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# Process optimization delivers significant energy savings

## Snapshot

### Client

Bio-diesel plants, Germany

### Challenge

To identify potential energy savings in both power- and heat-consuming processes in a fat treatment plant and two bio-diesel refineries, taking into account energy efficiencies and required investment costs.

### Solution

We used our experience in the optimization of industrial process and power plants to collect and analyze process data, identify improvement opportunities, develop process designs and prepare cost estimates.

### Benefits

Our client adopted our recommended energy efficiencies using proven technical solutions to deliver a potential saving of €650,000 annually at an investment cost of around €340,000.

Our long experience of optimizing process and power generation plant delivers valuable benefits to a wide range of industrial and manufacturing processes. In this case, we used our experience to interpret process data and propose energy efficiency improvements at plants involved in the production of bio-diesel from recycled feedstocks.

### Range of efficiency measures

At our client's fat treatment plant we identified three efficiency measures for the steam generators: reducing steam pressure to save energy lost through high flue gas temperatures; an additional economizer; and using heat recovered from waste water in processes such as barrel cleaning.

At one refinery plant we identified measures to save approximately 33% of annual gas consumption and 6.25% of electricity by means of: reduction of exhaust flue gas temperature of the steam boiler and thermal oil heater; condensate pre-heating; heat recovery from distillation and drying; and optimization of the cooling water system.

Similar measures were proposed at the second refinery, as well as an additional polymer heat exchanger and optimization of the instrument air unit and air conditioning system. These delivered potential savings of 44% of gas consumption and 5% of electricity.

### Proven solutions

Our proposals involved no major modifications, used proven technical solutions and presented low technical risks. As well as carrying out process data collection and analysis, we discussed the issues with plant managers and staff.

When our client decided to proceed with the efficiency projects we carried out a detailed feasibility study including basic design, risk analysis and budget calculations.

# €650,000

annual energy savings

## Discover Energy Services

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