

*The following projects listed are exemplarily for our activity and experience over the last 10 Years.*

## References of biogas projects

### **Bio-Energie Schwaben GmbH & Co. KG, Erkheim (continuously since 2009)**

- Consulting services and planning support for the optimization of an existing bio waste fermentation plant
- conversion to a two-stage biology
- optimization of the pulper discharge to improve performance
- advice for the improvement of sequence of operations
- revision of the operational documentation in order to bring them up to date
- carrying out of the periodic safety inspection according BetrSichV

### **Biogasfarm UG Hayn, Suedharz (2018 - )**

- Consulting and advice for plant operation and recovery after a breakdown, preparation and implementation of the rehabilitation concept, assistance with insurance settlement.
- Qualification of operator personnel according TRGS 529

### **BBM Betreibergesellschaft Biogas Plant Moeckern GmbH, Moeckern (2018)**

- Making a HACCP analysis and hygienic control plan.
- Carrying out of the functional inspection of hygienic device.

### **Berliner Stadtreinigungsbetriebe (2018)**

- Carrying out of the periodic safety inspection according §16 BetrSichV by an approved expert listed according §29b BImSchG.

### **MS Biogas GbR, Erkheim (2018)**

- Making a HACCP analysis and hygienic control plan.

### **Nissen Biogas GmbH, Nordhackstedt (2018)**

- Carrying out of the periodic safety inspection according §29a BImSchG and §16 BetrSichV, assistance for revision and updating of the plant documentation
- Qualification of operator personnel according TRGS 529

### **BioEnergie GmbH, Berching (2018)**

- Acceptance check before commissioning of a new CHP container, in accordance to §15 BetrSichV

### **LeKaBo, Kalenborn (2018)**

- Carrying out of the periodic safety inspection according §16 BetrSichV by an approved expert listed according §29b BImSchG.

### **Michael Blei GmbH & Co.KG, Food Waste Processing, Dasing (2018)**

- Carrying out of the periodic check for the hygienic installation according Art. 10 EC 1069/2009

#### **Waste Water Treatment Plant Bad Woerishofen (2018)**

- Carrying out of the periodic safety inspection of the sewage gas plant according §16 BetrSichV

#### **Biogas Plant Lubolz, Luebben (2018)**

- Carrying out of the periodic safety inspection according §16 BetrSichV
- Preparing of missing plant documentation

#### **Waste Water Treatment Plant Kaufering (2018)**

- Carrying out of the periodic safety inspection of the explosive areas on WWT plant and sewer in accordance of §16 BetrSichV.
- Assistance for revision of plant documentation.

#### **Spradau GmbH und Agrarbetriebs KG, Zehdenick (2018)**

- Updating of risk assessment and explosion protection documents.
- Updating of pipe and instruments diagrams (P&ID).
- Carrying out of the periodic safety inspection according §16 BetrSichV

#### **Biogas Plant LPVG Muecheln, (2018)**

- Carrying out of the periodic safety inspection according §16 BetrSichV

#### **Agricultural Center (LAZBW), Aulendorf (2018)**

- Updating of risk assessment and explosion protection documents.
- Carrying out of the periodic safety inspection according §16 BetrSichV

#### **Biogas Plant Ketelsby, Boren (2018)**

- Carrying out of the periodic safety inspection according §16 BetrSichV by an approved expert listed according §29b BImSchG.

#### **Irlbacher Biogas GmbH, Irlbach (2018)**

- Carrying out of the periodic safety inspection according §16 BetrSichV

#### **Abfallwirtschaft Rems-Murr AöR, Backnang/Waiblingen (2018)**

- Carrying out of the periodic safety inspection of the bio-waste processing plant according §16 BetrSichV

#### **Biogas Plant LEKABO Leenen, Kalenborn (2018)**

- Carrying out of the periodic safety inspection according §16 BetrSichV by an approved expert listed according §29b BImSchG.

