ÖKOBIT


THE BIOGAS EXPERTS
intelligenz
responsibility
pioneering
Dialog
POWERLINE
regenerativ
innovativ
MEGALINE
Weitblick
schlüsselfertig
zukunftssicher
know how
ökologisch
ganzheitlich
Engagement
dialog
fortschrittlich
substratflexibel
Biomethan
INTERFACE
Engagement
intelligent
standortgerecht
innovativ
standortgerecht
up to date
ökologisch
Dialog
intelligent
intelligent Engagement
standortgerecht
Dialog
ganzheitlich
connect
zukunftssicher
Biogas
profitable
SMARTCONTROL
high tech
partnerschaftlich
intelligent
rentabel
pioneering
standortgerecht
innovativ
substratflexibel
ökologisch
zukunftssicher
schlüsselfertig
partnership
wartungsfreundlich
Messtechnik
PROZESSLEITSYSTEM
Weitblick
dialog
engagement
economical
funktional
plant construction
MEGALINE
ökologisch
wartungsfreundlich
intelligent
Dialog
fortschrittlich
Engagement
zukunftssicher
vernetzen
intelligent
Engagement
funktional
Biogasanlagen
innovativ
ökologisch
Weitblick
experience
ökologisch
rentabel
standortgerecht
ganzheitlich
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Dialog
Biogas
partnership
vernetzen
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profitable
Messtechnik
Messtechnik
wartungsfreundlich
Dialog
biogas plants
intelligent
SMARTCONTROL
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innovativ
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SYSTEM FLEX
Dialog
Engagement
BIOGAS
fortschrittlich
PROZESSLEITSYSTEM
dialog
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vernetzen
ökologisch
partnerschaftlich
standortgerecht
intelligent
dialog
BIOMETHAN
innovativ
funktional
know how
intelligent
ganzheitlich
SMARTCONTROL
Weitblick
Messtechnik
wartungsfreundlich
wartungsfreundlich
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ganzheitlich
ökologisch
innovativ
INTERFACE
fortschrittlich
biogas plants
Prozessleitsystem
zukunftssicher
intelligent

ÖKOBIT

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ENERGY WITH FUTURE.

MANAGING PARTNERS
ACHIM NOTTINGER AND CHRISTOPH SPURK

ÖKOBIT – THE BIOGAS EXPERTS

As a major manufacturer and planner of biogas plants with over 130 national and international projects, ÖKOBIT is one of the most sought-after full-service suppliers within the biogas industry. We develop and build technically intelligent, substrate-flexible biogas and biomethane plants which perfectly correspond to the specific local conditions of our clients.

ÖKOBIT is an owner-operated company with a solid capital base and an exceptionally wide range of services and expertise. Our team of experienced engineers, business experts, as well as energy and environmental engineers works with full commitment on the implementation of environmentally compatible biogas concepts operating on the highest level of economic efficiency.

ÖKOBIT relies on established and exceptionally flexible technology concepts and ensures their effective and safe implementation. As a general contractor, in addition to expert advice and profitability calculations, we take on all tasks from planning and approval to turnkey plant construction.

WHAT MAKES ÖKOBIT SPECIAL.

From development to operation: ÖKOBIT offers you all the services required for a biogas plant from a single source.

As enthusiastic engineers with business foresight, we use the best biogas technology available on the market. This technology is selected according to strict quality guidelines or specially designed and further developed in-house.

As yield-oriented business experts with technical expertise, we verify the economic viability of every project.

We actively seek a continuous exchange with our customers and operators and regularly conduct plant visits to take up and put into practice ideas and suggestions resulting from practical experience.

Our safety engineering exceeds industry standards. The safety-related acceptance of our biogas and biomethane plants is carried out during an independent inspection by an authorized expert.

ÖKOBIT is involved in research projects, associations and committees with the common aim of continuously developing industry standards further.

ÖKOBIT is fully committed to biogas and is made up by people dedicated to bioenergy who are always available for anyone interested in the subject.

FIVE GOOD REASONS FOR YOUR ENTRY INTO BIOGAS PRODUCTION.

Biogas is the all-rounder among the renewable energies: Simple, clean, forward-looking and cost-effective, biomass is suitable for the production of electricity, heat, power and even fuels. All the biogas plants currently operating in Germany already generate as much energy as two nuclear power plants.

01

Biogas production enables cost efficient, attractive utilization of existing resources. As a future energy farmer or investor, you will bolster your region and choose a way of energy production with excellent yield prospects.

02

The supply of electricity, heat and gas from renewable energies is gaining massively in importance considering the current political conditions to phase out nuclear power and thus offers excellent future perspectives.

03

Biogas is the most versatile and the only directly storable energy among the renewables. Its potential for utilization and commercialization is therefore outstanding: as electricity and heat for the regional supply, for feed-in to the public network and as biomethane.

04

Biomethane will become the alternative to imported natural gas. Biogas producers contribute to the decentralization of the energy supply and to the independence from international markets. As a result biogas will become increasingly attractive for energy suppliers, municipal utilities and local authorities.

05

The production of biogas is environmentally and climate friendly. Besides minimizing nitrous and greenhouse gases, the fermentation of solid and liquid manure also means active groundwater protection as mineral fertilizers are substituted. In addition to that, the energetic treatment of biomass is carbon-neutral.

