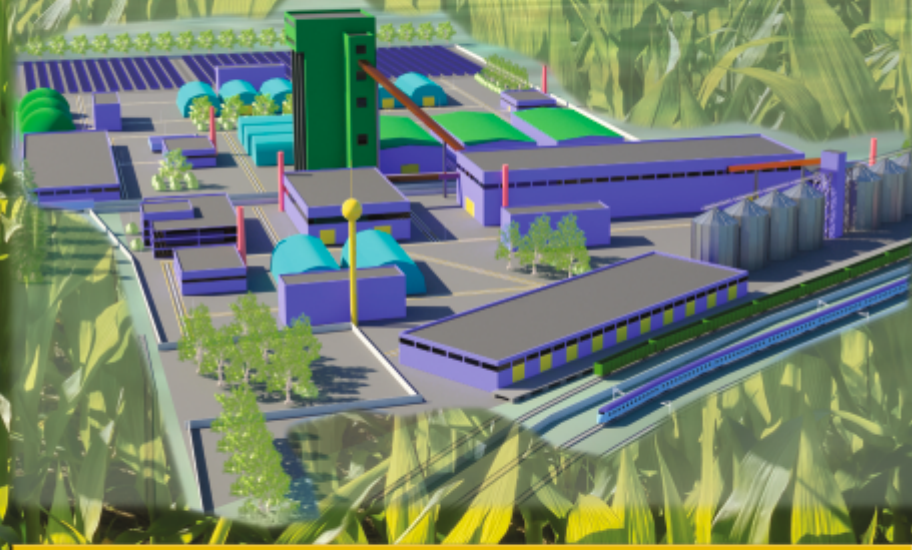
CORN PROCESSING COMPLEX

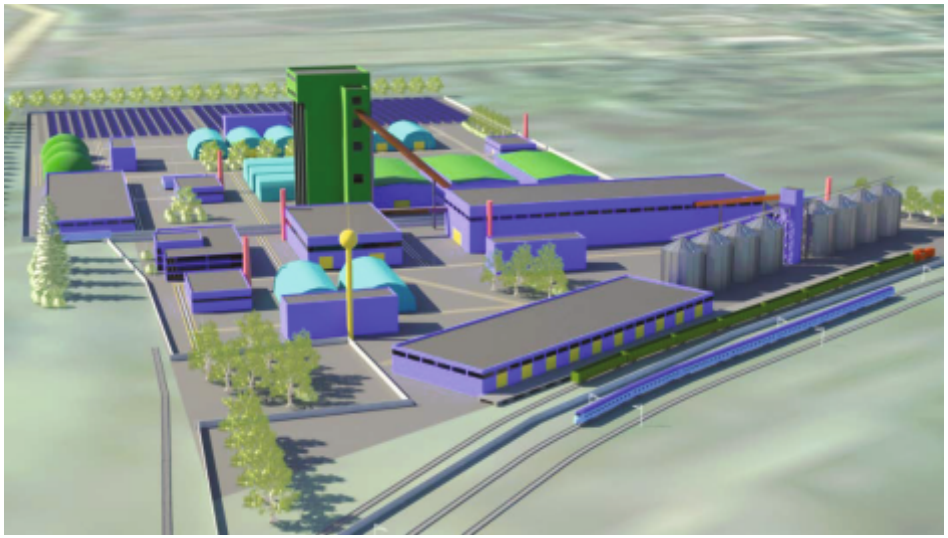


Investment proposal

AGRO PRO MANAGEMENT

Corn processing complex with input capacity of 150 tons of corn per day

brief information

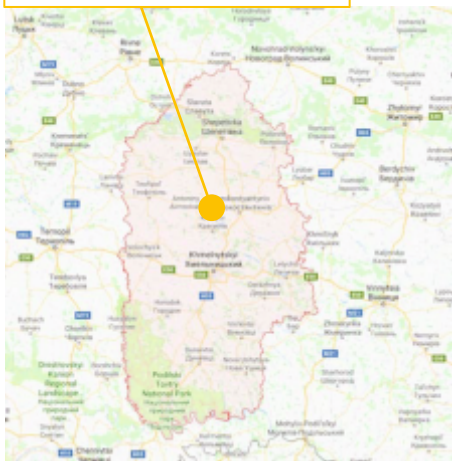


Investors and partners are invited to join a project of complex construction for preparation, storage, primary and deep processing of corn and byproducts input capacity of 45,000 tons of corn grain per year

