







Your expert planner for the production of biomethane from renewable and biogenous raw and waste materials

\rightarrow	International	Customers
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SMC Power Public Co. Ltd.	Thailand	Pöyry Environment GmbH	Finland
Helsinki Region Environmental Services	Finland	STRABAG AG, Environmental Technology	Guatemala
Sun Green	Iran	Biogas Fuel Cell, S.A.	Spain, Mexico, Zaragoza
BeS Engineering GmbH	Spain, Portugal, Greece	Alensys AG	New Zealand, South Africa
Alternative Energy Solutions SAS - AES Energies	Portugal, France	ALENSYS Alternative Energiesysteme AG	Moscow
EO.Schweißen & Montage GmbH	Turkey	CEMIG	Brazil
GreenOil Energy Sciences (Pvt) Ltd	India	energiewaechter GmbH	South Africa
Shaiyo Triple A Group	Thailand	AECOM	Thailand
UAC Public Company Ltd	Thailand	Papop Co.,LTD	Thailand
ACEITES, SA.	Colombia	Palmaceite, S.A.	Colombia
Non-traditional Environmental Waste Solutions S.A.	Costa Rica	ZukunftsAgentur Brandenburg GmbH	Macedonia
QUANG NGAI SUGAR JOINT STOCK COMPANY	Vietnam	M/s Al Rawabi Dairy Company	Saudi Arabia
PROTEC GmbH	Russia	Ministry of Energy, Thailand	Thailand
ZEGWAARD CONSULTING GMBH	Saudi Arabia	Hoeveld Eier Ko-op/Highveld Eggs Co-op	South Africa
GIZ GmbH	Vietnam	TropicalTech Company Limited	Thailand
Task Management Consulting GmbH	Ukraine	Pegaso GAOL	Thailand
Nemsis	Thailand	Sabio	South Africa
Annex Power Co. Limited	Thailand	AEV African Emerging Ventures	Botswana
Proton Power Inc.	U.S.A, Tennessee	BIO-FUELS KONTOR SA (Pty) Ltd.	South Africa



INDEPENDENT PROFESSIONALS FOR BIOGAS AND BIOMETHANE POWER PLANTS

OUR GLOBAL ENGINEERING SERVICES









ALENSYS Engineering GmbH Zum Wasserwerk 12 · D-15537 Erkner · Germany





Our Philosophy

For our customers, Alensys Engineering GmbH provides different fields of engineering and consultancy services for the realization of renewable energy projects. In particular, Alensys Engineering GmbH is specialized in Biogas Power Plants, Biomethane Power Plants (CNG substitute) and Waste to Energy Plants in small, medium und large scale, 500 kW up to 8000 kW. Based on our "on the point design" it is possible to convert this renewable energy into Biomethane as a CNG substitute, heat, steam and overheated steam, cold, electricity and certifiable fertilizer. Alensys Engineering GmbH closes the cycle between client's vision, sustainable and environmentally production process and a perfect designed project, in balance with nature.

For compiling an adequate offer for those kinds of services, it is suggested to discuss the most suitable allocation of work to be done by Alensys Engineering GmbH.

For a well balanced project and to reduce the costs for hard- and software, we see our clients as active partners. If they are interested to go deeper into the project, to introduce themselves as suppliers of services and hardware, e.g. to build the tanks, to do the piping and electrotechnique, they can with the help of Alensys Engineering GmbH. We support the implementation planning and specify all needed technical details. This converts a client to a partner, who grows with the project.



Target Groups

Our target groups are small, medium and large companies from private or public sector, local authorities and communities. A technical background is possible but not necessary. New projects can be born or existing Biogas Power Plants can be optimized in the procedure of Repowering.



Steps of Engineering

ALPHA-ENGINEERING

- · Consulting and feasibility studies
- Collect necessary data on plant size and input quantity/type
- Organize and evaluate biogas yield tests of specific inputs
- Development of an input model for calculation
- First calculation of plant size, based on the input model, considering best-/ average-/worst-case scenario
- · Price estimation and assistance for economical studies
- First 2D layout plan showing the necessary equipment with calculated dimensions
- Some 3D views of the layout for first presentation to the client
- A plant description with explanations and sample pictures for each plant
- List of all operating units with global specifications
- Simple block flow diagram (BFD) of the plant, incl. mass flow
- Simple time schedule of the different project phases
- Presentation and discussion of the results

BASIC-ENGINEERING

- Recalculation of the plant dimensions
- Redesign of layout plan according to discussion with customer
- First supplier evaluation and pick up
- Exact size specification of all equipment
- Ex-Zone plan and specification of dangerous zones
- Detailed process flow diagram (PFD) according to DIN standards
- Simple pipeline plan in 2D (and 3D as an option)
- Check of the price estimation and further assistance for economical studies
- · Review of plant description
- · Presentation and discussion of the results

DETAIL-ENGINEERING

Compilation of tendering documents

- Technical evaluation of supplier offers
- Participation in supplier negotiations
- Revise the Basic-Engineering documents according to the chosen suppliers
- Basic list for electrotechnique (valves, drives, measuring points)
- Power consumption list
- · Detailed drawings and coordination for equipment, e.g. pipe connection
- Contract management and assistance with procurement

ALENSYS Engineering GmbH

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IMPLEMENTATION-PLANNING

- · Drawing of details for piping and equipment assembly
- Adjustment of all equipment to the as-is situation at construction site
- Managing detailed solution finding and adjustment of equipment suppliers
- Assessment and management of subcontractors
- Setting up a detailed construction time schedule

CONSTRUCTION SUPERVISION AND AUDITS

Frequent presence and supervision on construction site

- Managing special audits and milestones
- · Report on accordance to time plan

Expert Planning for Technological Engineering

COMMISSIONING AND START UP

- "Cold" commissioning (hardware, connections and wiring check)
- Water commissioning (test operation with water, proof of tightness)
- "Hot" commissioning (start with actual and correct input material, heat up to operation temperature, establishing stable biology)

OPERATION CONSULTANCY

- Evaluation of process parameters during commercial operation and give recommendations
- · Weekly or monthly report on measures to maintain stable and optimized
- · Consultancy on half-year or yearly basis
- Performance analysis and analysis of the energy efficiency improvement mea sures and their implementation

TRAINING MEASURES

- Intended operational staff may be taught theoretically by Alensys Engineering GmbH
- Internship on a plant in Germany could also be organized
- · Training on the iob





Repowering Service

Renewable energy solutions have strong consequences and impacts:

- The Reduction of the current dependency on existing fossil energy like CNG, Oil, **Coal and Nuclear Power**
- · Diversification of the energy matrix and consumption of a country
- 100% substitute and replacement of Nuclear Power
- · Strong and independent position in case of political strategies
- Control of the prices and distribution in long terms
- Optimizing the electricity transmission systems by decentralized energy solutions
- Prevention of Power Cuts and stable electric grid
- · Implementation of energy efficiency measures and organic waste treatment
- Industrial standards can support the industry



Sustainable Development

"Make an existing Biogas Power Plant better" and use Alensys Engineering GmbH Service in different fields: Improvement of nutrient supply, optimization and upgrading of mixer-, pump-, feeding- and measurement-systems, replacement of the CHP and integration of new technologies like Biogas Upgrading Units and Input Pre-Treatment.



