

THE GROWTH OF BIODIESEL



Dr Ralf Türck, General Manager and Head of the Director's Board for AT GmbH

WE NEED ENERGY IN ORDER TO STAY MOBILE; THE EARTH'S RESOURCES, HOWEVER, ARE LIMITED. BIODIESEL PROVIDES A SOLUTION.

Fossil fuel reserves such as mineral oil, natural gas and coal will almost certainly be depleted within the coming 30-50 years. Simultaneously, the use of fossil fuels results in an ever-growing degree of environmental pollution. However, there is one renewable energy source that can be used that is environmentally acceptable – biodiesel.

Campa-Biodiesel GmbH & Co. KG was set up in August 1998 at Ochsenfurt, about 25km south of the German town of Würzburg. The participating companies are VNR GmbH & Co. KG (a company exploiting third-party rights trading in renewable raw materials) and AT Agrar Technik GmbH & Co. KG (a company with many years of expertise in state-of-the-art process engineering, which guarantee biodiesel meeting DIN-standards and high quality glycerol).

Dr Ralf Türck, General Manager and Head of the Director's Board for AT GmbH, talks about the role of AT in biodiesel production.

APD. Throughout 2002 Europe has experienced a huge boom in biodiesel. What role does AT play in this market?

RT. As one of the leading engineering companies for methyl-ester and glycerol production plants we have been working in the field for more than 10 years. Up until 2001 we provided production capacities of 102,000MT (six plants) all throughout Europe. Our first biodiesel plant, by the way, was set up in Austria in 1992.

In 2002, we'll set up two more AT plants with a total capacity of 250,000MT, and in 2003 at least another five plants 250,000MT will be opened. Thus, it is clear that AT technology is in high demand in an ever-expanding market.

APD. What is so special about the AT method of producing vegetable oil methyl ester?

RT. Basically, what we do is offer a semi-continuous process that transforms the vegetable oil into methyl-ester in an alkaline reaction. We call this reaction trans-esterification. Due to the fact that the AT-patented production process enables us to use crude vegetable oil as a raw substance, the production costs are very low. Moreover, the reaction takes place at standard pressure and ambient temperature.



Moritz Gaede, General Manager and Executive Director for Campa-Biodiesel

In 2000, Campa-Biodiesel started an AT-designed turnkey biodiesel plant located at Würzburg, Bavaria. Moritz Gaede, General Manager and Executive Director for Campa-Biodiesel, gives his thoughts on the benefits of an AT-designed plant.

APD. Campa-Biodiesel has decided to use the AT method for producing biodiesel. What were the reasons for this?
MG. Our demands from a biodiesel plant may be summed up as follows: low investment, simple handling of chemical processes and reliable technology combined with maximum yields. Moreover, by using AT-technology the production costs are kept very low, due to the small operating resources used in the process. That is why our company is able to compete successfully with any other producer at any time.

APD. What specific advantages might customers experience from implementing the AT method?
MG. Customers are interested in operating plants that are robust. That is the case with AT. In addition, capacity can be expanded very easily due to a unique technological design. For instance, at Campa-Biodiesel we are planning to increase production capacities by about 25 percent. This will be possible at fairly short notice and at manageable costs only because of the modular plant concept.

APD. You have been producing biodiesel and glycerol for almost three years. What do your customers think about the quality of your products?

MG. Since we put our plant in operation, we have never had any plant technological problems worth mentioning and as a consequence, we were able to meet the quality regulations for biodiesel in Germany (DIN E 51606). Also, the glycerol we produce sells well to international companies, including those in Asia Pacific – for instance our Japanese trading partners. You see, Campa-Biodiesel feels at home everywhere in the world.

In fact, a special feature of all AT-Biodiesel plants is the esterification, where an acid catalyst is used instead. That is how we minimise yield loss resulting from the usage of vegetable and animal fats, which contain a high amount of free fatty acids. For instance, AT-plants esterify cooking or waste oils from deep fryers in hamburger restaurants.

APD. Does that mean that you can also make biodiesel from animal fat?

RT. Yes, you can use animal fat as raw material. AT offers multi-feedstock technology, meaning that a variety of triglycerides (oils and fats) can be used depending on site location and market reality.

