

*The following projects listed are exemplarily for our activity and experience.*

## Reference List for Bioethanol and Biodiesel

### **Green Bio Fuel, Bad Zurzach, Switzerland (2015/16)**

- Project planning of the reconstruction for a second-hand Biodiesel (FAME) plant for 30.000 t/a.
- Redesign for using UCO (used cooking oil) instead of pure vegetable oil.

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

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

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

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

### **R & D Joint Project: "Effective and cost-efficient production of Bioethanol by using High Performance-Sequential-Batch-Reactor-Technology and Pervaporation with Hydrophobic Zeolite Membranes" (2010 - 2012)**

- With subsidies of BMELV (German Federal Ministry of Food, Agriculture and Consumer Protection) funded research and development project for the advancement developing of an innovative process producing alcohol in an energy efficient way.
- Our Subproject covered the pre-engineering and cost analysis of the process
- In research community with the partners: Hochschule-Anhalt (Anhalt University), Koethen; Institut fuer Bioprozess- und Analysemesstechnik e.V. (iba), Heilbad Heiligenstadt and Fraunhofer-Institut fuer Keramische Technologien und Systeme (IKTS), Hermsdorf.

### **Inocre Umwelttechnik GmbH, Grosshelfendorf, Germany (2010)**

- Study Basic research and project pre-planning (pre-design) for a bioethanol plant producing alcohol by fermentation of sweet and acid whey, for 70,000 hl/a; 96 vol% alcohol, together with a biogas plant for utilization of the slop and for energy self supply.
- Dimensioning and design of the process developed by Inocre.

### **R & D Joint Project: Application of the "High Performance-Sequential-Batch-Reactor-Technology" for bioethanol production (2008 - 2010)**

- With subsidies of BMWi (German Federal Ministry of Economics and Technology) funded research and development project for developing an innovative alcohol production process.
- Project development according to the basics of Prof. Paetz, Anhalt University, as well as the laboratory test-out in our pilot plant.
- In research community with our partner Empl-Anlagen GmbH & Co.KG, Schwindegg

**Bioenergie Schleswig GmbH, Schleswig, Germany (2008)**

- Optimization measures at the existing Distillery for the use of alternative basic materials containing starch and sugar.
- Design and installation of an special distillator for concentration of alcohol-water coming from alcohol separation of beer (making of non-alcohol beer)

**Biokraftstoff Nord AG (formerly Biodiesel – Bokel GmbH), Sprakensehl-Bokel, Germany (2006/07)**

- Planning for the duplication the production capacity of the existing biodiesel plant.
- Enhancement of the biodiesel plant by adding a refining of vegetable oils.

**BIONEOS KG, Bad Feilnbach (2006)**

- Study Basic research and project pre-planning (pre-design) for a bioethanol plant with 250,000 hl/a capacity; 99,5 vol% Alcohol, together with a biogas plant for utilization of the slop and for energy self supply..
- In planning consortium with our partner Empl-Anlagen GmbH & Co.KG, Schwindegg

**Fuerst Bismarck. Brennerei, Schoenau bei Berlin, Germany (2005)**

- Feasibility study and basic research for the reconstruction of the existing distillery into a biodiesel plant.
- In planning consortium with our partner energie + konzept, Hamburg.

**Brennereigesellschaft Helvesiek, Helvesiek (Scheessel), Germany (2004)**

- Feasibility study and basic research for the reconstruction of the existing distillery into a biodiesel plant with own oil mill.
- In planning consortium with our partner energie + konzept, Hamburg.

**BayWa AG, Munich, Germany (2003)**

- Basis research and pre-planning of an oil mill with annual capacity of 40,000 t

**UBS Schmikale, Berlin, Germany (2002)**

- Business consultancy of the owners in technically and economically regards for the construction of a biodiesel plant with oil mill in Eastern-Europe.
- Inspection and appraisal of the basic concept, evaluation of present offers, checking of the project's cost calculation, revision of the economic calculation and business plan.
- Support of the project development for the construction of a 75,000 t/a plant.

**BioOelwerk Magdeburg GmbH, Germany (2001/02)**

- Business consultancy of the owners in technically and economically regards for the construction of a biodiesel plant with oil mill in Eastern-Europe.
- Inspection and appraisal of the basic concept, evaluation of present offers, checking of the project's cost calculation, revision of the economic calculation and business plan.
- Support of the project development for the construction of a 50,000 t/a plant.
- Assistance and consulting of the project management team.
- Establishing of a QMS (Quality management system) for certification the factory according ISO 9001.

**Kornbrennerei Bernhard Boeckenhoff, Raesfeld-Erle, Germany (2001)**

- Feasibility study and basic research for the reconstruction of the existing distillery into a biodiesel plant.
- Overall planning for the reconstruction of the existing distillery into a biodiesel plant.
- Preparing of the approval documentation according 4. BImSchV (German Federal Immission Control Ordinance).

**Brennereigenossenschaft Waldsassen, Germany (2001)**

- Feasibility study and basic research for the reconstruction of the existing distillery into a biodiesel plant.

**Biodieselwerk Kusey Franz Stuckmann, Kusey, Germany (2001)**

- Feasibility study and basic research for the reconstruction of the existing distillery into a biodiesel plant.

**Energiegenossenschaft Stoetze, Germany (2001)**

- Feasibility study and basic research for the reconstruction of the existing distillery into a biodiesel plant.

**Biodiesel – Bokel GmbH i.G. (2000 - 2001)**

- Feasibility study and basic research for the reconstruction of the existing distillery into a biodiesel plant.
- Overall planning for the reconstruction of the existing distillery into a biodiesel plant.
- Preparing of the approval documentation according 4. BImSchV (German Federal Immission Control Ordinance).

**Biodiesel Pfeffenhausen GmbH & Co., Pfeffenhausen, Germany (2000 - 2001)**

- Process development in order to use existing dairy process equipment for biodiesel production. Planned production capacity 40,000 t/a.
- Validation of the process and the quality, process trials to ensure the DIN quality.
- Clarification of the approvals.
- Preparation of a business plan to ensure the financing.

**KVG Cordes & Stoltenburg GmbH & Co., Schleswig (2000 - 2001)**

- Feasibility study and basic research for the reconstruction of the existing distillery into a biodiesel plant.
- Process development in order to use existing process equipment.
- Clarification of the approvals, acquisition of subsidies in co-operation with energie + konzept, Hamburg
- Overall planning for the reconstruction of the existing factory into a biodiesel plant.
- Preparing of the approval documentation according 4. BImSchV (German Federal Immission Control Ordinance).