#### **VE Energie GbR, Beesten (2018)**

- Acceptance check before commissioning the biogas plant, in accordance to §29a BImSchG and §15 BetrSichV

- **Waste Water Treatment Plant Landsberg a.L. (2018)**

- Acceptance check before commissioning of a new sewage gas compressor, according to §15 BetrSichV

- **BENAS Biogas Plant GmbH, Vorwerk (2017/18)**

- Expertize for safety at hazardous incidents by an approved expert according §29a BImSchG.
- Carrying out of the periodic safety inspection according to §29a BImSchG and §16 BetrSichV.

- **Biogas Plant Roder, Behren-Luebchin (2017/18)**

- Carrying out of the periodic safety inspection according §16 BetrSichV.
- Qualification of operator personnel according TRGS 529.

- **Hofgut Holland KG, Ochsenhausen (2017)**

- Carrying out of the periodic safety inspection according §16 BetrSichV.

- **WiKa Biogas, Westendorf (2017)**

- Expertize for safety at hazardous incidents by an approved expert according §29a BImSchG.

- **RMD Rhein-Main Deponienachsorge GmbH, Flörsheim (2017/18)**

- Consulting for update and completion of plant documentation, risk assessment and explosion protection documents.

- **Waste Water Treatment Plant Freising (2017)**

- Carrying out of the periodic safety inspection of the sewage gas plant according §16 BetrSichV

- **Michael Blei GmbH & Co.KG, Food Waste Processing, Dasing (2017)**

- Carrying out of the periodic check for the hygienic installation according Art. 10 EC 1069/2009

- **Bioenergiedorf, Jühnde (2017)**

- Consulting and concept development for expanding and optimization of the biogas plant in order for flexible operation.

- **Biogas Plant Eckertz, Lauperath (2017)**

- Preparing of the risk assessment and explosion protection documents for two biogas plants.
- Carrying out of the periodic safety inspection according §16 BetrSichV on two biogas plants.

- **Biogas Plant Berthelsdorf, Herrnhut/Berthelsdorf (2016/17)**

- Updating of the risk assessment and explosion protection documents.
- Carrying out of the periodic safety inspection according §16 BetrSichV by an approved expert listed according §29b BImSchG.

- **Schwaelmer Biogas GmbH, Willingshausen (2016)**

- Consulting for update and completion of plant documentation, risk assessment and explosion protection documents.

**Biogas Plant Hueer, Gersten (2016)**

- Acceptance check before commissioning according to §15 BetrSichV and periodic safety inspection according §16 BetrSichV by an approved expert according §29a BImSchG.

**Aviretta GmbH (Papier Mill), Ettringen (2016 – up to now)**

- Survey of the biogas emergency flare with failure analysis. Check of all modifications in view of explosion protection and assessment of conformity to applicable ordinances and technical rules.
- Acceptance check before commissioning of modified parts according §15 BetrSichV by an approved expert listed according §29b BImSchG
- Consulting for safe process and optimization of the anaerobic waste water pre-treatment plant.

**Waste Water Treatment Plant Unterfoehring (2016)**

- Carrying out of the periodic safety inspection of the sewage gas plant according §16 BetrSichV

**BBM Betreibergesellschaft Biogas Plant Moeckern GmbH, Moeckern (2016)**

- Carrying out of the periodic safety inspection according §16 BetrSichV
- Update and completion of plant documentation.

**Biogas plant Vandiecken & Altmann, Wallerdorf (2016)**

- Carrying out of the periodic safety inspection according §16 BetrSichV

**Tirolpack GmbH (cheese dairy co-operative), Fuegen, Austria (2016)**

- Feasibility study and concept development for a biogas plant processing the whey of three dairy partners, including the energy concept for energy self-supply of the factory but also processing the effluent.

**Biogas plant Dahlhaus, Breckerfeld (2016)**

- Carrying out of the periodic safety inspection according §16 BetrSichV
- Update and completion of plant documentation.

