



ProPelety Ltd.

**Alternative using of surpluses, residues and waste
for the economical production of pellets
and their using as FEEDING, BEDDING, FERTILIZER or FUEL**



About ProPelety Ltd. company

Basic information

ProPelety

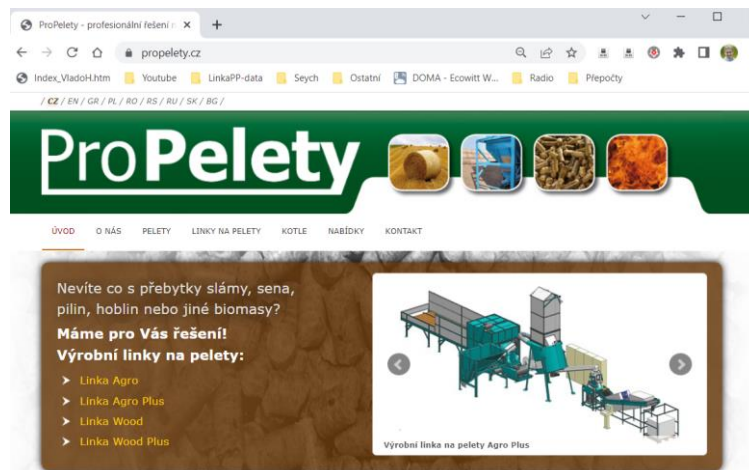


Žďár nad Sázavou, Czech Republic

www.propelety.cz



- ProPelety Ltd. develops, manufactures, supplies and services production lines for the processing of agromass, dendromass and waste
- ProPelety s.r.o. has supplied almost 47 lines since 2010 with a total value of more than 10 million EUR
- ProPelety s.r.o. processing the pelletization order and organizes the pellet trade
- The company is co-owner of the patent for "KSP Fertilizer,,
- The company is the owner of the documentation for production:
 - Pellet lines incl. additional devices
 - Burners for problematically combustible materials
 - Hot air stove, mobile pellet heater and dryer
 - Prototype of pyrolysis unit



ProPelety Development Center

Žďár nad Sázavou, Czech Republic



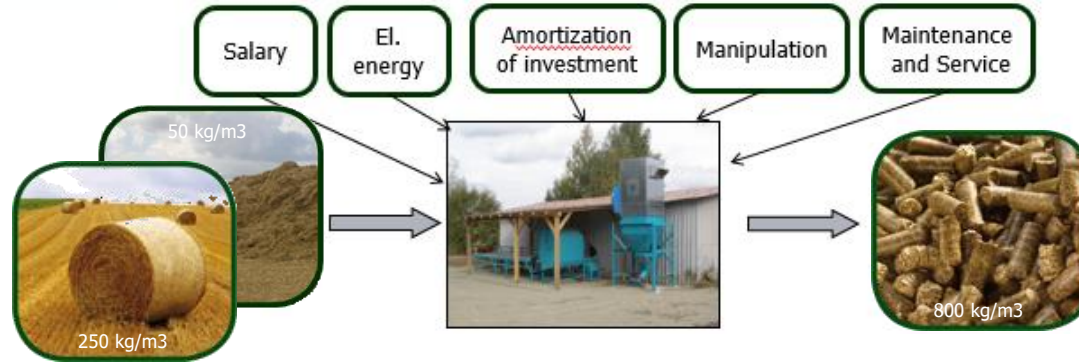
- It has a unique test operation of the prototype of the ProPelety pelletizing line
- It is the operating background for further development. It contains a laboratory, a workshop, an assembly hall and an office space.
- It owns a database of results from more than 300 pelletization tests for different types of materials



Why pellets?