THE DUAL 'CASH COW' FOR ENERGY FARMERS.

"With ÖKOBIT's biogas plant I gained more independence and greater profitability."

Norbert Dyckers, energy farmer from Korschenbroich

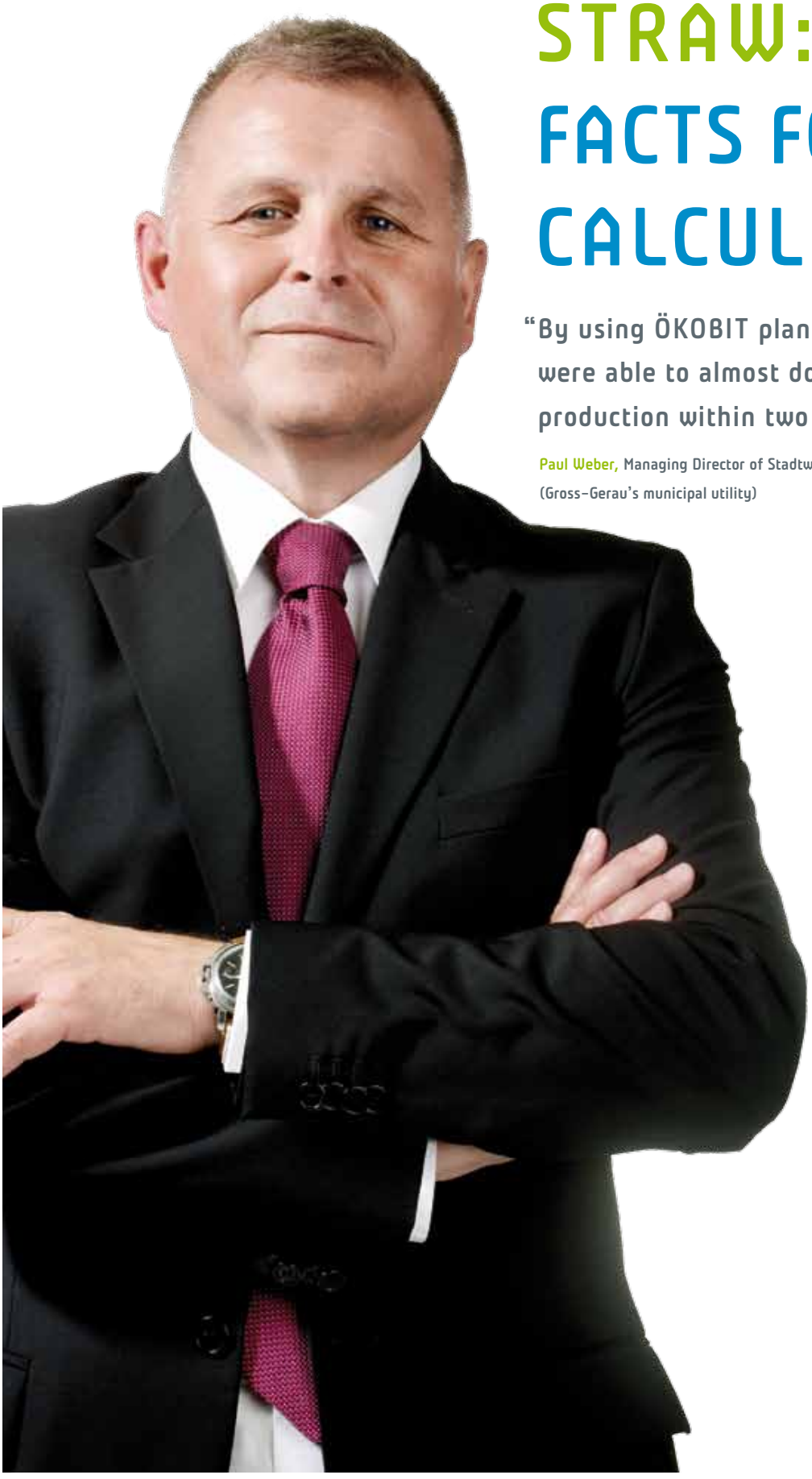
Advantages of biogas production for energy farmers:

- Long-term secure revenues
- Self-sufficiency with electricity and heat
- Increase in fertilization value and substitution of fertilizers
- Additional revenues from biogas production as an added pillar of your agricultural business

Become an energy farmer.

The investment for farmers in their own biogas production pays off in two ways: Firstly, it offers you an economically attractive source of income by generating electricity and heat from locally available resources. Secondly, you save ongoing operating costs due to the positive side-effects, such as the increase in fertilization value. Therefore, you render yourself more independent in terms of energy supply and economic earnings. A further advantage: The fermentation residue has excellent fertilizer properties for use in arable farming. The fermentation residue reduces odour emissions and contributes significantly to the acceptance of agricultural businesses.

ROI FROM STRAW: SOME FACTS FOR COOL CALCULATORS.



"By using ÖKOBIT plant technology we were able to almost double our electricity production within two years."

Paul Weber, Managing Director of Stadtwerke Gross-Gerau, Germany (Gross-Gerau's municipal utility)

Become an energy producer.

