

## **Significantly reduced production of waste and air pollution by innovative crop drying technology without using fossile or other external energy source**

The Szuro-Trade Ltd since its foundation in 1996 has become one of the dominant companies of the region. Its net turnover in 2014 was greater than 9 billion HUF. The trajectory of the company has been unceasingly increased, it is regularly one of the participants of the TOP 100 companies of the county.

In the project the crop drying technology as the part of the production technology of the SZURO-TRADE Ltd will be developed. As a result of the innovative development the company will significantly reduce the amount of the waste during its production, since it completely utilizes the waste and byproducts of the crop drying process. Hereby the waste management and process become more efficient in accordance with the call for proposals.

The evolved result of the project:

Complex crop drying technology based on new paradigm, which looks upon the crop drying process as a closed energy process without fossil or any other external energy source. The related service is the crop drying service of SZURO-TRADE Ltd.

One of the factors which emphasizes the importance of the project is that the crop drying is specifically energy-intensive technology which currently uses considerably amount of fossil energy (gas).

The new technological solution of the project will completely reduce the external energy need of the currently used crop drying technology and the amount of the waste arising during the crop drying process.

The novelty of the technology will be further intensified by the closed post-harvest technology that will be developed in a modular way, which permits the ex post modification of the heat exchange system. A complex control system will be developed, which is able to handle all of the energy set-ups. According to the above mentioned factors our project has novelty content at European level.

The new technology completely provides the necessary heat quantity needed for the crop drying by utilizing the byproducts of the crop drying process. Hereby completely substitutes the gas consumption which significantly reduces the environmental pollution. Accordingly direct effect is the reduction of CO<sub>2</sub> emission and the amount of waste.

Nevertheless after the realization of the project the environmental pollution and the amount of waste will be significantly reduced by the following direct elements:

- The amount of impurities of crops, which remains at the field will be reduced,
- the efficiency of the cleaning process of the harvesting equipment might be lower, which reduces the specific flue gas emission content,
- the crop transportation will be specific lower logistic task, alongside lower environmental pollution,
- the pre-cleaning process can be omitted, which reduces the needed driving capacity, herewith reducing the environmental emission,
- By improving the efficiency of the crop drying technology, emission reduction can be achieved commensurable to the energy saving,
- The in situ resulting cleaning waste can substitute wood chips, reducing the environmental pollution by its emission aroused during its cultivation, post-treatment, and transportation.
- We save the usual and forced processes arisen from tasks regarding the harvest and the postharvest crop treatment including its environmental effects.

The possibilities of disposing of the crop drying service are currently given, the demand is ensured. At the same time the savings in relation with multiple elements promote the market presence and also promote the potential new market entry because pricing strategy can be made in accordance with the specific market segment due to the achieved growth of efficiency respectively cost savings.

In order to achieve the upper objectives the following project activities will be carried out:

- Experimental development
- Investment
- Project management
- Publicity

The total budget of the project: 403.423.530 HUF

The required amount of subsidy: 219.789.325 HUF

The application tightly correspond to the European Union 2020 strategy aiming the reduction of the emitting of greenhouse gases and energy efficiency and also correspond to the 2011-2020 National environmental technology innovation strategy, which emphasizes the invention of environmental friendly technologies which provide prevention, handling and reduction of the pollution regarding the specified areas.