Raw biomass



Product
=> Pellets



Technical reasons

- Transformation of raw biomass into the product
- Smaller storage requirements, easier handling and dosing
- Pellets = product for automatic processes

Economical reasons

- Alternative product from renewable resources
- Availability by standard technologies in agri industry
- Wide range of using - FEEDING, BEDDING, FERTILIZER, FUEL

Political reasons

- Next employment for agricultural companies
- Environmentally friendly solution
- Develop local solutions for global trade

Granule

with a high degree of compress

- diameter of granules: 6, 8, 12 mm, length: 1-3 times the diameter
- binders are natural compounds that are automatically released from each of the biomass due to the pressure, friction and temperature during granulation - mostly Lignin - natural organic compound, which is contained in the cellular structure of each plant



Pellets from different material types

- **Wheat straw pellets**



- **Rapeseed straw pellets**



- **Hay pellets**



- **Wood sawdust pellets**



- **Pellets from dry alfalfa**



- **Pellets from crushed wood compost with additives**



- **Pellets from dried separate from biogas station or from sewage sludge**



- **Paper pellets from TAP and sorted municipal waste**



Wide range of pellet using



Depends on the composition of input material

Quality of input:

- **Nutritional value**

- depending on the composition of the feedstock

- **Absorption value**

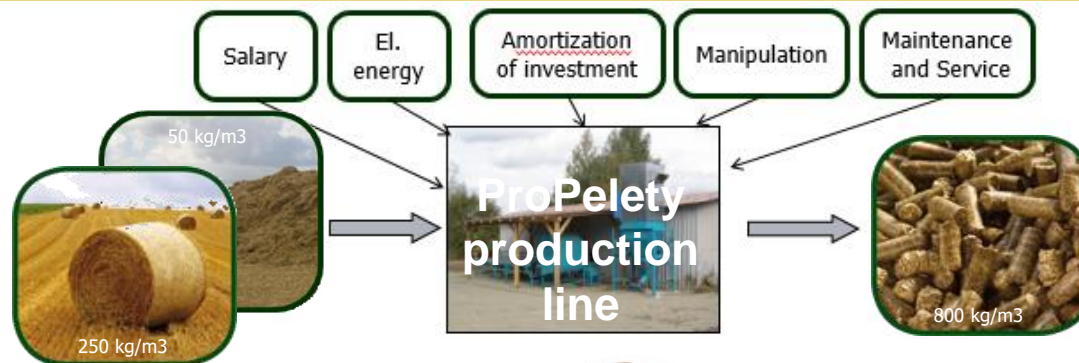
- Dryness

- **Composition of nutrients**

- The quality depending on the feed composition

- **Calorific value**

- Dryness of residual biomass



Quality of product:

- **Feeding**

- Dispensability
- Easy storing, handling

- **Bedding**

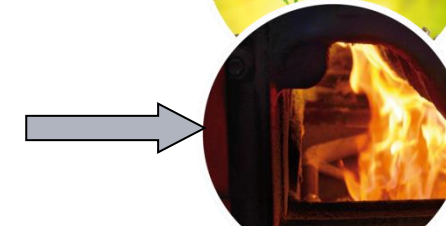
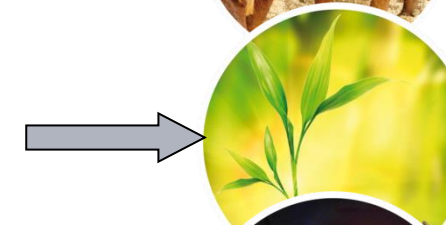
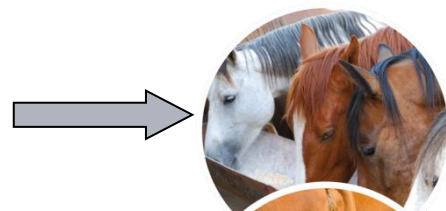
- High moisture absorption (4-5× compared to straw)
- Sterile - no germs

- **Fertilizer**

- natural nutrients
- gradual supplying into the soil

- **Fuel**

- The calorific value comparable with brown coal (14-17 MJ / kg)
- High efficiency of combustion in boilers used for pellets



ProPelety production line

Concept of local production

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- **Local production line** – designed for farmers as economical production with minimal transportation cost. The line is capable of handling straw within a radius of about 5-10 km in 1,5 shift
- **Performance-compact unit** - from input to output, balanced dimensions, coordinated performances of all the technological equipment
- **Automation control**, regulation, drives to diagnose
- **Using of existing agricultural mechanization handling**
- **Full employment for one person per shift**
- **Architectural inexpensive, appropriate to the existing infrastructure on farms** - occupies only 60 square meters, the low weight of all equipment, electrical supply power about 135/165/200/235 kW, its own electrical switchboard
- **Possibility of line changes** - by building layout
- **Possibility of line modification** - according to specific requirements of the user

