



FEED & BIOMASS  
**NAWROCKI**  
PELLETING TECHNOLOGY



NAWROCKI PELLETING TECHNOLOGY LTD

TURNING BIO-DIGESTATE INTO  
AN ADDED VALUE PRODUCT

**HD**  
Heavy Duty Type

ENGINEERED  
MANUFACTURED  
& ASSEMBLED  
100% IN  
EUROPEAN  
UNION



## ABOUT OUR COMPANY

Nawrocki Pelleting Technology Ltd (UK) is a daughter company of a Polish manufacturer -Nawrocki Pelleting Technology Poland. Our headquarter is located in UK , Buckinghamshire. We exclusively represent NPT Poland overseas, supporting our distribution partners and customers with full customer service and comprehensive advise, helping them developing most efficient pelleting solutions based on our product range.

Our mother company - Nawrocki Pelleting Technology Poland, which was founded in 1996 by Boleslaw Nawrocki, expert in pelleting technologies for more than 40 years, for more than 20 years, has been designing and delivering individual solutions for feed mills and pelleting industry. Our wide experience goes back to the 70s, when we designed first Polish pellet mill and other associated components.

### INNOVATIONS & EXPERIENCE IN PELLETING INDUSTRY

We deliver the whole range of functional subsystems like weighing, dozing, mixing, grinding, sterilising, conditioning, pelleting, crumbling, cooling, cleaning, packaging etc.

Our production plants work under automatic control system which incorporate latest technologies and software solutions

## ADD VALUE TO YOUR AD PLANT

**Nawrocki Pelleting Technology** delivers turnkey plants for digestate up to 10 - 12 tph. We supply full projects at a very attractive conditions and short delivery times. A pelletized digestate can bring a new stream of profits for your biogas plant.

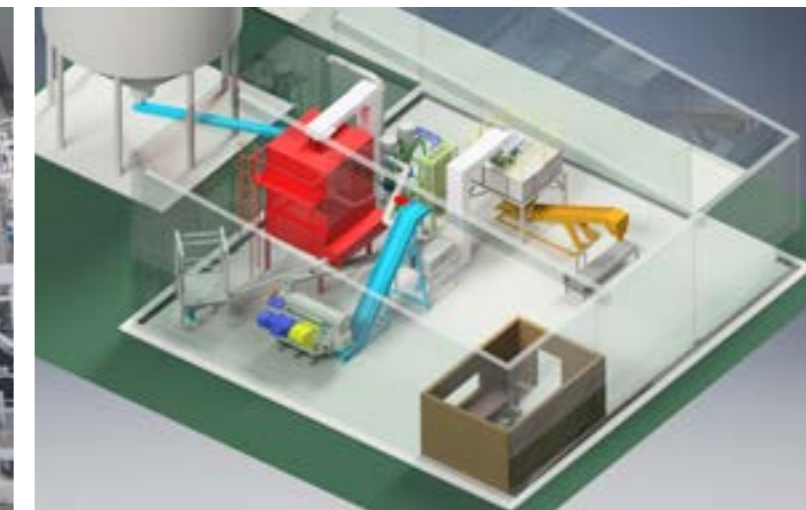
A regular 500kW biogas plant generates about 10 000 tons of digestate per year. In areas reach in such plants utilizing of digestate as a fertilizer is very hard to perform. Pelleting is the right solution, because pellets can be easily transported at low cost.

1000 tons of wet (70%) wet fibres after drying gives about 350 tons of a 15% moisture feedstock ready for pelleting. This process is worth further consideration, especially when environmental subsidies apply.

This new generation pellets can be used both as an ecological fuel or organic fertilizer.