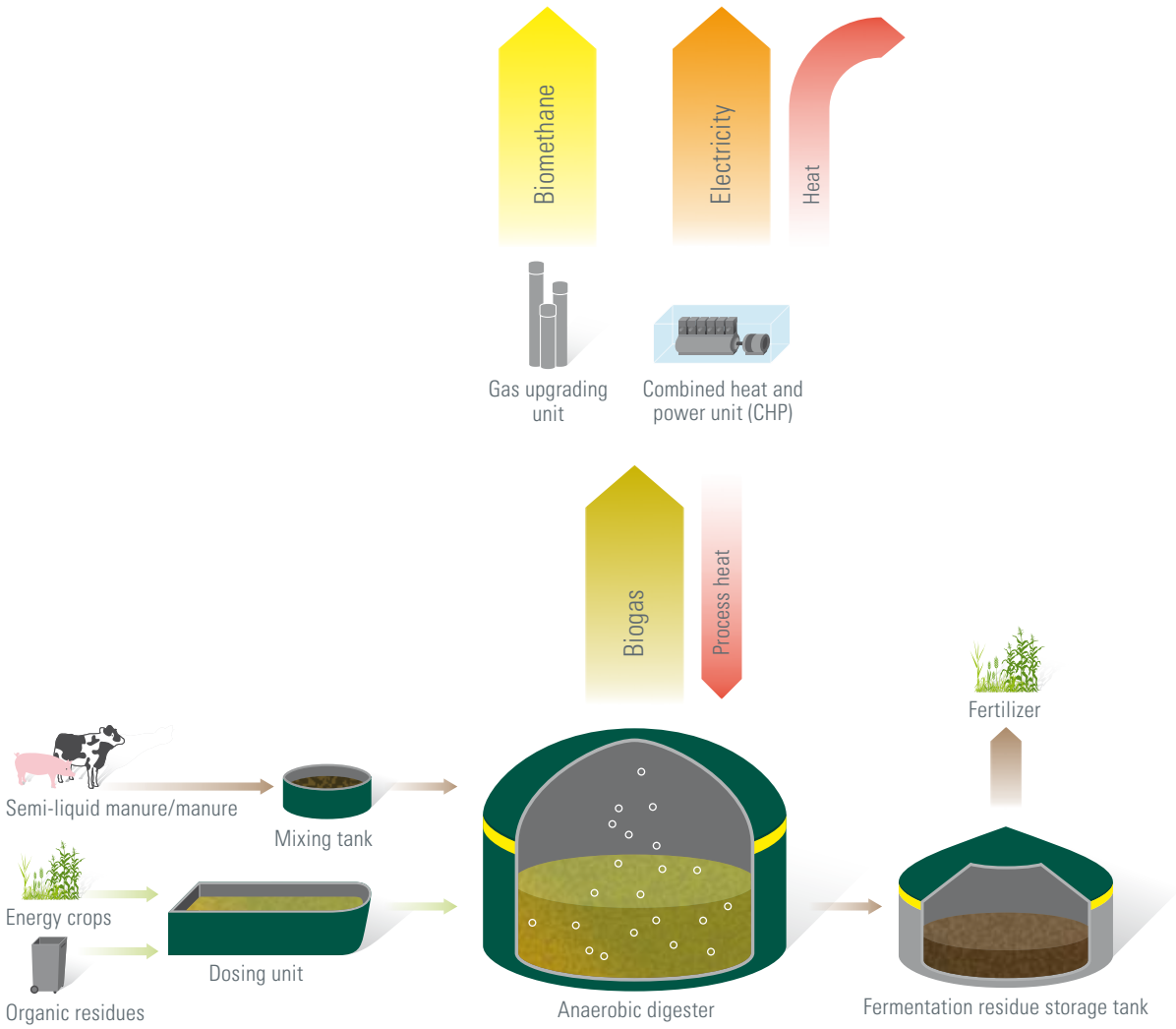
The course is set for biogas to play a leading role in the future energy supply. ÖKOBIT biogas and biomethane plants are highly attractive particularly for investors, energy producers, municipal grid operators and local authorities due to their short construction times, high plant availability and low energy requirement. Liberalization of the energy markets also opens up massive opportunities for long-term investments. As a result, biomethane is a key to reduce dependency on natural gas imports. According to estimates by the German trade association, the plan is to cut gas imports from Russia by 2020 by 50% and replace them with domestic production.

ÖKOBIT, THE ALL-ROUNDER: ELECTRICITY OR BIOMETHANE?

We offer plant operators all opportunities.