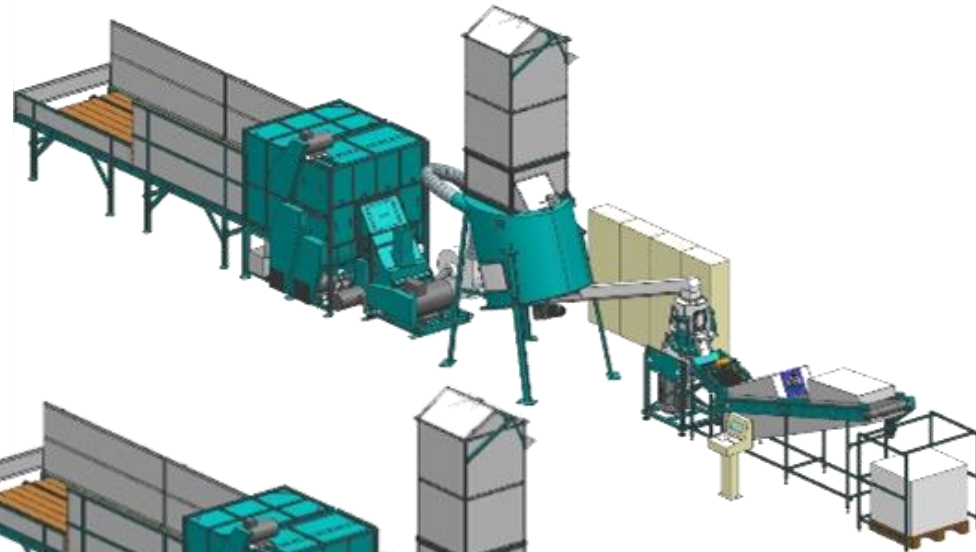
Motto: Local production, local consumption

ProPelety standard product portfolio

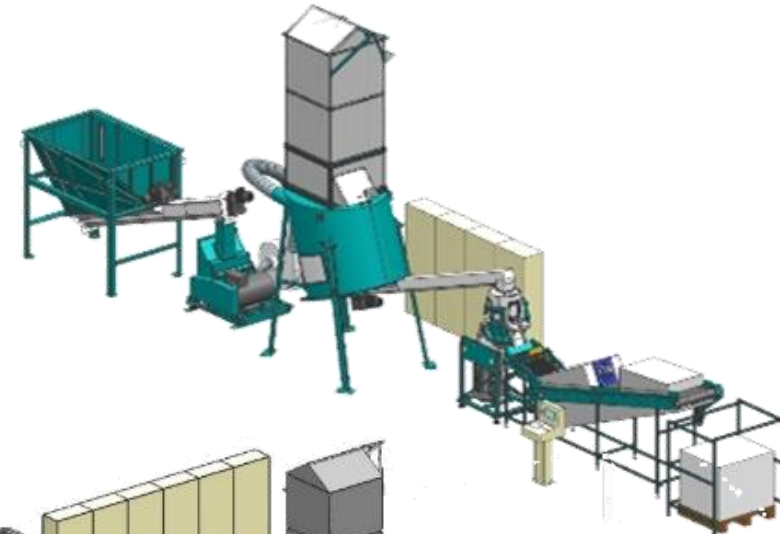
Production lines in variants Agro, Agro Plus, Wood, Wood Plus