## ADVANTAGES OF DIGESTATE PELLETS:

- easy to handle,
- low odour,
- low transport cost
- easy to doze on field in regular spreader,
- no significant changes to organic carbon amount
- high calorific value if used as biomass fuel
- significantly reduced storage space



# INCINERATION OF DIGESTATE'S PELLETS

**Our range of pellet mills offers very high pelleting performance, quality, and controllability.**

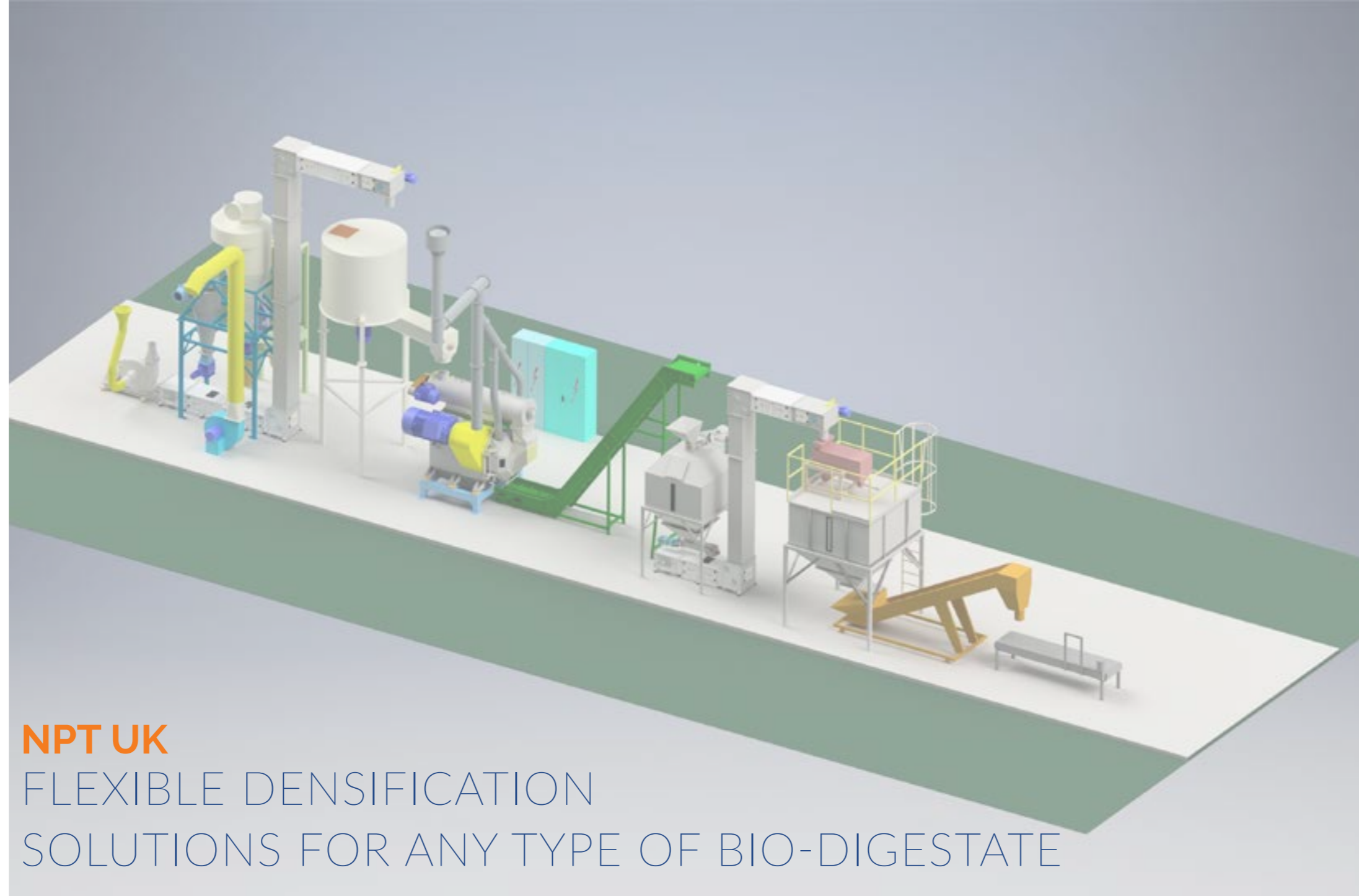
A common biogas plant with a power of 500 kW gives more than 10 000 t of digestate per year. Large volumes of produced digestate cannot be used as a fertiliser locally, as there are many restrictions connected with the application of digestate on the fields. One of these restrictions is the amount that can be applied per one square meter.