**n.n., NAWARO (renewable resources) Biogas plants, Saxony-Anhalt and Brandenburg (2016)**

- Technical expertise and due diligence of 10 Biogas plants

**Luedertaler Bioenergie, Grossenlueder (2016)**

- Carrying out of the periodic safety inspection according §16 BetrSichV

**Waste Water Treatment Plant, Landsberg a.L. (2016)**

- Carrying out of the periodic safety inspection of the sewage gas installation according §16 BetrSichV

**Biogas plant Hueer, Gersten (2016)**

- Acceptance check before putting into service according § 29 BImSchG

**Kloh GmbH, Food Waste Processing, Eichenried (2016)**

- Carrying out of the periodic check for the hygienic installation according Art. 10 EC 1069/2009

**Waste Water Treatment Plant, Unterfoehring (2016)**

- Carrying out of the periodic safety inspection of the sewage gas installation according §16 BetrSichV

**Aviretta GmbH (paper mill), Ettringen (2016)**

- Acceptance check of a starch silo before putting into service according §15 BetrSichV

**Michael Blei GmbH & Co.KG Food Waste Processing, Dasing (2016)**

- Carrying out of the periodic check for the hygienic installation according Art. 10 EC 1069/2009

**Bioenergy Plant Moesle, Aichstetten (2015/16)**

- Carrying out of the periodic safety inspection according § 29a BImSchG and §16 BetrSichV.

**Nissen Biogas GmbH, Nordhackstedt (2015/16)**

- Development and calculation of the improvement of existing biogas plant by implementation of hydrolysis step, for increasing output of more than 20 %.

**RMB Rhein-Main Deponie GmbH, Floersheim (2015/16)**

- Carrying out of the periodic safety inspection according § 29a BImSchG and §16 BetrSichV
- Consulting services, update of plant documentation

**Bioenergy Poehl e.K. Poehl near Plauen (2015)**

- Carrying out of the periodic safety inspection according §16 BetrSichV

**Spradau GmbH und Agrarbetriebs KG, Zehdenick (2015)**

- Acceptance inspection of plant modifications according §15 BetrSichV

**Biogas Plant LPVG Muecheln (2015)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Waste Water Treatment Plant Bad Woerishofen (2015)**

- Carrying out of the periodic safety inspection of the sewage gas installation according §15 BetrSichV

**Kloh GmbH, Food Waste Processing, Eichenried (2015)**

- Carrying out of the periodic check for the hygienic installation according Art. 10 EC 1069/2009

**AWG Rems-Murr-Kreis mbH, Backnang (2015)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Michael Blei GmbH & Co.KG Food Waste Processing, Dasing (2015)**

- Carrying out of the periodic check for the hygienic installation according Art. 10 EC 1069/2009

**Powerfarm Bioenergy GmbH, Tunningen (2015)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Biogas Plant Lubolz, Luebben (2015)**

- Carrying out of the periodic safety inspection according §15 BetrSichV
- Creation of missing plant documentation

**Spradau GmbH und Agrarbetriebs KG, Zehdenick (2015)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Hofgut Holland KG, Ochsenhausen (2014/15)**

- Carrying out of the periodic safety inspection according §15 BetrSichV
- Creation of missing plant documentation

**Bertele Biogas GbR, Sulzberg (2014)**

- Consulting services and analyzing of an RRM plant for its vulnerabilities, conception and action plan for facility optimization with hydrolysis.
- Design of a bio filter for cleaning waste air

**Dahlhoff Feinkost, Odelzhausen (2014)**

- Feasibility study and concept development for a bio-waste fermentation plant processing the organic production residuals, including the energy concept for energy self-supply of the factory.

**Doosan Lentjes GmbH, Ratingen (2014)**

- Basic research and concept development for waste sorting utility for a waste recycling project in Kuala Lumpur, Malaysia.

**Irlbacher Biogas GmbH, Irlbach (2014)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Nissen Biogas GmbH, Nordhackstedt (2014)**

- Consulting services and analyzing of an RRM plant for its vulnerabilities, conception and action plan for facility optimization
- Development and calculation of a plant concept for digestion of whey and other dairy waste products.