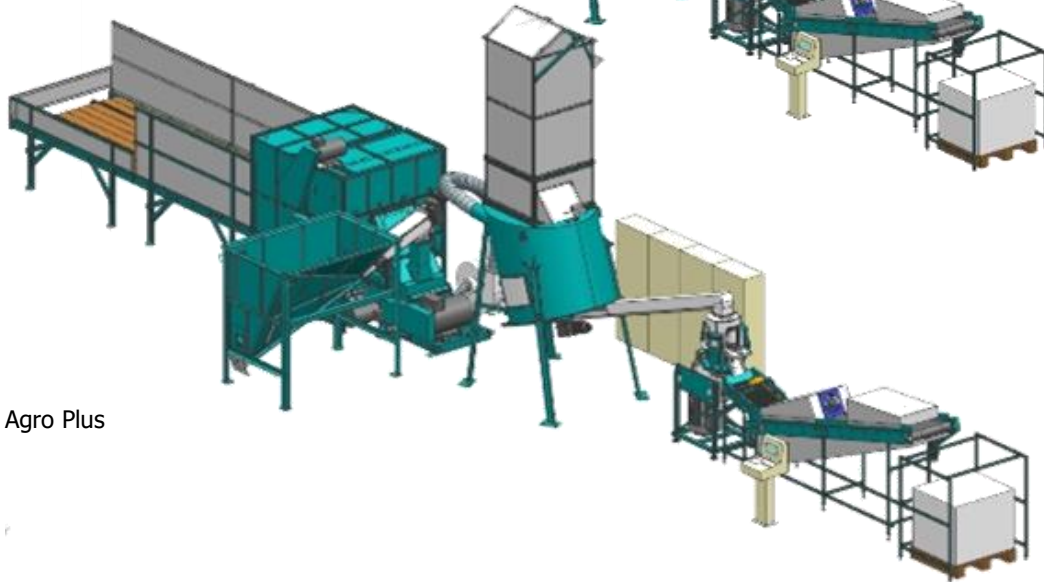
ProPelety Agro



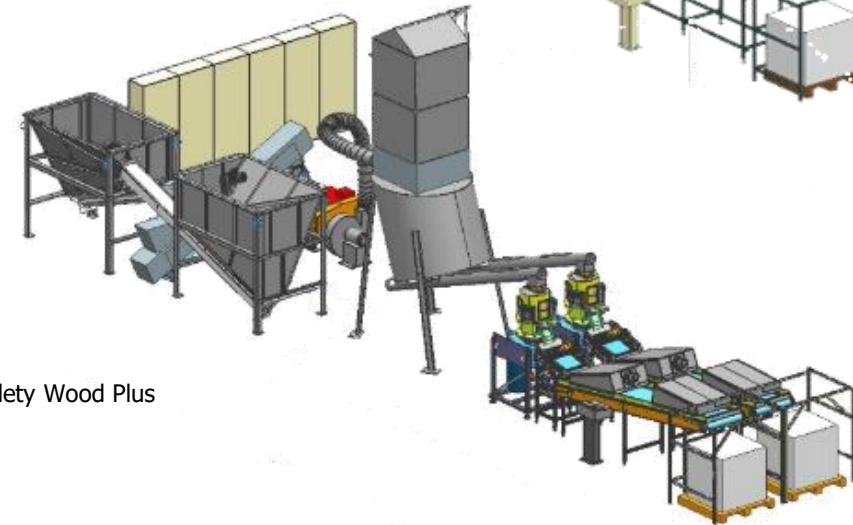
ProPelety Wood



ProPelety Agro Plus



ProPelety Wood Plus

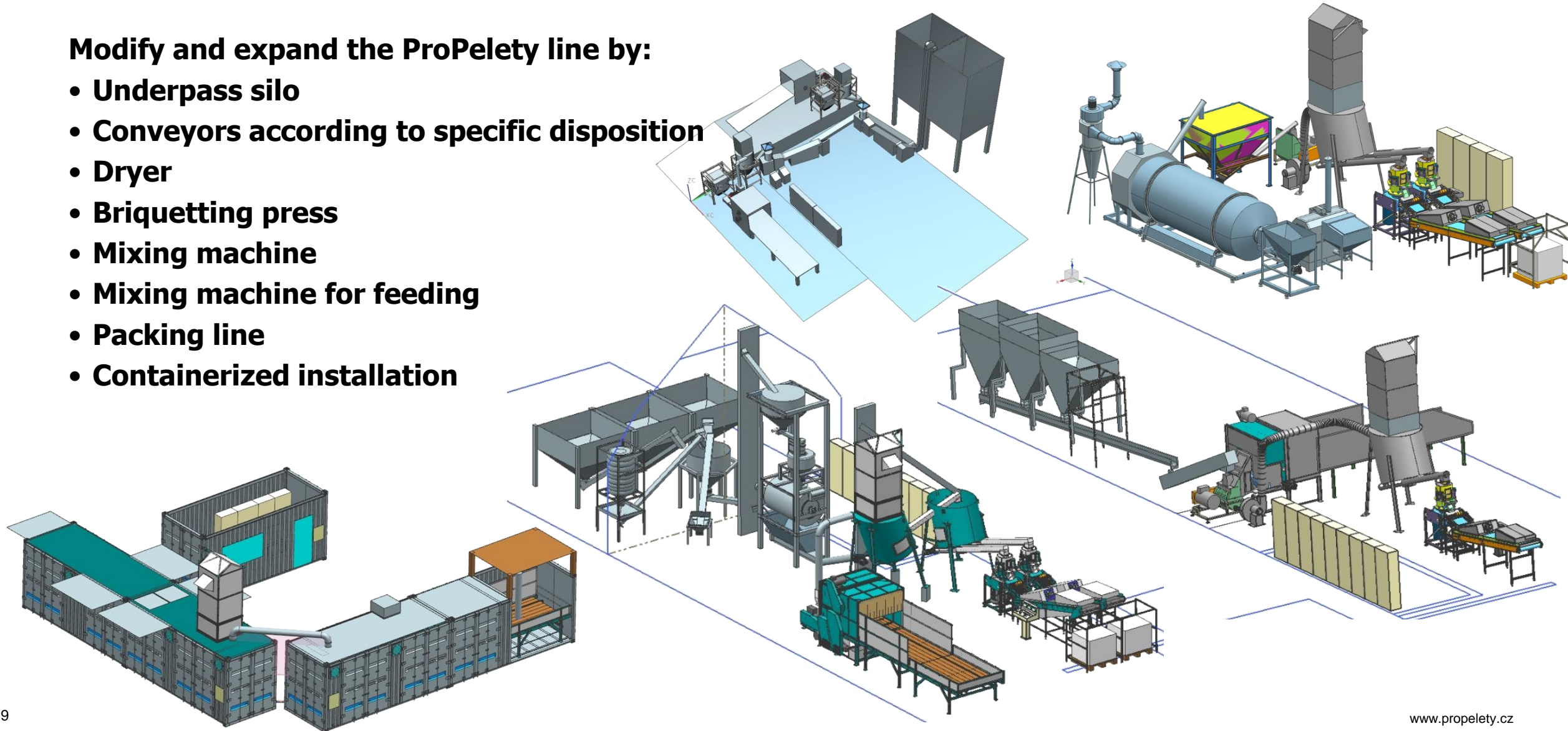




Possible modifications and extensions according to the specific needs and user's requirements

Modify and expand the ProPelety line by:

- Underpass silo
- Conveyors according to specific disposition
- Dryer
- Briquetting press
- Mixing machine
- Mixing machine for feeding
- Packing line
- Containerized installation