**Digestate pellets** next to wood pellets offer similar calorific value: 15 MJ/kg to 17 MJ/kg. The mechanical properties of the digestate lets densify it up to 700 kg/m<sup>3</sup> next to 640 kg/m<sup>3</sup> for wood pellets at similar durability of about 99%.

The place of storage of this type of material should be covered in order to avoid nutrient losses and pollution through ammonia and methane emissions.

Digestate can be transported to be used as a fertiliser in another place, but it has been proven that transport in its raw form is rather un-economical. When the distance is larger than 5-10 km, the costs of transport exceed the fertiliser's value. That is why other methods of utilisation are being searched for.

One of the promising alternatives is using the product as solid fuel pellets. In such a form, they can be transported and stored at a low cost.



**NPT UK**  
FLEXIBLE DENSIFICATION  
SOLUTIONS FOR ANY TYPE OF BIO-DIGESTATE

DIGESTATE PELLETS CAN BE USED AS A FUEL IN THE FOLLOWING PROCESSES:

- combustion/incineration,
- torrefaction,
- gasification,
- pyrolysis.

Using the dried digestate as solid fuel seems to be a good alternative. In order to reduce costs for transport and storage, digestate can be dried close to the biogas plant. The waste heat of the power plant can be used to dry digestate up to a dry matter content of around 80-90%. The bulky material can be pelletized, to produce a storable and transportable product with nearly consistent properties.

# DIGESTATE PELLETS A BIO-FERTILIZER OF THE FUTURE?

Digestate is considered to be a very valuable fertilising material. It is being used more and more often as a substitute for artificial fertilisers. There are many benefits resulting from the application of digestate but, on the other hand, many people are also against this method of utilisation. These opponents are afraid of the **bacteria and pathogens that are present in digestate**.

Another problem is the **odour coming from the fields** on which this “fertiliser” has been dispersed.

Also, spreading the digestate (in its pure form) on the fields requires a specialist equipment. Additionally, before using digestate as a fertilizer, associated transport costs should be considered.

Moreover, there are many other limitations that affect the application of digestate as a fertiliser in its raw state. The surplus of material after fermentation is quite difficult to manage, and storage of this material relates to many problems, e.g. it requires large amounts of space. Storage of the material releases odours in the neighbourhood.

**Nawrocki Pelleting Technology has found answers to all the above mentioned problems;**

NPT's digestate pelleting lines have been equipped with our patented sterilizers which allow for production of pathogen-free clean pellets.



Thanks of many years experience in the pelleting industry, implementation of high-end components and the newest technological solutions, NPT guarantees that pellets produced in our pelleting lines will be highly durable, dense, almost completely odourless and free of other contaminants as for example stones or glass.

## NPT DIGESTATE PELLETING LINES

NPT offers complete, turnkey pelleting solutions ranging from as low as 0.3t/h - miniPELLETER lines, with the miniPELLETER18 or 45 pellet press; up to 12t/h - consisting of our heavy

duty industrial grade presses GR2 series capable to work 24/7. For more information on our technology and proposed solutions, simply



**GET IN TOUCH WITH US AND  
TURN YOUR DIGESTATE INTO AN  
ADDED VALUE PRODUCT**

### OUR GUARANTEE:

- perfect adjustment of technology to requirements,
- complexity of production technology,
- full integration of machines and automation,
- long life of machines and appliances,
- no significant changes to organic carbon amount
- low maintenance costs,
- relatively low power consumption,



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