**Bio-Energy Gera/AgA, Gera (2014 up to now)**

- Consulting services and analyzing of an RRM plant for its vulnerabilities, conception and action plan for facility optimization
- Planning and implementation of an hydrolysis-step to increase the performance of the biogas plant
- Continuous consulting services for the biologic process but also plant operation.

**BBM Betreibergesellschaft Biogas Plant Moeckern GmbH, Moeckern (2014)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Emirates Environmental Solutions Mualaja Holding, Dubai (2014)**

- Consulting services for conception design of digestion plant for organic market waste.

**Bio-Energy Huenxe GmbH, Dorsten (2014)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Il Tofan & Co., Singerei, Moldova (2014)**

- Technical layout and calculation of a bioethanol plant for 25.000 hl/a. Feasibility study with economic analysis
- With biogas plant for the recycling of residual material and 100% energy self-supply of the distillery

**Tadweer Waste Treatment L.L.C., Dubai, VEA (2013/14)**

- Feasibility study and concept development for a bio-waste fermentation plant for recovery of the organic remains of a sorting garbage treatment plant
- In conjunction with a compost plant
- Preparation of the study together with our Indian partners Jain Irrigation System Ltd.

**OAR Biokompostierung, Altenholz near Kiel (2013)**

- Consulting services and analyzing of an existing bio-waste fermentation plant for its vulnerabilities, conception and action plan for facility optimization
- Implementation of basic trials to determine performance potential and improve the degradability of the feed material used
- Rescheduling an existing pre-fermenter in a hydrolysis state
- Support during conversion and commissioning of the process (ongoing care process)

**STAKO Sp., Klobuck, Poland (2013)**

- Technical layout and calculation of a bioethanol plant for 150.000 hl/a. Feasibility study with economic analysis.
- With biogas plant for the recycling of residual material and 100% energy self-supply of the distillery

**Biogas plant Siedenbollentin 2 (Dirk Andresen), Siedenbollentin (Neubrandenburg) (2013)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Biogas plant Siedenbollentin 1 (Dirk Andresen), Siedenbollentin (Neubrandenburg) (2013)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**AKG Agrar Kompost GmbH, Ammerndorf (2013)**

- Carrying out of the periodic safety inspection according §15 BetrSichV
- Consulting services and analysis of an existing biowaste fermentation plant on their weaknesses, conception and action plan for system optimization
- Implementation of basic trials to determine performance potential and improve the degradability of the feed material used
- Monitoring of optimization measures



**Schwaelbchen Dairy, Bad Schwalbach (2013)**

- Feasibility study and basic evaluation for the dairies residue disposal ( whey and rinsing whey), with a energy recovery concept for electricity and steam with a satellite CHP
- Site investigation for the ideal placement of the fermentation plant in conjunction with the municipal sewage treatment plant
- Costing and economic evaluation of various energy options

**Biogas plant Moldenit GmbH & Co. KG (Dirk Andresen), Schaalby-Modenit (2013)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Biogas plant Artur Braun, Parkstetten (2013)**

- Analysis of the existing RRM plant for vulnerability, conception and action plan for system optimization
- Consulting services and support during the optimization measures
- Advice to improve the possess and the hydrolysis

**Ameres GmbH & Co. Biogas KG, Rannersdorf (2013)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Biogas plant Weigl, Osterhofen (2013)**

- Carrying out of the periodic safety inspection according §15 BetrSichV
- Revision of operational documentation and creating R&I

**Biogas Schleswig GmbH, Schleswig (2013)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Johannes Niggel, Architect, Munich (2012/13)**

- Consulting services and calculations for the design and construction of an biogas plant for manure and renewable primary products

**ENGAZ / ENERCON Ltd. STI, Izmir, Turkey (2012/13)**

- Technical dimensioning and calculations of a feasibility study for waste disposal of a food group
- Estimating of various locations and sizes alternatives

**Mueller GmbH & Co. KG Heizungsbau, Burkersdorf (2012)**

- Preliminary planning of a biogas plant for anaerobic digestion of industrial and agricultural residues with the concept of a local heat supply for a village
- Clarification of the approval requirements.

