POWER PLANT EQUIPMENT
PRODUCTION LINES
CONSULTING SERVICES

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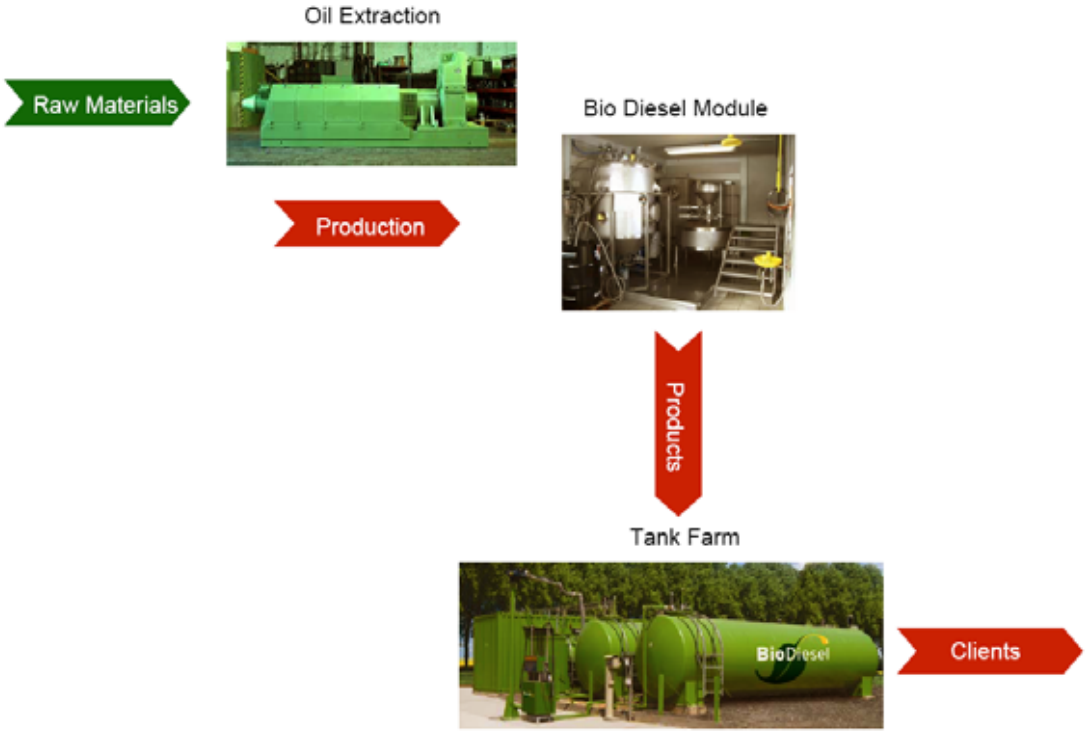
Budgetary Proposal

Standardized Modular System Oecosys 4000 for the Production of Biodiesel with a Capacity of 3600 tons p.a.

So far, it was only possible to cover the costs for transesterification of vegetable oils and natural fats to produce BioDiesel by production on a large industrial scale. Thanks to the intelligent design of the Lohrmann BioDiesel Packages, it has now become possible to eliminate cost-intensive parts without affecting from the quality of the produced fuel. Therefore decentralised plants with lower capacities of BioDiesel can for now be operated very profitably.

Basic Components:



Lohrmann International provides a standardized technology for the efficient and safe production of BioDiesel.

Modul 1: Oil Extraction

An important prerequisite for the esterification process is an excellent (or good) vegetable oil quality. To guarantee such quality, we recommend the use of a reliable oil press as follows:

Model:	Oecosys 4000
Capacity (Input):	750 – 1000 kg/h
Length:	4800 mm
Weight:	1200 mm
Height:	1700 mm
Net-Weight:	9200 kg
Installed Power:	45 kW

Scope of Supply:

2 worm extruders – Type Oecosys 15/45
2 combined charging heat exchangers
2 tubular Magnets
2 frequency converters
1 set of special tools
1 masse conveyor
1 raw oil tank
1 additional heating for the raw oil tank
1 vertical filter
1 compressor
1 compressed air treatment
1 electrical Switchboard

Module Price ex works: on request

Module 2: Esterification Plant (BioDiesel Container)

The whole process runs in a single tank and is completed after six to eight hours, depending on the quality of the input material. The plant technology is controlled automatically by means of a programmable logic controller (PLC). The process is visualised on a touchscreen monitor. The operator thus has the plant status in his sight at all times. Continuous data recording ensures the process control and reproducible process parameters, consequently minimising the labour and monitoring work. The process can also be telemonitored by means of a data teletransmission system.

1. A defined mass of vegetable oil (triglyceride) or fat is drawn into the central stainless steel process tank where it is heated.

2. Methanol and a catalyst are added to the heated product. The transesterification process can then start.

3. The glycerine formed settles compactly at the bottom of the tank and will be drawn off.

4. The raw biodiesel is washed with water in order to remove impurities.

5. The water settles at the bottom of the tank within a short period and is drawn off.

6. The process tank is heated for distillation, completely removing the water and methanol that have not settled in the tank under a vacuum.

7. The finished biodiesel is drawn off and pumped into the storage tank. The cycle can start again from the beginning.

Module Price ex works: on request

Module 3: Tank Farm with Piping

BioDiesel is readily biodegradable (water hazard class 1) which means that there are no special regulations in respect of transport and storage.

Scope of Supply:

1 storage tank BioDiesel 50 m³
1 storage tank washing water 50 m³
1 storage tank glycerine mixture 50 m³
1 storage tank methanol 50 m³
1 storage tank plant-oil
1 complete plant piping
1 set of tank fittings
1 set of pumps for BioDiesel, glycerine and washing water
1 complete electrical Installation
1 density test and commissioning

Module Price ex works: on request

Est. Cost of Transportation CIF Destination Port: on request
Est. Cost of erection supervision and commissioning : on request

Delivery time: 4 to 6 months