season and when digging the soil in autumn and spring (the main method).

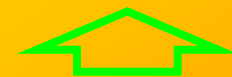
Potassium sulfate is widely used in foliar treatments by spraying in any irrigation systems and in any spray systems. Dose - 20-25 g per 1 sq.m.



Our planned production volume of potassium sulfate at the Facility is the Dombrovsky quarry, about 240 thousand tons / year (about 18 railway wagons per day).



# PRODUCTS CALCIUM CHLORIDE



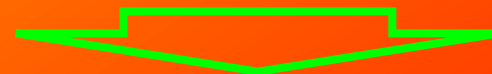
Calcium chloride  $\text{CaCl}_2$ , or calcium chloride, the most common and used product in the world.

It is applied in:

- chemical,
- forest and
- woodworking,
- oil
- oil refining and
- petrochemical industry;
- in refrigeration equipment;
- in the construction and manufacture of building materials;
- in non-ferrous metallurgy,
- during the construction and operation of roads;
- as a desiccant;
- to accelerate the hardening processes and increase the strength characteristics of soils;
- for the installation of curtains in sandy rocks by alternately injecting sodium silicate and calcium chloride solutions into the pores of rocks, etc.



Our planned volume of calcium chloride production at ENTERPRISE 1 is about 5.9 thousand tons / year (about 0.3 railway wagons per day)



# CALCULATION OF PRODUCTION EFFICIENCY

Total reaction: $[\text{CaSO}_4 \cdot 2\text{H}_2\text{O} + \text{P}_3\text{O}_{10}] + 2\text{KCl} = \text{CaCl}_2 + \text{K}_2\text{SO}_4 + 2\text{H}_2\text{O} + \text{P}_3\text{O}_{10}$						
Name of costs, €	$\text{CaSO}_4 + \text{P}_3\text{O}_{10} \cdot 2\text{H}_2\text{O}$ waste / raw materials	2KCl	$\text{CaCl}_2$	$\text{K}_2\text{SO}_4$	REE, about 5,6% $\text{La}_2\text{O}_3$	$2\text{H}_2\text{O}$
Molecular weight	172,15	149,10	101,34	174,27	9,64	36,00
Weight sum	321,25		321,25			
Estimated coefficient (EC) per unit of $\text{CaSO}_4 \cdot 2\text{H}_2\text{O} - 172.15 \rightarrow 1$	1,00	0,87	0,589	1,01	0,056	0.21
Amount EK	1,87		1,87			
Rate	1,00	280,00	365,00	688,50	110,00-600,00	
Raw materials and products	1,00	243,60	215,00	695,39		
Planned production costs	100,00					
Amounts of raw materials and revenue	344,41		910,39 without REE			
Capitalization of raw materials	162,00					
Conversion amounts	506,41		910,39 without REE			
Balance: raw materials / products	403,98					

\* € 1 - the cost of phosphogypsum along with the cost of its storage area

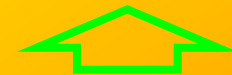
\*\* € 100 - costs accepted including royalties of € 25 / t (5%)

\*\*\* € 162 / t - 200 times the capitalization of raw materials from its value € 0.81

€ 110-600 / t - REE yield - BONUS.

€ 400 / t - profitability accepted by us for further calculations

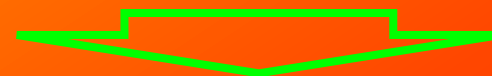
# DESIGN COSTS. COUNTERPARTY



Stage of work	Percentage to total, %	Costs, € million.	Duration
Stage "0"	10	0,5	3-6
Stage "1". Feasibility study of investments (feasibility study).	12	0,6	3-6
Stage "2". Project.	30	1,5	3-6
Stage "3". Working documentation (WD).	48	2,4	3-6
<b>Stage of work</b>	<b>100</b>	<b>5,0</b>	

## The basic structure of counterparty works and services.

1. Development of initial data for design.
2. The project.
3. Expertise and approval.
4. Production.
5. Commissioning.
6. Pilot operation.
7. Author support.