**BGA Homberg (municipal utility Kassel), Homberg (Efze) (2012)**

- Inventory analysis and concept development to increase performance of a biogas plant that uses renewable primary products and works with pre-switched hydrolysis

**WOGAS GmbH & Co. KG, Wohlsdorf/Scheeßel (2012)**

- Carrying out of the periodic safety inspection according §15 BetrSichV



**WWTP Abwasserzweckverband Starnberg, Starnberg (2011)**

- Carrying out of the periodic safety inspection of the sewage gas installation according §15 BetrSichV

**Genossenschaftsbrennerei Altheim, Altheim (2011)**

- Revision of the operational documentation in order to bring them up to date

**Spradau GmbH und Agrarbetriebs KG, Zehdenick (2011/12)**

- Carrying out of the periodic safety inspection according §15 BetrSichV
- Establishing the risk assessment and the explosion protection documentation
- Inventory and preparation of piping and instrument flow charts, R&I of the actual state

**Bio-NER S.A., Port-au-Prince, Haiti (2011)**

- Feasibility study for a waste management concept with biogas recovery, communal and industrial waste (rum factory, brewery and slaughterhouse)

**Irlbacher Biogas GmbH, Irlbach (2011)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**PepsiCo Germany GmbH, Rodgau (2011)**

- Concept development and fundamental experiments for anaerobic wastewater treatment before discharging to the sewer
- Feasibility study to determine the economics and plant sufficiency

**ENERGAZ / ENERCON Ltd. STI, Izmir, Turkey (2011)**

- Conclusion of a know-how agreement for Turkey
- Developing of system concepts for poultry

**BBM Betreibergesellschaft Biogas Plant Moeckern, Moeckern (2011)**

- Carrying out of the periodic safety inspection according §15 BetrSichV
- Revision of the operational documentation in order to bring them up to date
- Consulting services for the redesign of the power supply

**Bioenergie Hamlar GmbH, Asbach-Baemenheim (2010 - 2011)**

- Engineering services re-commissioning of the biogas plant
- Developing strategies to limit damage
- Revision of the operational documentation in order to bring them up to date

**Exquisa-Karwendel-Werke Dairy, Buchloe (2010 - 2011)**

- Establishing of the approval planning for biogas plant for the fermentation of whey-permeate
- Additional laboratory test, to improve discharge capacity of the excess water into the sewage plant

**e-con AG, Memmingen (2010)**

- Establishing a feasibility study for the fermentation of acid whey and rinsing milk for the dairy Ehrmann
- Studies on the optimum utilization of the biogas in the context of EEG`s and self-sufficiency (stream generation)

**Stulz GmbH, Tengen (2010 - 2011)**

- Consulting services for upgrading an existing biogas plant for renewable resources

**Exact engineers GmbH, Brixen, Italy (2010)**

- Establishing of planning documents for the license for a manure biogas plant with digestate treatment in Pfitschtal, South Tyrol

**Genossenschaftsbrennerei Altheim, Altheim (2010)**

- Carrying out of the periodic safety inspection according §15 BetrSichV
- Revision and major overhaul of the biofilter and the hydrolysis gas extraction
- Installation of a activated carbon filter
- Consulting and planning services for the installation of a new CHP and modification of the energy plant

**Jain Irrigation System Ltd, Jalgaon, India (2009 - 2010)**

- Consultancy services an supervision of a biogas plant for recycling of production waste from the manufacture of fruit juice and press cake of a sugar factory
- Biogas plant with 1,6 MW, with a composting facility for the non-fermentable organic residues in fruit juice processing

**Camperdown compost company, Colac, Australia (2009)**

- Construction of feasibility study for a biogas plant for disposal of waste of a slaughterhouse, a dairy and several other regional food producer
- The study was founded by the Government of the State of Victoria