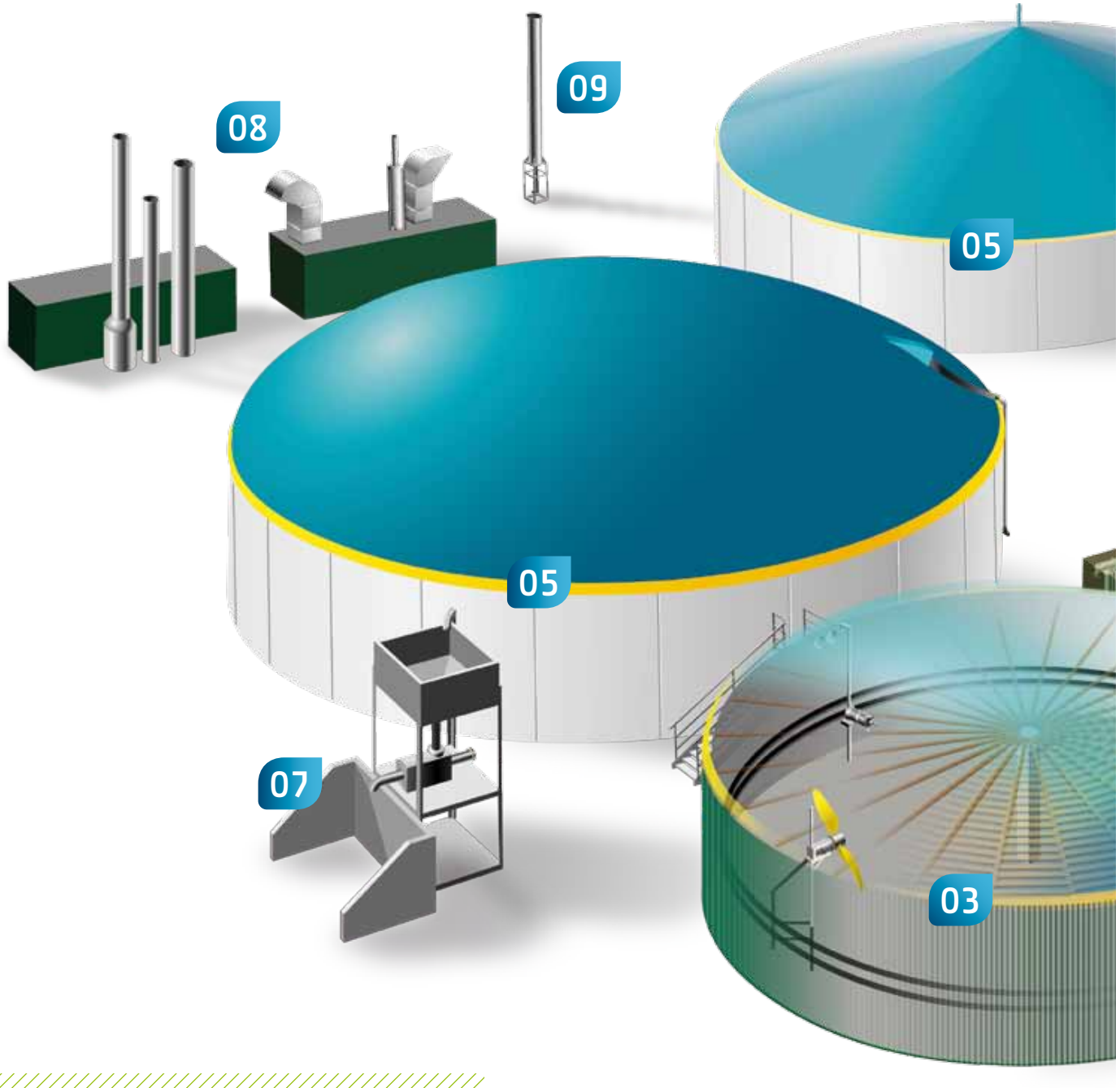
Biogas is the all-rounder among the renewable energies, ÖKOBIT is the all-rounder among biogas plant manufacturers. Simple, clean, forward-looking and cost-effective, biogas is suitable for the production of electricity, heat and biomethane: Since biogas has similar properties to natural gas, it can be fed into the natural gas network after appropriate upgrading to biomethane and can be used in various ways, even as fuel for cars, trucks and buses.

- ÖKOBIT offers plant operators all the established upgrading processes for converting biogas into electricity and for the production of biomethane.
- Operators benefit from our experience gained within a large number of projects using different upgrading concepts.
- ÖKOBIT provides professional advice on the most cost-effective biogas or biomethane plant concept, optimized for your individual local conditions.
- ÖKOBIT biogas plant systems enable high gas yields and a constantly high level of process stability.



