

## PlanET RePowering

Many biogas plants are not operating at their maximum capacity. This has an enormous impact on the feasibility of the plant.

The PlanET concept RePowering provides customers with focused technical and biological advice and solutions to optimise the plant performance and to increase the efficiency. Our service includes: Site visit to your plant, examination of site conditions, technical requirements and data, evaluation of a customer-focused concept, recommendation of technical and biological solutions. Unique additional service of PlanET: We are offering an efficiency assessment, also called gas yield ratio determination. For this purpose, samples from the digestate storage serve as the basis to find out whether the theoretical energy potential of your input material is being optimally used.

## Substrate Treatment at a Glance

Every raw material possesses a theoretical energy potential, regardless of the process technology of the digestion system. This potential is referred to as the "theoretical maximum gas yield".

For instance, the theoretical maximum of typical maize silage amounts to approx. 310 Nm<sup>3</sup> of biogas per ton of fresh matter (FM). According to the Association for Technology and Structures in Agriculture (KTBL), the yield rate of an average biogas plant is approximately 65%. PlanET biogas plants already achieve an average yield rate of 70%. There is a variety of process technology methods of treating substrates in order to increase the yield rate. PlanET offers two different disintegration technologies: The PlanET DesiUs, which works with ultrasonic rays, and the PlanET Gorator®, a mechanical technology, to enhance the efficiency of your digestion system.

Read more about Service and Maintenance on page 4.

### Customer Satisfaction Warranty

Our principle quality promise: Better performance, higher gas yield and increased return. Many biogas technology providers promise this, but what happens if the desired efficiency increase does not occur? Many plant operators are left alone to search for the causes. As we believe in our products' performance, we offer a unique satisfaction warranty for the PlanET Gorator® and PlanET DesiUs. What does this mean? We guarantee that you can return the PlanET Gorator® or PlanET DesiUs, if you are not satisfied with it.

When it comes to repowering, we are always

interested in the following questions:

How much substrate can the operator effectively save by using our products? What percentage increase in gas yield can be achieved by integrating the PlanET product into the digestion line? What can the PlanET product contribute to increasing the fermentation paths yield overall? With the PlanET Satisfaction Warranty you are invited to test the integration of our products into your plant, as we know you will be satisfied.



input was increased by approximately 30%.

Following the rather bad maize harvest last year, the feeding regime of the plant had to be changed, so maize silage had to be replaced by grass silage, which has a lower gas yield, hence required a bigger quantity to achieve the same gas production.

Taking both these factors into consideration, the throughput was increased by about 50% in comparison to the original design.

RePowering might also be interesting for customers who do not operate with a reliable and efficient feeding system for solid input material, like manure or energy crops. Does your solid charger satisfy you with low consumption, low effort and easy handling? If not, learn more about the unique PlanET Vario. The only solid charging system with a five-year warranty for conveying strings.

### First PlanET Gorator® sold in the UK

In order to increase the flow of their substrate, the operators of Great Ynys, the first realized PlanET plant in the UK, decided to add the mechanical micro crushing system.

There were 2 reasons for this decision. The plant which was originally designed for 190 kW electrical capacity is now operated on 250 kW. To achieve this, the



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**Projects in the UK: Successful commissioning of second AD plant**

With the commissioning of the second biogas plant in the UK in spring 2013, PlanET is giving a farmer the opportunity to keep his cattle, diversify his business and invest into the future of energy supply. The single stage biogas plant with its 499 kW<sub>el</sub> gas CHP unit is situated in Chard, Somerset, and is operated by a team

of three: Martin Burrough and neighbouring farmers Edward and Fred Eames.

The operators feed the plant with cattle and broiler manure, as well as maize and grass silage and will have an output of more than 4,000 MWh each year, sufficient to supply about 1,000 households with electrical

power. The biogas is produced in just one digester. “The single stage compact-concept is ideal for plants with high amounts of solid substrates, even with high proportions of farmyard manure”, says PlanET consultant Stephan Hoffmann, “contrary

to our ‘Slurry-To-Cash’ concept, which is based on more than 70% liquid input, i.e. slurry.” The biogas plant in Chard uses a 74m<sup>3</sup> PlanET Vario solids charging system in order to feed the digester. The PlanET Vario is a high standard technical solution, especially designed for the usage of a high percentage of grass and manure (up to 100% is possible!).

The operator of the third British PlanET biogas plant also decided to use the PlanET Vario. With 2,100t/a of cow manure, 1,000 t/a of broiler manure together with 6,200t/a of maize silage and 1,500 t/a of recirculated digestate, the plant produces approx. 4,344 m<sup>3</sup> of biogas each day. A 400kW<sub>el</sub> gas CHP unit Agenitor 212 is installed to provide electrical power and renewable heat.

Each year the farmer saves 73,000kWh by using the energy from their CHP unit and saves a further 60,000 £ by replacing fertilizer with high quality digestate.



**PlanET Service & Maintenance**

The commissioning of the second biogas plant in the UK reflects the dedication PlanET put into the market and to strengthen their position. As a result, an English subsidiary will be established by mid-year. The office will be based near Birmingham and help to build up a strong service team. “A good long-term performance is of utmost importance for the operators and us – with this next step we can easily fulfil our philosophy of planning, building and service” explains Stephan Hoffmann. The biological and technical service will be offered to all biogas plants – not only PlanET plants.

The close cooperation with the German CHP manufacturer 2G will be continued, so that every part of the plant is in the best of hands.



**Imprint**

**Publisher**

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