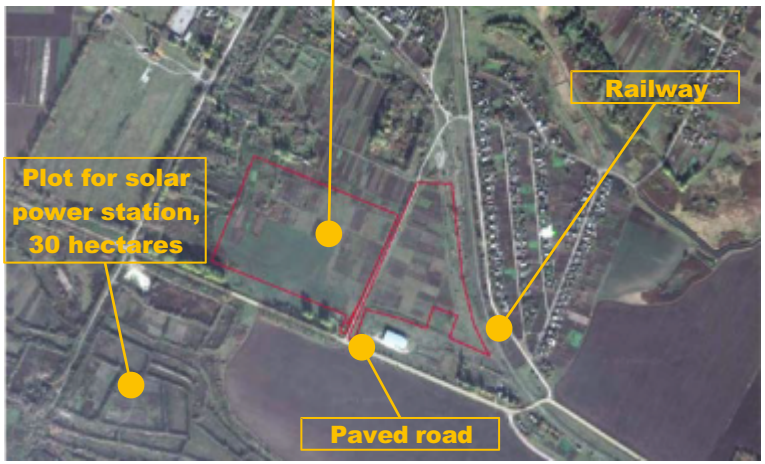
Location of construction: Kremenchuky settlement, Krasilovsky district, Khmelnytsky region, Ukraine

Khmelnytsky region, Ukraine

Kremenchuky settlement



The 20-hectare land plot is owned by the company Agro Pro Management



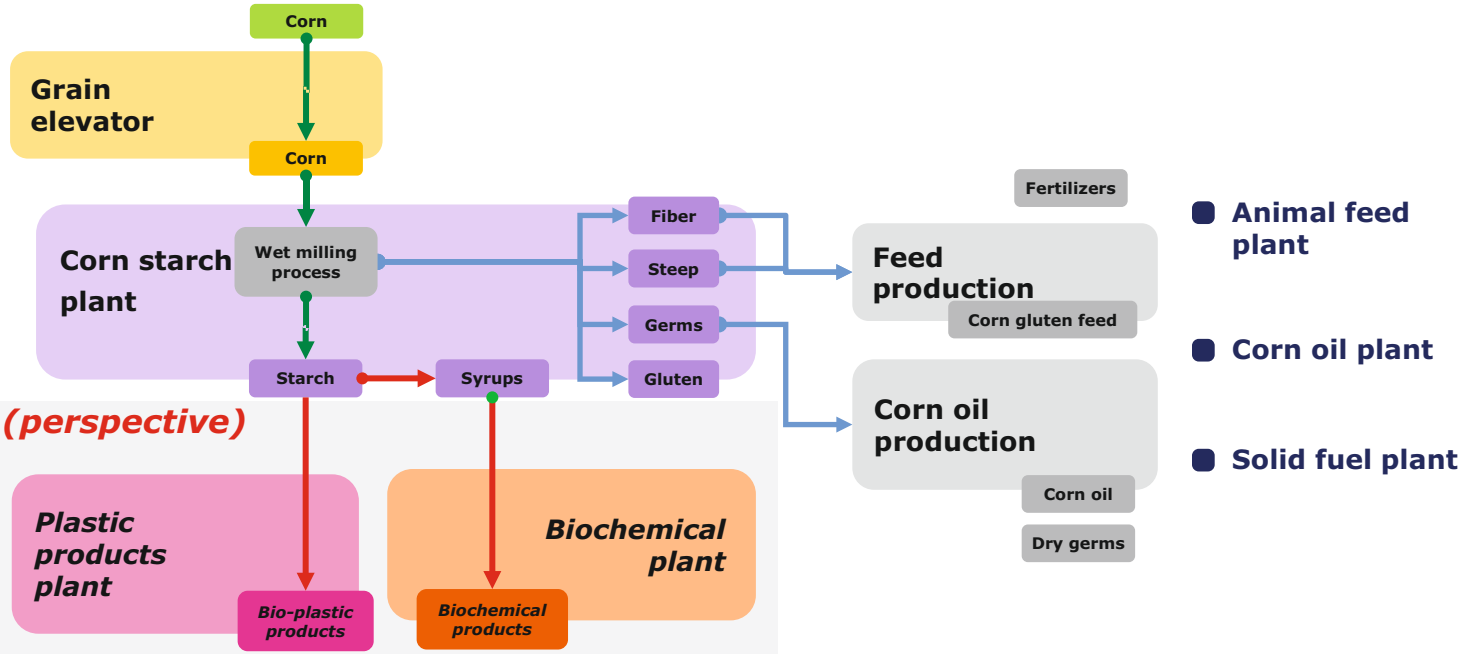
Structure of the complex, main and related co-products

Main productions ←

Related co-productions →

Perspective productions →

- Grain elevator with a capacity of 50.000 tons
- Starch plant input capacity of 150 tons of corn per day



- Animal feed plant
- Corn oil plant
- Solid fuel plant

High-tech productions (perspective)