FUNCTIONAL DIAGRAM OF AN ÖKOBIT BIOGAS PLANT

OUR MODULAR PLANT SYSTEMS

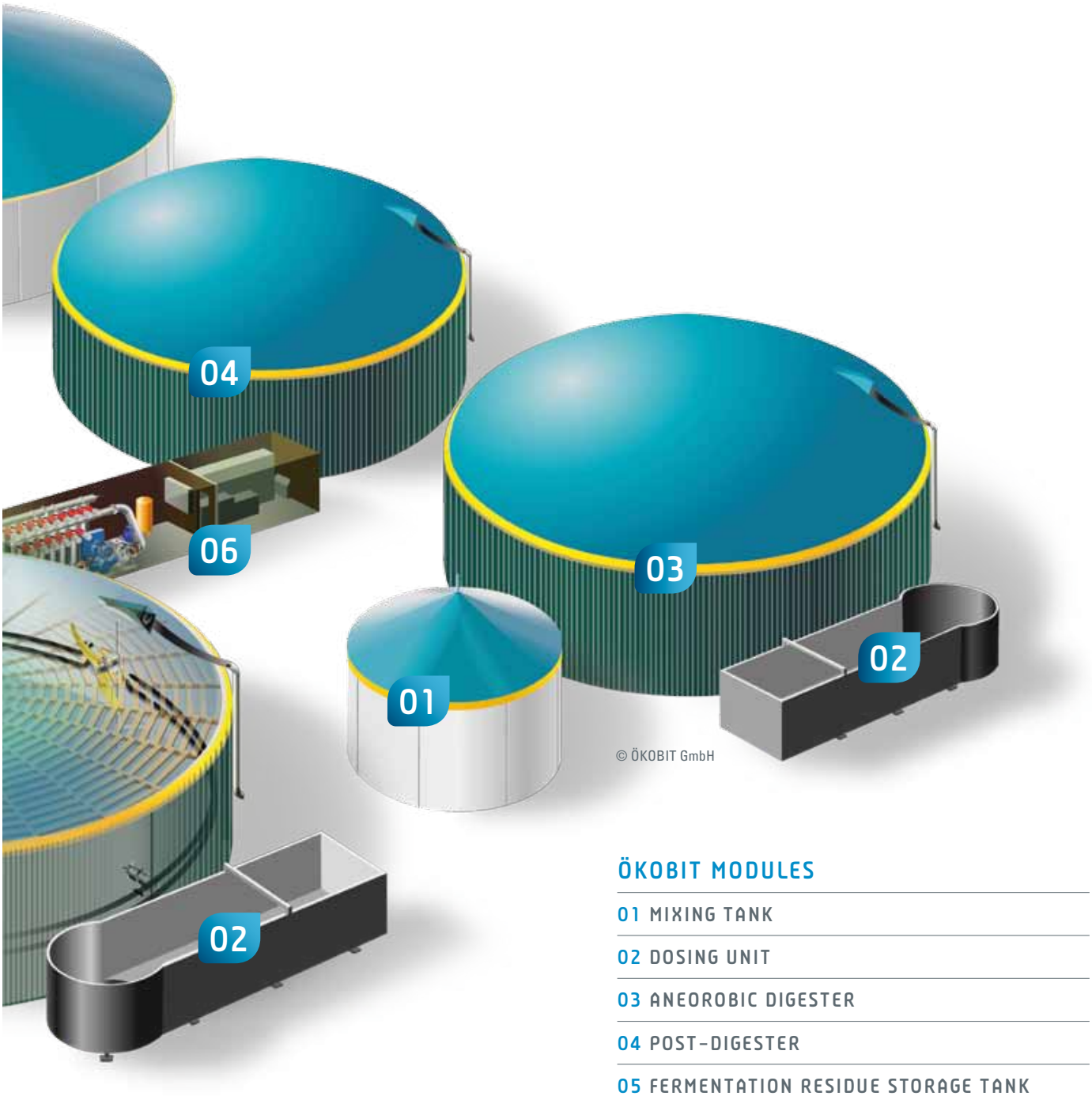


ÖKOBIT BIOGAS PLANT SYSTEMS:

- MEGALINE 600 kW TO 2 MW
- BIOMETHANE PLANTS 300 TO 2000 Nm³
- PILOT/RESEARCH PLANTS
- CUSTOMIZED PLANTS

Expandable and substrate-flexible.

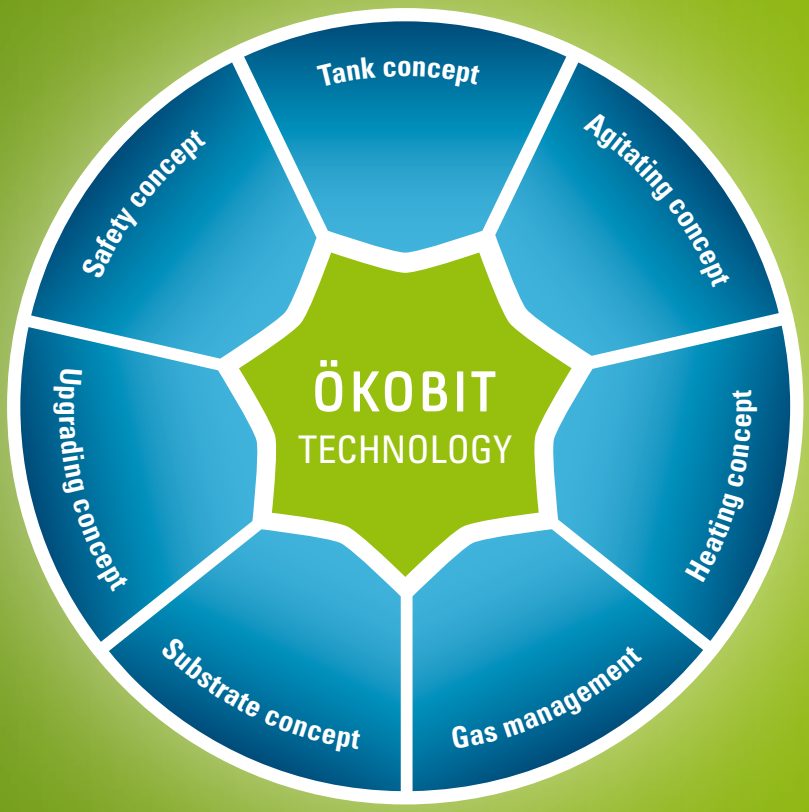
Every ÖKOBIT biogas or biomethane plant – regardless of size and substrate concept – consists of a modular fermentation line. We use perfectly matched, proven quality components that can be flexibly combined according to the project. The result is process-stable plants that can be extended or upgraded at any time. The high degree of prefabrication and easy to install system technology allows the plant to be constructed effectively, in short time at a maximum level of quality.