APD. Could you give us some practical examples?

RT. For instance, our Spanish customer's AT plant near Barcelona will operate with waste oils or yellow grease (50 percent) on the one hand, and, on the other hand, with fatty acids (the remaining

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AT also lends support when it comes to project financing, marketing, research and development, to mention only a few examples

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50 percent). Our Asian partners, however, prefer coconut oil or crude palm oil (CPO) as feedstock.

Asia is an important market for us. Along with a German bank which sponsors ecologically-minded projects we are close to entering a contract with our business associates in Thailand and Indonesia. Also, we are in regular contact with Japanese and Australian engineering companies that are interested in buying AT licences.

APD. So AT does not exclusively offer turnkey projects?

RT. Well, again our customers benefit from the company's flexibility. As the patent mentioned above – as well as engineering and automation – fully resides with AT, we are able to offer custom-made solutions to our customers. This may be the construction of a turnkey plant for producing biodiesel and pharnglycerol or a licensing agreement.

APD. What else can customers expect from AT?

RT. Our customers, who usually work in the oleo-chemical or agricultural sector, may look forward to state-of-the-art technology, as well as to a professional and long-term business partnership that does not terminate on delivery of a production plant. In addition, AT also lends support when it comes to project financing, marketing, research and development, to mention only a few examples. ■

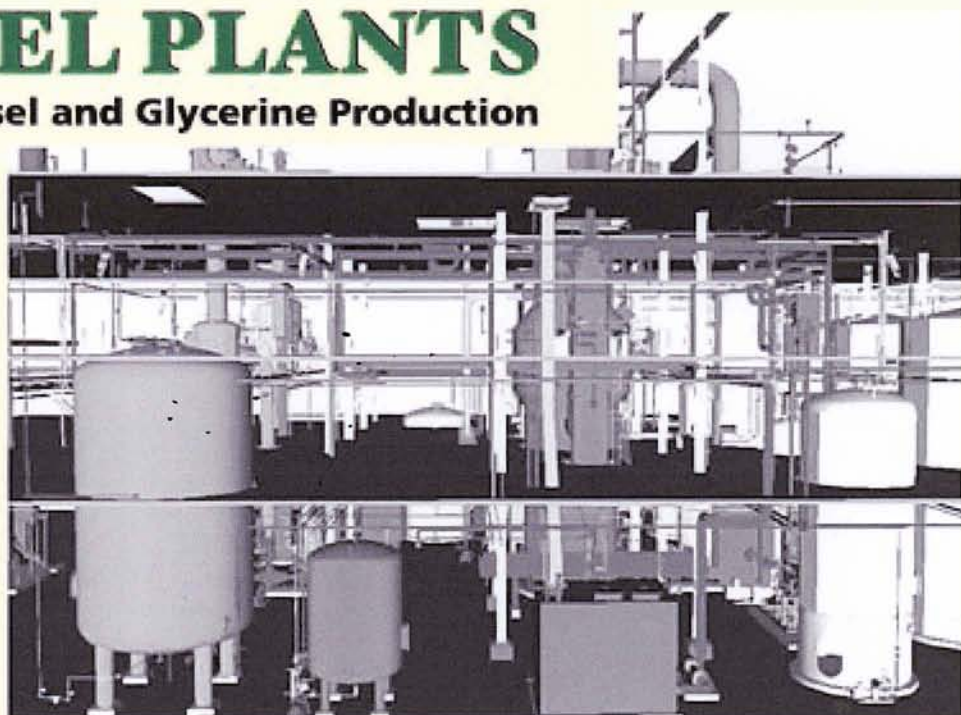
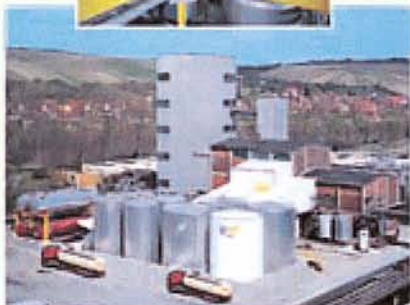
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BIODIESEL PLANTS

Engineering for Biodiesel and Glycerine Production



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