



## NAWARO® – Our Industrial Concept

We produce energy from biogas on an industrial scale. This opens up completely new opportunities and dimensions for this alternative mode of energy production. Three factors come together to make up this unique approach:

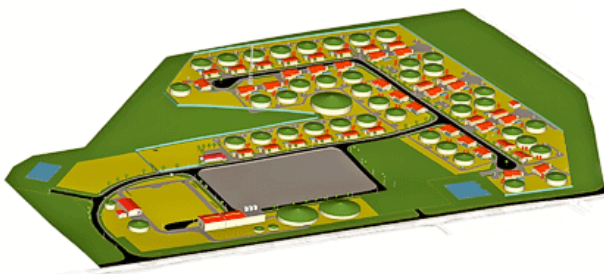
1. **Technology and know-how are linked throughout the entire value-added chain.** Our BioEnergy Parks with their state-of-the-art facilities bring together the entire process of energy production on the basis of biomass. From plant cultivation to supply and processing of the energy crops, from fermentation and combustion of biogas to feed-in of electricity and heat: our professional, on-site operator teams ensure a twenty-four hour, reliable production process utilizing the latest in technology.



Moreover, at each site, a fertilizer factory will be constructed, in which high-quality fertilizer is produced from byproducts resulting from biogas production, with the help of heat generated during electricity production. This infrastructure enables us to make optimal use of the energy and substrates available along the value-added chain and guarantees a resource-efficient process.

2. **All processes are standardized.** Our engineers optimize supply and production procedures in the BioEnergy Parks and define standards; this approach begins with regular advice for our contracted supply partners when it comes to selecting seeds and ends with the application of tested standard methods during fertilizer production. This ensures that our production of energy and fertilizer is as efficient, economical, and as environmentally friendly as possible.

### PLAN OF THE "KLARSEE" BIOENERGY PARK



3. **Economies of scale guarantee cost-effectiveness.** Investment costs for biogas facilities are high. The NAWARO® industrial concept optimizes the profitability of its BioEnergy Parks. Each park is made up of forty standardized 500 kilowatt units, which are operated and monitored by up to thirty employees per site.

Operating concepts that bring together several units to form an energy park are familiar from wind energy, where a number of wind power generators

use relevant infrastructure collectively to realize a more cost-effective operation. Furthermore, by concentrating units in BioEnergy Parks, we can ensure that technical malfunctions and regular maintenance of individual modules do not interrupt operations.

This approach optimizes energy yields and both the generation of electricity and heat as well as fertilizer production from fermentation byproducts can be realized profitably with this concept. NAWARO® BioEnergie AG is thus a reliable partner for power grid operators who distribute the electricity generated in our BioEnergy Parks.

## Our Partners

In planning, constructing, and operating its BioEnergy Parks, NAWARO® relies on technologically sound, well-tested technologies from partner companies. Our components for producing biogas and electricity are manufactured by EnviTec Biogas GmbH (fermentation) and GE Jenbacher GmbH (electricity generation). This means that our parks are equipped with optimal control engineering technology that safeguards clean and secure operations.

## Farm Units

Today, numerous small-sized farm units that generate energy from biomass are already in operation. These facilities are based on the same process used in the NAWARO® BioEnergy Parks; however, they are frequently unable to make optimal use of the potential of this energy form.

Moreover, according to relevant studies, operating a small farm unit is an economically attractive option for only about thirty percent of German farmers. Considerable investments are involved: purchasing and operating a single 500 kilowatt module entails initial costs of some 1.5 million €.



Thanks to the industrial concept of the NAWARO® BioEnergie AG, however, farmers who do not own such a unit can now participate in this growing market. As suppliers of energy plants, they can secure new economic perspectives for their farming enterprises that offer the advantage of long-term sales agreements.

We also cooperate with operators of small-scale biogas units, by offering them feed-in points for the electricity they generate. In principle, we can also arrange to collect the fermentation byproducts from farm biogas units and process them to yield our high-quality NAWARO® depot fertilizer.