ÖKOBIT MODULES

01 MIXING TANK
02 DOSING UNIT
03 ANEOROBIC DIGESTER
04 POST-DIGESTER
05 FERMENTATION RESIDUE STORAGE TANK
06 PUMP CONTAINER
07 SEPARATOR
08 CHP/GAS UPGRADING
09 GAS FLARE

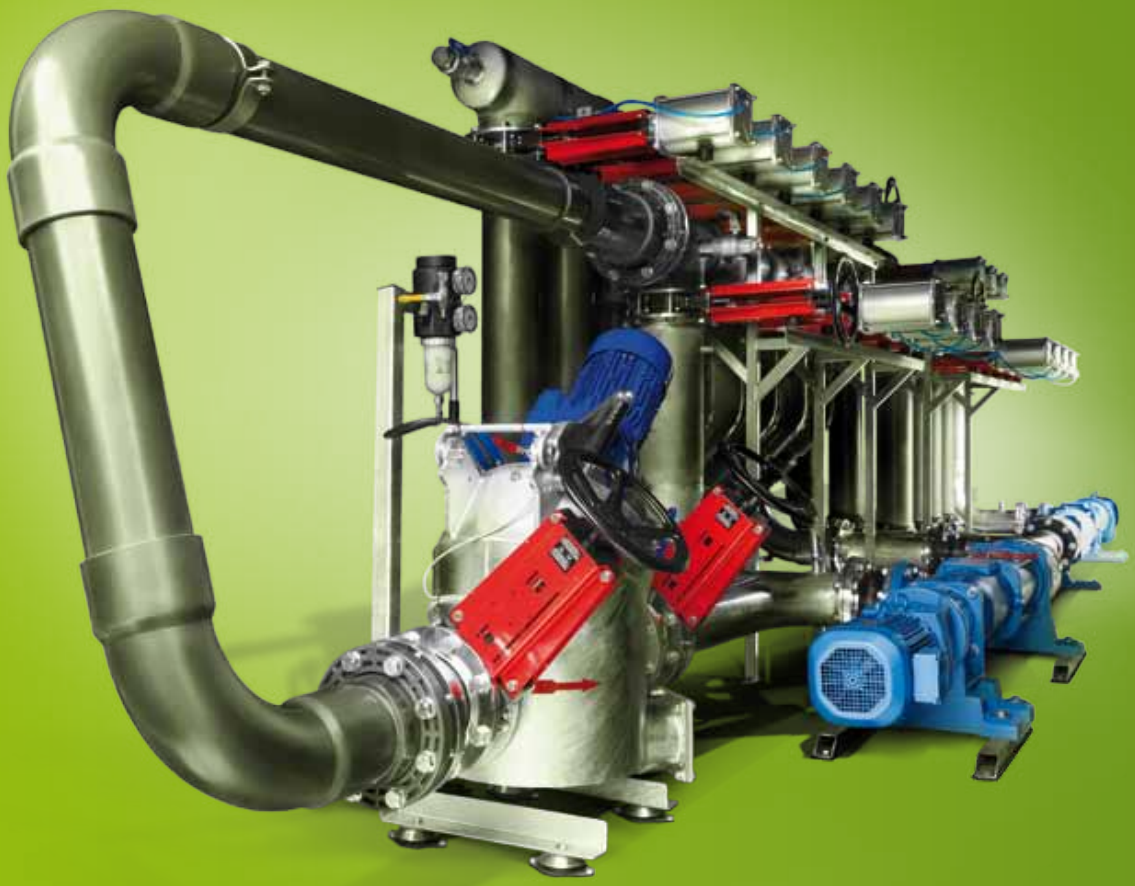
HIGH-TECH FOR YOUR BIOGAS PRODUCTION



ÖKOBIT plant technology: adapted to the site, high-quality and easy to maintain. ÖKOBIT offers substrate-flexible, scalable biogas plant technology for your biogas and biomethane production. Innovative engineering, field-tested concepts, precisely matched components and intelligent detailed solutions guarantee the quality and functionality of ÖKOBIT biogas plants and ensure the economic success of our clients.

OUR SUBSTRATE CONCEPT

Thanks to ÖKOBIT's pump technology, there is a free choice of substrate flows within the biogas plant, i.e. substrates can generally be pumped from any tank into any other optional tank, providing the operator with maximum flexibility and safe plant operation.