Current references



ProPelety Agro Plus Basic

ZEMAS a.s., Krucemburk, CZE

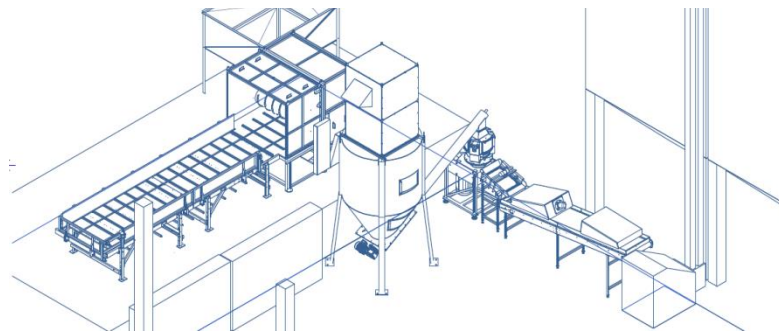


Agricultural company

- Plant production
 - wheat, canola, rye and oats, corn and annual fodder crops
 - permanent grassland (1700 ha)
- Animal production - cows, pigs, poultry
- Biogas station

Production of agro pellets

- Inputs: remnants of plant production
- Product: agropellets for heating and power plants
- Line type: ProPelety Basic Agro Plus
- Capacity 3000+ tonnes / year