**Bioenergie Hamlar GmbH, Asbach-Baemenheim (2009)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Biogas KFT, Budapest, Hungary (2009)**

- Expertise on the plant concept an the planning documents of a renewable recourses biogas plant

**Waste Water Treatment Plant of Marktgemeinde Pfeffenhausen (2009)**

- Carrying out of the periodic safety inspection of the sewage gas installation according §15 BetrSichV

**SEL South Tyrolean Electricity AG, Bolzano, Italy (2008 - 2009)**

- Feasibility study and preliminary planning of a biogas plant for recycling of agricultural residues
- Concept development for various digestate recycling routs
- Economic comparison of a centralized or decentralized plant, as well as various forms of company.

**Dr. Gencik, Kuzmice, Slovakia (2008 - 2009)**

- Basic planning of a biogas plant for the recycling of the production waste of a brewery with 350 kW CHP capacity

**Exquisa-Karwendel-Werke Dairy, Buchloe (2008 - 2009)**

- Preliminary planning of a biogas plant for the fermentation of whey and whey permeate
- Integration in supply of steam and CHP
- Digestate processing for the initiation of the excess water in sewage-treatment plant

**BioEnergie Schleswig, Schleswig (2008 - 2009)**

- Project development for the realignment of an existing production facility
- Biogas, bioethanol, rape oil
- Engineering for increase in efficiency

**UBF-INNOVAS GmbH (2008)**

- Project development for 4 MW biogas plant(s) in the USA for the disposal of an egg farm with 3.6 million laying hens
- Digestate treatment with extraction of high-quality fertilizer
- Treatment of excess water for spray irrigation

**SAB Miller, Kaluga, Russia (2008)**

- Planning a disposal concept for brewery waste of a 6 million hl per year Brewery
- With biogas production for self-energy supply
- Combination of biogas and solids combustion for steam production
- Drastic reduction of waste for disposal

**Biogas plant Paulushofen, Beilngries (2008)**

- Carrying out of the periodic safety inspection according §15 BetrSichV

**Theologische Hochschule Friedensau, Moeckern (2008)**

- Heat supply concept for a small town
- Combination of a biogas analysis with a wood chip furnace
- District heating network

**UBF – INNOVAS GmbH (2008)**

- Planning and construction of a laboratory and pilot plant for biogas production and alcohol fermentation

**Jain Irrigation Systems, Jalgaon, India (2007 - 2009)**

- Know-how transfer and planning of a biogas plant for residues of fruit processing
- Designing a composting facility for the non-fermentable residues
- Usage of the biogas in a 1 MW CHP with heat integration into production
- The project was processed via our sister company BMK-INNOVAS GmbH

**UBF-INNOVAS GmbH (2005 - 2008)**

- Project development of biogas plants for three large bioethanol plants for energy self-supply
- Joint-venture with United Biofuels Europe for South-East-Europe and worldwide.
- Concept development for an energy-autonomous distillery
- Implementation of the authorization planning a 64,000 cbm biogas plant in Hungary
- Processing of the excess water as process water

**BMP Biomasse Project GmbH, Radolfzell (2006 - 2008)**

- Implementation of a R&D project supported by the Federal Department for economic affairs, together with two other project partners
- Development objectives and research theme was the “development of a method for the complete energetic-specific utilization of brewery waste“.

**BEtAX (EETEK), Trencin/Bratislava, Slovakia (2007 - 2008)**

- Basic planning of a biogas plant for pig and poultry manure (1 MW cogeneration power)
- Know-How transfer to Slovakia

**Defensas Ambientales S.L., Barcelona, Spain (2006 - 2008)**

- Study on the basic evaluation and preliminary planning of a fermentation plant for pig slurry
- With post-treatment of the digestate on discharge quality of the excess water and manufacture of high-quality fertilizer of the solids
- Planning preparation for an industrial pilot plant in Catalonia