Compressed air distribution in the ÖKOBIT pump container

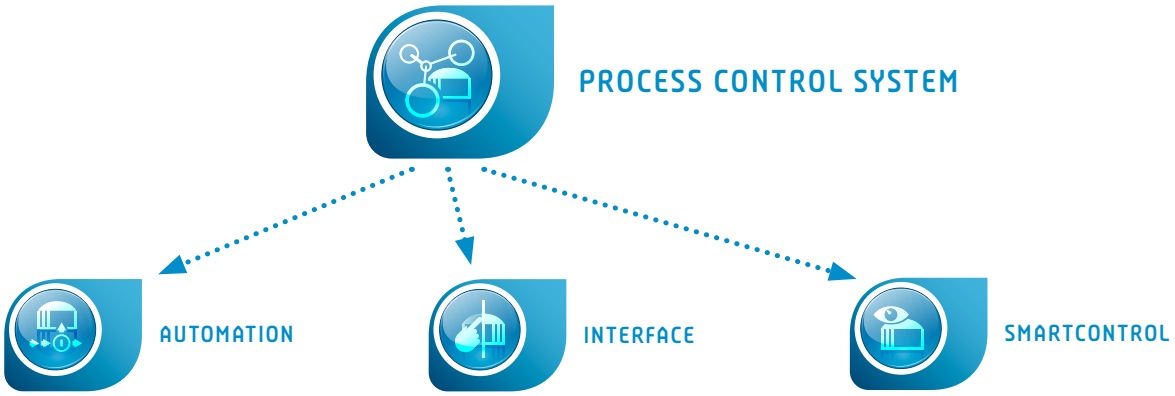
Pneumatically controlled stainless steel valves

"Biocut" for maximum substrate exposure

MADE BY ÖKOBIT: THE INTELLIGENT BIOGAS PLANT.

The ÖKOBIT PROCESS CONTROL SYSTEM (PCS): Logically structured and intuitive to use.

With our specially developed process control system, we provide you with practical support for optimising the efficiency of your biogas plant and reducing the internal power requirement in order to maximize profitability. Despite the complex demands on the automation and measurement technology of the biogas plant, the ÖKOBIT PROCESS CONTROL SYSTEM is intuitive and easy to operate.

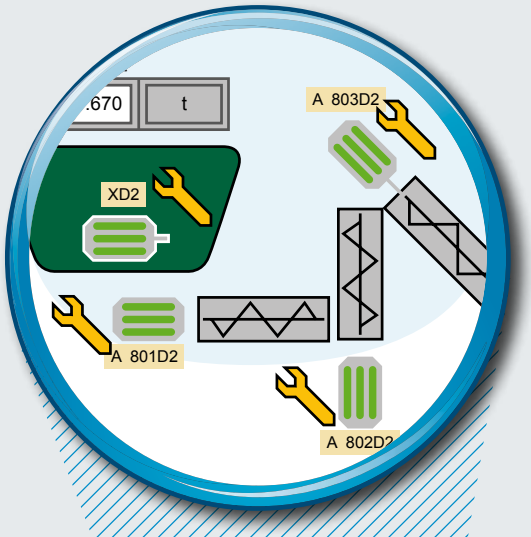


The top-level basic package:
The integrated ÖKOBIT load management ensures a very low simultaneity factor. In terms of biogas plant operation this means that as few consumers as possible (Agitators, pumps, dosing units) run at the same time and are actively cycled. If volume- and time-controlled processes coincide, ÖKOBIT's automatic load management cuts in and handles the required processes in a specified order of priority. This saves connection and provision costs and guarantees both the efficient and effective operation of the biogas plant.

Complex technology – easy to grasp:
The ÖKOBIT HMI (Human Machine Interface) – the intelligent enhancement of web-based process visualization for biogas plants – is clearly laid out and functional in design. The ÖKOBIT INTERFACE contains many helpful functions for efficient biogas system management. Clever solutions for operation, automation and monitoring of the biogas plant turn the control technology into an intelligent control centre.
Operation is fast and intuitive, whether on-site, in the office or via smart phone.

The intelligent biogas plant:
We at ÖKOBIT are convinced that complex technology, biological process relationships and the experience gained from a large number of biogas plants can be combined into adaptive intelligence. This is our understanding of a state-of-the-art, intelligent biogas plant.

SMARTCONTROL functions:
- Current tariff status in accordance with the Renewable Energy Sources Act 2012
- Reporting
- Maintenance management
- Electronic system management assistant