Reference ProPelety Agro Plus Basic Statek Uhersko, CZE

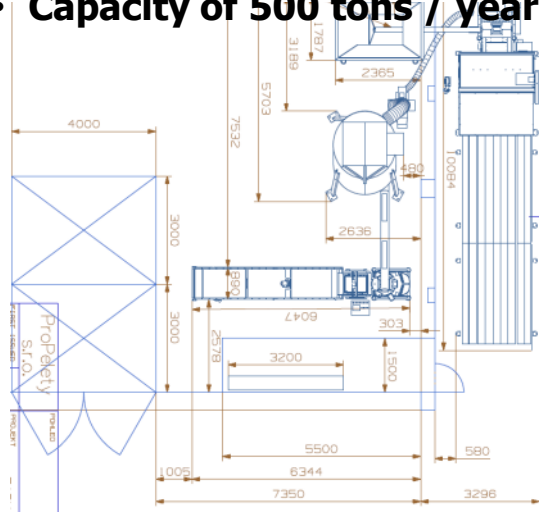


Family farm

- Long tradition of agricultural production
- Livestock farming - production of meat and milk
- Breeding of horses
- Bakery

Production of agro pellets

- Inputs: specifically grown plants, residual biomass
- Product:
 - Feeding (pellets from lucerna)
 - Bedding (pellets from hay)
 - Fuel (pellets from residual straw)
- Line type: ProPelety Basic Agro Plus
- Capacity of 500 tons / year



Reference ProPelety Agro Plus Power Briquettes S.C. OPERATIONAL AGRO SRL, Tulcea, ROM



Reference ProPelety Agro Plus Power EURO-TIM, Slobodnica, HRV



Reference ProPelety Agro Plus Basic Dikij Sad, Mykolaiv, UA



Technical administration and maintenance of buildings

- Cable TV and internet
- The central biomass boiler plant 1.4 MWt
- Boilers for households



Production of agro pellets

- Inputs: residual straw and reeds
- Product: agro pellets for central boiler house and households
- Line type: ProPelety Basic Agro Plus
- Capacity: 2000+ tonnes / year



Reference ProPelety Wood Plus Basic Duo H&H Jevíčko, CZE



Production of energy from renewable sources

- Wind power plants
- Cooperation with woodworking companies

Production of wood pellets:

- Inputs: sawdust from the production of wooden boards,
- Product: wood pellets (DIN A1+) for small customers and municipalities
- Line type: ProPelety Basic Wood Plus
- Capacity: 700+ tons / year



Focus for the future

Sludge and Waste in the testing phase



Pelletization test

Milled Solid Alternative Fuel from Municipality Waste + wood sawdust/shavings or agri waste