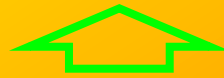
# ORGANIZATION AND MANAGEMENT COSTS

№	Name of costs	Cost, thousand €
<b>1</b>	<b>Salary of key specialists</b>	
1.1	Project Manager, President of SBI CJSC	3,0
1.2	Chief Accountant	2,0
1.3	Chief Technologist	2,0
1.4	Chief chemist	2,0
1.5	Chief Designer	2,0
1.6	Expert chemist	2,0
	<b>TOTAL, monthly salary fund:</b>	<b>13,0</b>
1.7	* Taxes per month, about 65%	9,0
	<b>TOTAL, monthly salary:</b>	<b>22,0</b>
	<b>TOTAL, for the year:</b>	<b>264,0</b>

<b>2.</b>	<b>Current expenses</b>	
2.1	<b>Consulting work</b>	1,0
2.2	<b>Representative</b>	1,0
2.3	<b>Travel</b>	5,0
2.4	<b>Communication</b>	1,0
2.5	<b>Transport costs</b>	2,0
2.6	<b>Rent</b>	5,0
2.7	<b>Overhead</b>	1,0
	<b>TOTAL, per month:</b>	<b>16,0</b>
	<b>TOTAL, for the year:</b>	<b>192,0</b>
<b>3</b>	<b>One-time organizational costs</b>	<b>30</b>
	<b>TOTAL, for the year:</b>	<b>486,0</b>
<b>4</b>	<b>Reserve Fund for the year</b>	<b>14,0</b>
	<b>BUDGET FOR THE YEAR</b>	<b>500,0</b>

\*\* The composition of the working group, the structure and amount of costs are indicative. Within the budget, the project manager has the right to adjust both the expense items and the costs themselves.

# BUSINESS DEVELOPMENT 1



Expenditures	€, million
<b>1st year. Acquisition of the Object and design</b>	
Property Acquisition	0,50
Stage "0", term 3-6 months	0,50
Stage 1, period 3-6 months	0,60
Stage "2", term 3 months. from 9 months	0,40
Project organization and management costs	0,50
The first payment for the transfer of documentation of an intangible asset	0,05
License Obligations (Royalty)	0,25
Author support and its overhead	0,06
Technological equipment	1,00
Capital expenditures	0,20
<b>TOTAL for the first year:</b>	<b>4,06</b>

<b>2nd year. Production and testing of a pilot plant</b>	
Stage "2", the second stage of 6 months. from 9 months	1,10
Stage "3", 1st stage 9 months. from 15 months	0,90
Project organization and management costs	0,5
License Obligations (Royalty)	0,25
Author support and its overhead	0,06
Technological equipment	3,70
Capital expenditures	1,50
<b>TOTAL for the second year:</b>	<b>8,01</b>

<b>3rd year. Pilot operation, revision, adjustment of project documentation</b>	
Stage "3", second stage 6 months from 15 months, cost	1,50
Project organization and management costs	0,5
License Obligations (Royalty)	0,25
Author support and its overhead	0,06
Technological equipment	5,80
Capital expenditures	1,72
Commissioning works	0,10
<b>TOTAL for the third year:</b>	<b>10,43</b>
<b>TOTAL project costs:</b>	<b>22,50</b>



# CALCULATION OF THE PAYBACK OF THE COMPANY 1

Year	Implementation costs, €	Sum of costs at the end of the period, €	Income for the year and return credit funds	Balance at the end of the period, €
1	-4,06	-4,06	0,00	-4,06
2	-8,01	-12,07	0,00	-12,07
3	-10,43	-22,50	<b>1,80</b>	-20,70
4	0,00	-20,70	4,00	-16,70
5	0,00	-16,70	4,00	-12,70
6	0,00	-12,70	4,00	-8,70
7	0,00	-8,70	4,00	-4,70
8	0,00	-4,70	4,00	-0,70
9	0,00	-0,70	4,00	3,30
10	0,00	3,30	4,00	7,30
<b>ИТОГО:</b>	<b>-22,50</b>		<b>29,80</b>	<b>7,30</b>

**€ 0.5 million** - purchase of the Object

**€ 22 million** - technology implementation

**2nd year** - the conversion of 0.5 million tons of waste into raw materials with a capitalization of 200 times and share income **€ 81 million**

**9th year** - payback on production

**10th year** - output on production income **€ 7.30 million**

**€ 88.3 million - TOTAL INCOME OF COMPANY 1 for 10 years**