- *Bio-plastic products plant*
- *Biochemical plant*

Main products*

Products	Production per year
Corn grain	45 000 tons
Starch	30 000 tons
Bio-plastic products	*10 000 tons*
Glucose Syrup	*12 000 tons*

Related co-products

Products	Production per year
Gluten	1 860 tons
Germs	1 800 tons
Steep	3 450 tons
Corn Feed	2 700 tons

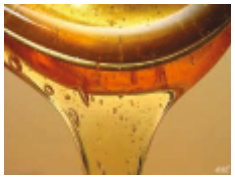
*One of this project's key advantages is that all products may become a tradable commodity and at the same time serve as raw materials in other production processes, thus enabling production to be optimized according to current market demand

Market advantages

Global demand for all main products of the complex is steadily growing and will grow in the future.

Corn. Corn has come second after wheat in terms of production in the world before. Almost 125-140 million tons of world corn production takes part in international trade. Ukraine comes fourth after Argentina in world corn export. The corn export of Ukraine is 16,5 million ton in 2015/16 season. According to the forecasts of analysts in 2017/18 Ukraine exports 21.3 million tons of corn to foreign markets, which is 28% more than the previous season.

Corn starch. Global corn starch market is expected to witness significant growth over the next six years owing to increasing usage in food & beverages, processed food, paper & board and detergent industries. Sales of starches and derivatives were $51.2 billion in 2012 and are expected to reach $77.4 billion by 2018, a compound annual growth rate (CAGR) of 7.1% between 2012 and 2018.The global industrial starch market size was estimated to be USD 103.5 billion in 2023 and is anticipated to witness a CAGR of 3.5% from 2018 to 2023 (forecast period). The global industrial starches market has high potential for growth due to the multiple functionalities of starch, starch derivatives & sweeteners in a diverse range of end-user industries.



Glucose Syrup. Corn (glucose) syrup is widely used in the food industry, as well as a universal raw material for biotechnology. The Global Market for Glucose Syrup has witnessed continued demand during the last few years and is projected to reach 29,888 kilo tons by 2022, at a CAGR of 3.6% from 2016 to 2022. Raise in demand across various industries such as food and beverage, pharmaceuticals, confectionery are driving the global glucose syrup market.

Products from bio-plastic. The Global Market of Bio-plastic is growing rapidly last years and total volume is predicted form 2054 kilo tons in 2017 to 2440 kilo tons in 2022.

Biotechnological products. Refined corn products have long been utilized for more than food ingredients. Thanks to decades of work by scientists and researchers in our industry, the contents of a simple kernel of corn are the basis for a thousand everyday products, such as pharmaceutical casings, paper goods and automobile tires.
Today, renewable, sustainable corn products are a commercially-viable substitute for many petrochemical-based goods, from hard plastics to food packaging to carpets. And with technological improvements in fermentation techniques, they are moving into the next generation of technology: utilized in 3-D printing inks and studied by nanotechnology scientists as a method for delivering cancer treatments. These and other advanced biobased products represent a growing economic opportunity, with an estimated global market value of more than $440 billion by 2020.

SWOT FOR STARCH AND SYRUP PLANT (Ukraine)

	Success factors	Failure factors
Internal	• Up to date, modern technology (design from scratch) • Plant design enabling various products manufacturing from day one: various variants of starch or syrup (design from scratch) • Access to domestic market of raw agro materials (with quality higher than EU average) • Very competitive price of workforce • Very competitive price of energy and water • Synergy with other production plants (growth potential in agro production) • Own sales resources (direct sales) • Access to EU markets • Very competitive financing • Relatively short ROI period (low break even point)	• Lack of stable law • Need for producing new (not yet planted) corn species • Need for investment into improvement of farmland efficiency (good grade of farmland, poor infrastructure) • Need for investment into improving technical awareness of suppliers, contractors, and employees qualifications • Latency on the customer side (need to modify recipes) • Time and cost of project development - from concept to the first product sales
External	• Growing market size (6-8% per year), combined with growing price (5-6% per year) in America and Europe • Much higher rate of growth in Asia / Pacific region (double digit) • Growing number of industries utilizing such products (food & drink, pharma, paper, cosmetic, animal feed industries) • UAH exchange rate advantage • Global gluten free trend • Strong EU lobby supporting change in manufacturing recipes • Growth in bioplastic production (biodegradable plastics) • Merge and acquisition potential of the project by a global player (at any stage of development)	• High competition from EU manufacturers' (release of production quota as of 2017) • Accumulation of production resources in hands of few global players (Top5 accounts for 50% of global production: Cargill, Ingredion, ADM, Tate & Lyle, Roquette) • Certification requirements for various markets • Growing awareness of high hydrocarbonate diet effects

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