- Density of the input fraction 135 kg/m³
- Pellet density 407 kg/m³

08/2020

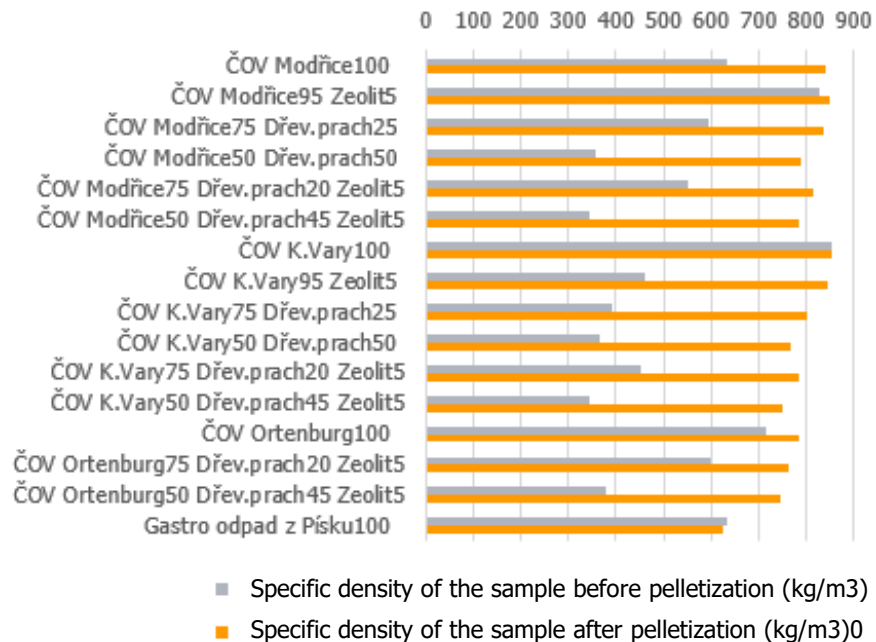
Pelletization test

Sludge from WWTP + additives



- Dry sludge from WWTP: Modřice, K.Vary, Ortenburg
- Additives: Wood dust, Zeolite

Effect of additive amount on pellet quality

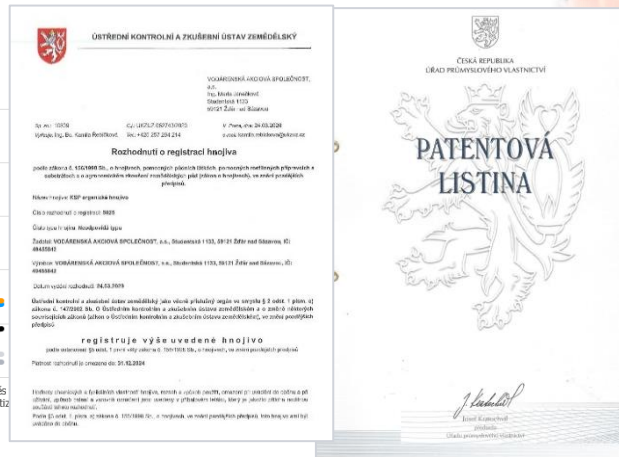
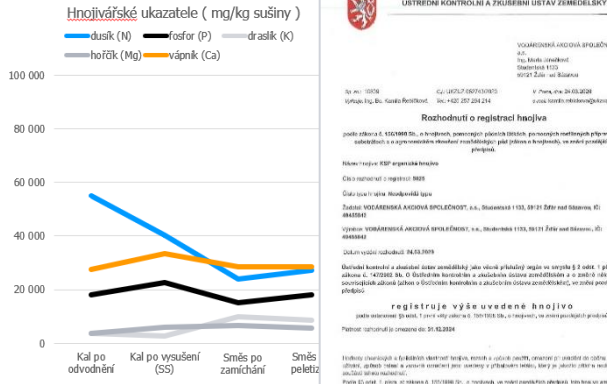
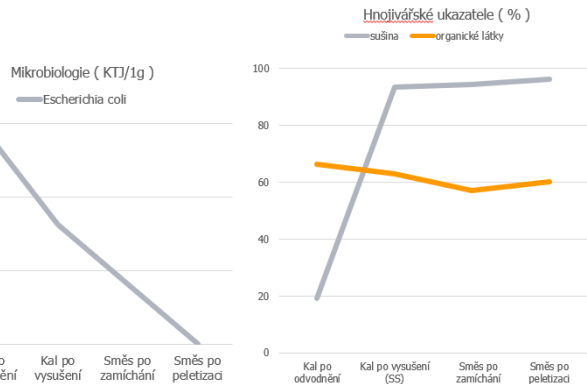


Development of KSP fertilizer = Sludge from WWTP + Straw + Ash from biomass

Production process approved by ÚKZUZ, registered patent, field tests

VUZT Praha v.v.i. + VAS a.s. + ProPelety Ltd., Czechia

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Pelletization test

Milled Solid Alternative Fuel from municipal waste



- Hard mixed Solid Alternative Fuel, crushed into a fraction of up to 3 cm, without metal particles
- Density of the input fraction approx. 140 - 150 kg/m³
- Pellet density approx. 380 - 430 kg/m³

05/2023





- **Pre-project consultancy, economic balance sheet of the production plan**
- **Design of a technological solution according to the customer's specific requirements and deployment in the chosen location**
- **Pelletization tests of specific raw materials on our own production line**
- **Ensuring production, delivery of production technology and its commissioning incl. operator training**
- **Consultation, warranty and post-warranty service**



Thank you for your attention

www.propelety.cz

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