

THERMOPOLYMERPELLET

NanoBioPolymer technology of granulated biofuel pellet production

Utilized Raw Materials:

- waste wood;
- agricultural wastes;
- paper manufacturing wastes;
- compost;
- peat;

Biofuels
20 – 23 kJ/kg
sp. weight 1,3 t/m³

The absence of drying in the technological process, reduces manufacturing costs by 30 - 40%.



Mass composition (in %) of ash, S, N in different types of biomass

Kind of biomass	Quality Score of biomass and fuel				
	Ash, %	S, %	N, %	kJ/kg biofuel	
				old	new
Sunflower	2,8	0,2	0,5	17,0	21,5
Buckwheat	1.3	0,1	0,7	16,4	20,0
Firewood	1,0	0,0	0,7	17,1	22,0
Peat	12,6	0,2	2,2	14,8	19,5
Rice	21,1	0,1	0,3	16,5	20,0
Rapeseed meal	4,8	0,9	0,6	15,0	20,0
Soy	3,5	0,2	0,6	16,0	20,5
Straw	5,3	0,2	0,4	14,7	19,5

Productivity

1000 kg/h

Electricity consumption

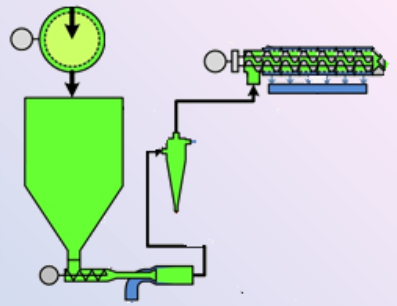
120 kW*h/t

TECHNOLOGICAL PROCESS

Cavitation-vortex cleaning of materials

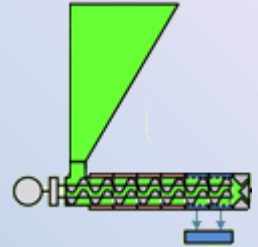
Hydrodynamic heating

- Mineral and metallic impurities' separation



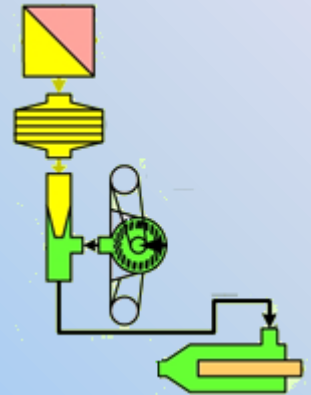
Water separation

- Mechanical water separation and pressing of biomass up to 12-15% of humidity;



Micro-dispersion of biomass

- Shear deformation
- Steam explosion



Changes of state of biomass

- Remaking biomass into viscous-flow (polymer) aggregate state

Extrusion

- Making the desired shape and density of product



Pellets production

- Remaking biomass into solid aggregate state and cooling

The quality of the obtained granules

Poured density	800-850 kg/m ³
Imaginary density	1300-1350 kg/m ³
The content of the fine fraction	≤0,2%
Mechanical durability	99,3%



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Our Offers

1. Supply of modular production line in 2x40 'ISO containers, with capacity of 1000 kg/h. Price: from \$550 to \$750 thousand USD, depending on the configuration and type of raw materials (wood, straw, peat, etc.)



2. For a broader introduction of a new technology of obtaining of the modified water-resistant pellets with the imaginary density 1.3-1.35 T / m³, with a calorific value of more than 20 kJ/kg, it is offered investing for production of final products of various kinds of raw materials.

The minimum investment amount \$ 3 million if own funds of the partners - 10% or the presence of a bank guarantees for the implementation of the business project.

Investment funds from 3 to \$ 30 million depending on the business project and not more than five years.





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PEAT



SUNFLOWER



HYDROLIZED LIGNIN



COMPOST



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