

## Sustainable Production



### Biomass power plant:

Thanks to bran, wood and biogas, we produce our own sustainable green energy



### Promoted transport by ship:

direct access to the river Meuse and the major ports of Antwerp-Rotterdam-Amsterdam (ARA)



### Circular economy:

for suppliers, partners and local customers



### Sustainability certifications



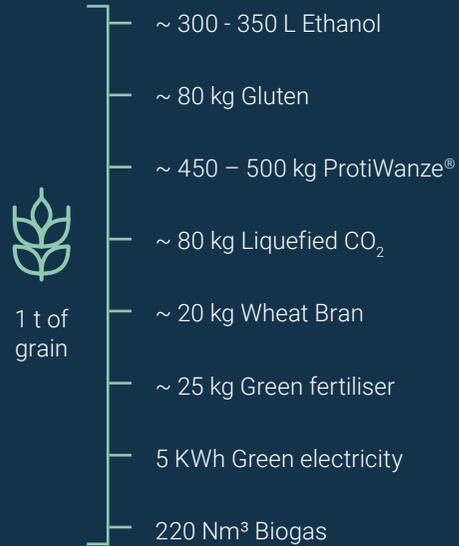
## Products made from biomass

- Zero Waste production concept
- Greenhouse gas reduction during the whole production process
- Helping customers to reduce carbon foot print
- High quality products for plate, tank, trough and more



## Raw materials & Products

10,000 t of Belgian sugar beets and 800,000 t of feed wheat from Belgium and neighbouring countries each year



~ 300 - 350 L Ethanol
~ 80 kg Gluten
~ 450 – 500 kg ProtiWanze®
~ 80 kg Liquefied CO <sub>2</sub>
~ 20 kg Wheat Bran
~ 25 kg Green fertiliser
5 KWh Green electricity
220 Nm <sup>3</sup> Biogas



 ALL RAW MATERIAL COMPONENTS ARE PROCESSED INTO VALUABLE PRODUCTS

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**BIOWANZE**  
Innovation from biomass



## OUR PRODUCTS



### Renewable ethanol

Climate friendly alternative to fossil fuel.



### Gluten - wheat protein

Beneo Pro VWG for bakery goods and feedstuffs, e.g. aquacultures.



### BeneoPro W-Tex

Gluten as basis for meat alternative. Worldwide marketing by BENEIO (Südzucker Group).



### Liquefied CO<sub>2</sub>

Purified green CO<sub>2</sub> generated during fermentation is used e.g. in the food, beverage and pharmaceutical industries.



### ProtiWanze® - liquid protein feed

For cattle, pigs and pet food. Local feedstuff that contributes to the European protein supply, marketed by local partners in Belgium and neighbouring countries.



### Wheat bran (GMP+)

Used in feedstuffs for cattle and pigs.



### Green fertilisers

Residues of bran combustion in the biomass power plant, rich in potassium, phosphorus and calcium.



### Green Power

Fed into the public grid and capable of compensating for any potential shortages in electricity supply.

## Advantages of renewable Ethanol

- Ethanol (alcohol) for fuel applications in Super E5, E10 or E85
- Renewable fuel produced from local biomass, contributing to the **security of European energy supply**
- Reducing greenhouse gas and fine particulates emissions
- Higher octane number than petrol, used as octane booster (ETBE)
- Compatible with all combustion engines
- Our products only contain as much CO<sub>2</sub> as the biomass previously absorbed during growth

INNOVATIVE PRODUCTION  
PROCESS REDUCING  
GREENHOUSE GAS  
EMISSIONS BY UP TO  
80% COMPARED TO  
FOSSIL FUELS

## BioWanze at a glance

- Start of production: 2008
- Member of CropEnergies Group
- Investment volume: 245 million €
- Ca. 130 employees and several hundred indirect jobs in the region
- **Annual production capacity:**
  - 300,000 m<sup>3</sup> Renewable Ethanol
  - 60,000 t Gluten
  - 65,000 t Liquefied CO<sub>2</sub>
  - 420,000 t ProtiWanze®
  - 15,000 t Bran GMP+
  - 20,000 t Green fertiliser
  - 180,000 Mwh Green Electricity
  - Biogas

MOST IMPORTANT MANUFACTURING  
SITE FOR RENEWABLE  
ETHANOL IN  
BELGIUM