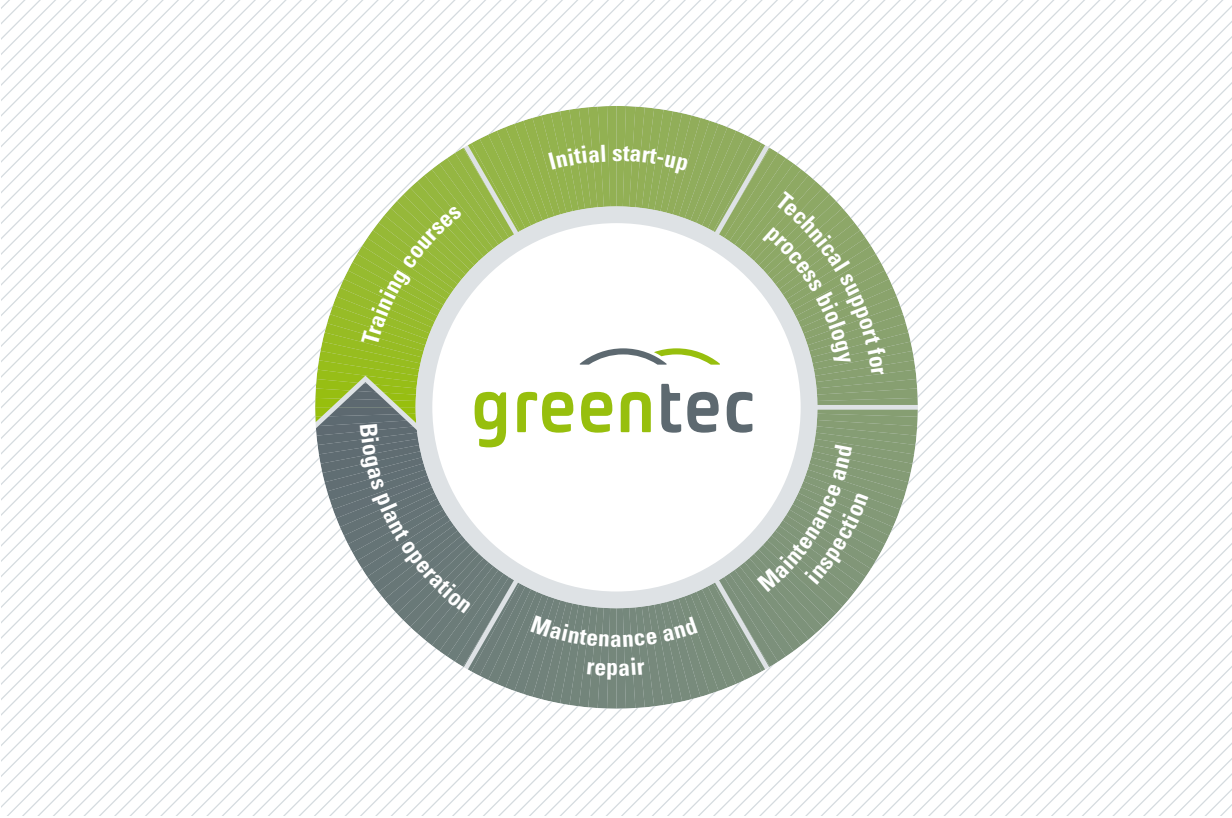
ÖKOBIT SMARTCONTROL

ÖKOBIT SMARTCONTROL, for example, automatically prepares maintenance schedules for the biogas plant based on the measured values recorded during the monitoring process and notifies operators and investors automatically by e-mail about any pending action.

The necessity for upcoming maintenance within a fixed tolerance period is indicated by means of an orange tool icon at the relevant unit on the P&ID. The tool turns red if maintenance periods are exceeded.

GREENTEC: OUR PARTNER FOR PERFECT PLANT MANAGEMENT.

Services from training and commissioning to complete plant operation.



Our partner company greentec-service GmbH with its modular concept offers operators of biogas and biomethane plants seamless and flexible support. With a full range of services around the clock, greentec's team of technicians responds quickly, flexibly and effectively. greentec's special service vehicles are equipped with all the most essential parts and components, enabling immediate deployment whenever and wherever they are needed. Another advantage: You can decide which services you wish to benefit from. greentec will agree with you on an individual, transparently calculated service budget for a long-term, collaborative business partnership.

BIOMETHANE PLANT

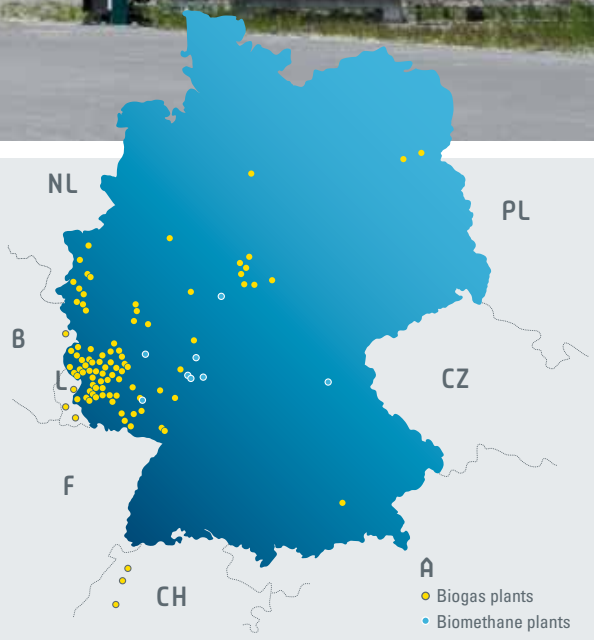
PROJECT: SEMD/HESSE

TECHNOLOGY	1 digester, 1 post-digester, 1 effluent storage tank, pump container, separation Upgrading concept: High-pressure water scrubbing
RATING	Plant rating: 400 Nm^3/h + 150 kW_{th} boiler Biogas production/year: 3.3 million Nm^3 Biomethane production/year: 1.7 million Nm^3 CO_2 saving/year: 4,750 t
SUBSTRATES	Renewable primary products
OPERATION	Construction period: 6 months, year of construction: 2010 Investor/operator: HEAG Südhessische Energie AG (HSE)

LOCATIONS OF ÖKOBIT BIOGAS AND BIOMETHANE PLANTS

PROJECT DESCRIPTION SEMD/HESSE

The use of state-of-the-art upgrading technology prevents approximately 4,750 t of CO_2 annually in Semd. The biomethane plant implemented in cooperation with energy supplier HSE is a pioneer in its field. The plant upgrades 400 Nm³ of raw gas per hour. That equates to a biogas production of 3.3 million Nm³ per year.



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