

## **"MUSHROOM INDUSTRY" INVESTMENT INTERNATIONAL PROJECT**

A brief feasibility study for investors and partners of the Project

Power of full-cycle mushroom industrial complex "Mushroom Industry" (hereinafter - project, complex) is 25 tons of mushrooms per day. The complex includes: the production of compost, mushrooms and food from mushroom protein which is made by traditional and innovative technologies.

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### **Status of the Project**

The project passed an economic examination of the Ministry of Economic Development and Trade of Ukraine, as published an expert conclusion number 01 - 2013 (dated by 25/01/13). The project is included into the list of government projects;

Kyiv Regional State Administration expresses the personal interest in realization of the project on territory of the Kyiv region. The project is included into the Government program of economic development of the Kyiv area on a next year (letter code, from 25.04.2014 №03-01-17-416).

### ***1. The current state of industry***

Mushrooms are one of the most promising foodstuffs; industrial production of that is rapidly grows. World countries attach great importance to the development of this industry.

At the same time, Ukrainian mushroom business in comparing to the level of the state of mushroom production in the world is in the initial stage. The majority of Ukrainian mushroom enterprises working on customized hardware USSR, and some use equipment imported from Europe - withdrawn from service during the modernization of European enterprises. The volume of production of mushrooms in Ukraine is only 35-37 thousand tons per year. The lack of mushroom is compensated due to an import, in particular from Poland that after the sizes of territory half as much as Ukraine, and produces about 350 thousand tons. France that after the sizes of territory approximately equals Ukraine, produces about the 232 thousand tons of mushrooms and Netherlands that produce about the 420 thousand tons of mushrooms on a year. Currently, Ukraine imports about 50 000 tons of mushroom products, totaling about 125 million dollars. United States, which means that 2/3 of the total consumption of mushrooms, is met by imports. At the same time, Ukraine has all preconditions to fully meet the needs of the domestic market and export mushroom products to world markets.

### ***2. Process, power, equipment***

The complex "Mushroom Industry" is a modern industrial full cycle production line with a capacity of 25 tons of mushrooms and mushroom products per day.

Technological scheme of the complex is constructed so that the entire production process will be combined on the same site in a continuous process of mushroom production from raw materials to produce compost, mushroom cultivation, its processing into finished products, storage and marketing.

The complex will be equipped with the world's best examples of mushroom production equipment from Spain, Italy, Netherlands, USA, China as in Ukraine such equipment has not yet

been produced. Supply of equipment and services will be performed under the supervision of foreign experts.

### **3. Product**

The main product will be fresh mushrooms about 30-35% and canned mushrooms about 65-70%, followed by the introduction of new products: sausage and mushroom sausage, mushroom sticks, fast food products, and more. The range will be depended on the needs of the market. Production will be supervised Kharkiv State University of Food Technology and Trade.

### **4. Resource base of Ukraine, potential, energy dependence**

The main raw materials for growing mushrooms are secondary resources of agriculture - straw, sunflower husk, flax awn, stems of oil-bearing cultures. Ukraine has considerable raw potential as annual harvest cereals (wheat, rye, barley, etc.) within 50 million tons or more. Of which receives 55 million tons of straw or more. In combination with 1 ton of dry straw, modern technologies will be produced 850 kg of fresh mushrooms.

The complex is planned to be energy independent. Spent mushroom compost recycled into wood pellets provides 100% energy spends. A substantial portion of energy can be sold on the energy market.

### **5. Initiator and executor of the project**

The initiator of the project in Ukraine is a nationwide public organization "The Association of Mushroom Producers of Ukraine", which aim to get experience of industrial mushroom in the world for its introduction in Ukraine. Currently, the Association seeks to prepare for the project "Mushroom Industry".

To implement the project in Ukraine, The Association together with the investor will create a project company - limited liability company (GmbH).

### **6. Cost, payback**

6.1	The estimated cost of the project	40 million euro
6.2	Payback time	5.5 - 6 years

### **7. Terms of realization of project**

Terms realization of the investment project on construction of mushroom industrial complex "Mushroom Industry" as follows:

- Terms of design - 0.5 year;
- Terms of building complex - 1.5 years.

Some of the work on the development of working documents will be held in parallel with the construction. All objects of complex and engineering infrastructure must be built simultaneously, according to the schedule.

### **8. Environmental impacts**

Environmental impacts to the public, such as the smell of ammonia will be neutralized by the use of modern building structures, equipment and technologies for air conditioning. The spent compost will be converted to energy pellets. Waste of pellets production will be used as organic fertilizer in agriculture.

### **9. Risks and possible reduction**

Given the fact that Ukraine has no experience in the development of large-scale innovative projects in the field mushroom production to the project "Mushroom Industry" will be involved foreign specialists.

The level of risk project "Mushroom Industry" can be classified as areas in which risks in technological aspect can be reduced to zero. In economic terms, the risks can be significant. As the demand for food in the domestic market and the world with increasing population will only grow.

### **10. Cost-effectiveness**

According granted to Italian and Chinese project partners made a financial model for modeling variations of the project "Mushroom Industry":

Financial and economic performance of the project	
Payback period (DDP)	5 years after project start (8 years after the start of the active phase of the project)
Net present value of the project (NVP)	40 million euro
IRR / Return (IRR)	22,5%
Profit ratio (Pi)	Return on net profit increased by 7.3% in the first year after the launch of up to 14% when leaving 90% capacity utilization
Ratio of benefits / costs (BSR)	1,14
The discount rate (RD)	20% in the forecast period (2014-2022) and 15% in the post-forecast period (2022-)
The ratio of debt and equity funds	The project is planned to be conducted without borrowing
Coverage ratio (current assets)	Involvement of loans and payables to suppliers, employees and budget of the project are not expected. Initial current assets under the project covering 4 months of the complex (production cycle lasts 1 month).

**Welcome to cooperate!**

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