

GREEN POWER
Feeds Your Engine



2nd VegOil

Demonstration of 2nd Generation Vegetable Oil Fuels in Advanced Engines

**Workpackage 3
Fuel development**

**Deliverable N° 3.8:
Reference press I**

Publishable summary

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1 Summary

For the set up of a reference press in Austria it was necessary to test advanced oil cleaning procedures. The decentralised oil mill of Öl und Bioenergie GmbH, which is specialised on rape seed oil production, was selected for the conversion and later on for the production of 2nd generation vegetable fuel in this project.

Öl und Bioenergie is specialised on rape seed oil production and strategic well located to Waldland Vermarktungs GmbH, in 3851 Kautzen, Bauhofweg 7. For the trials on the advanced oil cleaning processes and later on for the production of 2nd generation vegetable oil, which will be used for the demonstration fleets in the project, the decentralised oil mill of Öl und Bioenergie GmbH is particularly suitable. On the company site sufficient storage-abilities for seed (silos) as well as for produced vegetable oil (tanks) and by-products are available. Furthermore the technique which is necessary for seed conditioning is present. Even a filling station and a road tanker for distribution exist.

It was planned to mix the purifying additive OBEFIL into vegetable oil using a dosage unit, which has been purchased. Within few tests on the advanced vegetable oil production and the purifying procedure the oil mill has been adjusted and upgraded for efficient production.

Milestone in this task was to set up a reference oil press for the production of advanced vegetable fuel as well as the analysis of a 2.000 litre sample cleaned down to advanced oil quality. Because of the rapid development of the oil production process a oil quality which is defined in milestone M3.5 as < 1 ppm P/Ca/Mg was realised and milestone M3.4, (vegetable oil < 3,5 ppm P/Ca/Mg) could be skipped.

The decentralised oil mill of Öl und Bioenergie GmbH (Austria), was upgraded for the advanced cleaning process, so that the set-up of a reference press in Austria for 2nd generation vegetable oil production is concluded.

It was necessary for 2nd generation vegetable oil production to develop a special dosage unit in cooperation with a mechanical engineering company. Several conversions of the dosage unit were realised to adjust the dosage unit for the characteristics of additive OBEFIL.

Ongoing upgradings of the oil mill were realized, advanced purifying procedures were tested, the produced vegetable oil was analysed and a deeply satisfying quality was reached.

In the course of 2nd generation vegetable oil (< 1ppm P/Ca/Mg) production for the demonstration fleet, optimisation on the filtration process for more efficient vegetable fuel production were necessary. In the future the replacement of filter leaves inside of the pressure leaf filter is planned to increase the efficiency of the vegetable oil production.

Because of the rapid oil development in the prior tasks the demonstration fleet (WP5) could be delivered pretty earlier with 2nd generation vegetable oil with a quality of < 1 ppm P/Ca/Mg than expected.

Based on the successful implementation of the advanced purifying process in the reference oil mill of Öl und Bioenergie GmbH in Austria, the establishing process will be transferred for further set-up of selected oil mills in France.